PRESSURE OR PAMPER? THE EFFECTS OF POWER AND TRUST DIMENSIONS ON SUPPLIER RESOURCE ALLOCATION

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Leveraging the supply chain for competitive resources remains a key challenge for supply chain management. Drawing on social exchange theory, this study examines SCM practices that help firms to acquire better supplier resources than rival firms that source from the same supplier. We provide a clearer picture of coercive and competence power, and goodwill and competence trust as key mechanisms to improve supplier resource allocation of physical and innovation resources. We analyze survey data of 185 supplying firms using structural equation modeling. Our analyses yield several interesting findings. First, contrary to other studies, we find that coercive tactics do not necessarily affect supplier resource allocation negatively and goodwill trust does not inherently affect supplier resource allocation positively. Second, the results of a multigroup analysis indicate that the dependence of a supplier on the buying firm—in terms of share in turnover—affects the relationship between the trust dimensions and supplier resource allocation more than it does the power dimensions. Third, goodwill trust only affects supplier resource allocation when the buyer has a large share in the supplier's turnover, while competence trust is more effective if buyers account for a small share in the supplier's turnover. The contributions of our study for the supply chain management and social exchange theory literature are discussed.

INTRODUCTION

The relationships between a buying firm and its suppliers are crucial in acquiring resources that are essential for achieving firm-level competitive advantage (Ellram, Tate & Feitzinger, 2013; Hitt, 2011). This is especially the case when that buying firm's rivals source from shared suppliers (i.e., suppliers that simultaneously supply rival firms). In fact, when rival firms clash, it is not merely their internal resources, but rather the collective resources of their supply chains that determine the outcome (Hult, Ketchen & Arrfelt, 2007). It would therefore be extremely difficult for firms to attain competitive advantage when competitors acquire better resources from a shared supply chain (Dyer & Hatch, 2006; Takeishi, 2001). For example, Takeishi (2002) explains how automakers lose their competitive edge because their high-level knowledge is diffused to competitors through shared suppliers. Terpend and Ashenbaum (2012) provide an example of how, in the beginning of the 1990s, GM's key suppliers became reluctant to share their latest technologies with GM and were shifting their brightest

engineers to Chrysler and Ford, due to GM's aggressive supply chain practices (Kelly & Kerwin, 1993). These examples illustrate how supply chain management (SCM) practices can influence resource allocation decisions of suppliers. However, the literature that examines resource rivalry mainly is conceptual (e.g., Capron & Chatain, 2008; Ellram et al., 2013; Markman, Gianiodis & Buchholtz, 2009). Some empirical works (e.g., Gimeno, 2004; Lavie, 2007) do seek to explain the concept of rivalry but provide little insight into the strategies firms might adopt to win the resource competition. Thus, it is unclear what SCM strategies firms might adopt to improve their resource position in the presence of competition.

This study focuses on power and trust as key mechanisms that can be used by firms to improve their resource position by acquiring better supplier resources (e.g., best ideas, key technological information, scarce materials) than competitors. Prior research identifies power and trust as main mechanisms that can be used simultaneously to influence the supplier (Bachmann, 2001; Ireland & Webb, 2007; Terpend & Ashenbaum, 2012). For instance, firms might use power to force their suppliers to shorten delivery times, or buyers could build trust to ensure that the supplier's best ideas are shared with them instead of with their competitors. The concepts of power and trust are multidimensional, and it is important to differentiate between these different dimensions. For example, the coercive and reward dimensions of buyer power are shown to relate differently to the supplier's performance (Terpend & Ashenbaum, 2012), supplier commitment (Zhao, Huo, Flynn & Yeung, 2008), and relationship cooperation (Benton & Maloni, 2005). In addition, several conceptual works emphasize the importance of differentiating between the goodwill and competence dimensions of trust (Bachmann, 2001; Das & Teng, 2001; Ireland & Webb, 2007). However, the current SCM literature mainly discusses the effect of the power and trust dimensions on the absolute performance of the buyer, without taking the position of the rival into account. What is missing in the literature is a discussion of the impact of the different dimensions of power and trust on supplier resource allocation.

This study builds on social exchange theory (SET) to examine power and trust as the mechanisms that can help firms to obtain better resources from suppliers that are shared with competitors. SET is driven by the central concept that behavior of a company and resource exchanges in relational exchanges can be explained by relational mechanisms (Blau, 1964; Thibaut & Kelly, 1959; Zhao et al., 2008). We build on SET to hypothesize on the effects of coercive power, reward power, goodwill trust, and competence trust on the supplier's allocation of physical resources and innovation resources. In addition, we examine the

effects of the power dimensions on goodwill trust and how the effects of power and trust differ depending on the buying firm's share in the supplier's turnover. Our study makes several contributions. We contribute to the SCM literature that focuses on power and trust as antecedents of firm behavior by combining the different dimensions of both power and trust in one empirical model, by examining the link between the power dimensions and goodwill trust, and by examining the effect of the buying firm's share in the supplier's turnover. Specifically, a key contribution is that we identify power and trust as key mechanisms for buying firms to acquire better supplier resources than competitors. In addition, we make an empirical contribution to the SET literature by showing the different effects of power and trust on different types of supplier resource allocation.

This paper is structured as follows. In the following sections, we discuss the concept of supply base rivalry, explain how SET can explain supplier resource allocation behavior, and review the relevant power and trust literature. Then, we develop our hypotheses and research model. Subsequently, we detail this study's methodology and results. We conclude with a discussion of the results, this study's limitations, and directions for future research.

SUPPLY BASE RIVALRY

This study's research questions originate from the stream of literature that has stressed the importance of resources that are acquired externally (Das & Teng, 2000; Dyer & Singh, 1998; Gulati, Nohria & Zaheer, 2000). Resources can be defined as "the tangible and intangible entities available to the organization that enable it to produce efficiently and/or effectively a market offering that has value for some market segment" (Hunt & Davis, 2008, p. 13). Because competitive advantage is a relative notion that is derived from superior resources (Peteraf, 1993), resources can be seen as the "axes of competition" (Markman et al., 2009, p. 425). Consequently, a firm that attains comparative advantage (relative to competitors) in supplier resource allocation will more easily gain competitive advantage in its market position (Hunt & Davis, 2008). Therefore, if a firm wants to attain competitive advantage through resources obtained from its supply chain, this firm needs to obtain *better* supplier resources than competitors.

As a result, firms—knowingly or unknowingly—engage in a competition with their rivals to acquire superior resources (Obloj & Capron, 2011). In the strategic management literature, various perspectives emerged stressing the importance of taking into account competitors' resource positions when assessing a firm's ability to attain competitive advantage from its resources (Adegbesan, 2009; Capron &

Chatain, 2008; Markman et al., 2009). Similarly, the recent SCM literature emphasizes the concept of rivalry in supply markets (Ellram et al., 2013), attaining a preferred customer status (defined by preferential resource allocation of suppliers; Hüttinger, Schiele & Veldman, 2012; Schiele, Calvi & Gibbert, 2012), supplier resource mobilization (Ellegaard & Koch, 2012; Villanueva, Van de Ven & Sapienza, 2010), and obtaining better supplier resources than competitors (Hunt & Davis, 2012). Yet, as Obloj and Capron (2011) observe, most empirical studies examine the absolute resource position of firms *without* accounting for the role of competitors' resource positions. And, although the literature does describe certain strategic SCM practices that may influence performance (e.g., Chen, Paulraj & Lado, 2004; Hult et al., 2007; Yeung, 2008), little is known about the actual SCM strategies that improve a firm's resource position relative to its competitors. Therefore, the question of "What SCM strategy should a firm apply to improve its relative resource position?" remains largely unanswered.

In the following sections, we draw on SET to describe the SCM mechanisms that can help firms in acquiring better supplier resources than competitors and develop hypotheses explaining the relationship between these mechanisms and supplier resource allocation.

THEORETICAL BACKGROUND

Social exchange theory was first established as a theory of interpersonal relations (Blau, 1964; Homans, 1958; Thibaut & Kelly, 1959). A social exchange refers to a situation in which the actions of one individual provide the rewards or punishments for the actions of another individual (and vice versa) in repeated interactions (Muthusamy & White, 2005). In contrast to economic exchanges, social exchanges are not limited to material goods but also include intangible value. Central to SET are norms of reciprocity that regulate interactions between partners based on the expectation of giving and receiving relational benefits (Blau, 1964; Lambe, Wittmann & Spekman, 2001). Partners adjust their behavior and actions toward each other based on the expected relational benefits (Nyaga, Lynch, Marshall & Ambrose, 2013). The benefits obtained from social exchanges often are provided voluntarily and are not explicitly contracted (Das & Teng, 2002). Resources received as a result of interaction between partners can be seen as such benefits. Accordingly, resources can be understood as the currency of social exchange (Kankanhalli, Tan & Wei, 2005). Foa and Foa (1980) characterized six types of resources in interpersonal exchange: love, status, information, money, goods, and services.

Similar to interpersonal relationships, social exchanges are important for interorganizational

relationships (Muthusamy & White, 2005). Successful relationships with suppliers can create benefits that extend beyond the actual product or service exchange (Lindgreen & Wynstra, 2005), and a key determinant of a successful relationship with a supplier is the relationship itself (Lambe et al., 2001). Similar to interpersonal relationships, relationships between firms develop through repeated interactions in which firms can use different mechanisms to influence the exchange partner. SET can therefore be used to explain the behavior of a supplying firm contingent on the relational mechanisms applied by the buying firm. For example, SET has been applied as a theoretical framework in examining the effects of time pressure in retail supply chain relationships (Thomas, Esper & Stank, 2010) and Nyaga et al. (2013) used SET to theorize on the effects of relationship quality and sources of power on behavioral and operational outcomes in dyadic relationships.

As indicated above, we aim to examine the effect of a buying firm's SCM strategies on supplier resource allocation. Because SET is driven by the central concept that behavior of a company and resource exchanges in relational exchanges can be explained by relational mechanisms (Blau, 1964; Thibaut & Kelly, 1959; Zhao et al., 2008), we base our hypotheses on the SET framework. More specifically, we build on two core variables from SET that are crucial to understand the functioning of any buyer–supplier relationship: power and trust (Donaldson & O'Toole, 2007; Hailén, Johanson & Seyed-Mohamed, 1991).

POWER, TRUST, AND SUPPLIER RESOURCE ALLOCATION

In the SCM literature, power and trust are seen as the two main strategies used by buying firms to influence suppliers (Terpend & Ashenbaum, 2012). Both power and trust can be seen as mechanisms to control the dynamics of social business relationships (Bachmann, 2001). Researchers of SET have provided a number of conceptualizations of power, in which the ability of one social actor to influence another actor is put central (Narasimhan, Nair, Griffith, Arlbjørn & Bendoly, 2009). Building on this conceptualization, power within the context of a buyer–supplier relationship can be defined as the ability of the buying firm to influence or control the decisions and behavior of the supplying firm (Narasimhan et al., 2009). Therefore, power is seen as the mechanism of one firm to induce desired actions of another firm by either punishment or threatened sanctions, or by providing or withholding rewards (Ireland & Webb, 2007; Maloni & Benton, 2000). Trust, on the other hand, exists when a firm has confidence in a partner's reliability and integrity (Kwon & Suh, 2004;

Morgan & Hunt, 1994). Trust is often described as one of the most important variables in SET (Lambe et al., 2001). Trust between firms creates an atmosphere where partners willingly exceed the minimal requirements of an exchange relationship, based on the belief that the partner will take actions that will result in positive outcomes for the firm and will not perform actions that result in negative outcomes (Anderson & Narus, 1990; Ireland & Webb, 2007).

Power

The literature describes different sources of power. These sources can be categorized as mediated power and nonmediated power. Nonmediated sources of power are not specifically exercised to influence the partner. In fact, a firm may not even be aware that these nonmediated sources of power exist (Maloni & Benton, 2000; Terpend & Ashenbaum, 2012). Using mediated sources of power, a firm deliberately controls the reinforcements guiding the partner's response (Maloni & Benton, 2000; Terpend & Ashenbaum, 2012). The most widely recognized sources of mediated power are coercive power and reward power. Coercive power stems from a firm's ability to punish the partner if this partner fails to conform to the firm's influence attempt (French & Raven, 1959). Reward power depends on the firm's ability to administer positive valances if the partner conforms to the firm's influence attempt (French & Raven, 1959).

Buying firms use power to produce intended changes in the supplier's behavior by deliberately controlling the reinforcements guiding the supplier's response (Maloni & Benton, 2000; Ramsay, 1996). Thus, the successful application of buyer power results in the intended changes in the behavior of the supplier (Ramsay, 1996). Consequently, failed attempts may not result in any changes in the supplier's behavior or even in undesirable behavior. For example, if a buyer decides to punish a supplier by reducing its business with this supplier, the supplier may become reluctant to make investments in processes that could have benefited the buyer. The application of power might therefore also have a negative effect on supplier resource allocation. To effectively capture better supplier resources, firms need insight into how coercive and reward power relate to supplier resource allocation.[1]

Trust

Trust is a multilevel concept that can exist between individuals and between organizations. Similar to

[1]Below, we operationalize coercive power and reward power as the supplier's perception of the buying firm's use of these power dimensions. For readability purposes, we simply refer to "coercive power" and "reward power" in our hypotheses, even though more descriptive construct names (e.g., perceived use of coercive power) would better fit our operationalization.

power, trust has different dimensions. Based on the works of others, Das and Teng (2001) distinguish between two main dimensions: goodwill trust and competence trust. Goodwill trust refers to the degree to which a partner trusts the other to be willing to act in ways that exceed the stipulated contractual agreements without explicitly asking for such help (Ireland & Webb, 2007; Roy, Sivakumar & Wilkinson, 2004). Competence trust refers to a firm's expectation of a partner's technical competence or expertise (Mayer, Davis & Schoorman, 1995).

Trust is considered to be a crucial element for firms to enter in a relationship and to develop this relationship (Ireland & Webb, 2007; Morgan & Hunt, 1994). When a buyer and supplier trust one another, they are more willing to share resources without the fear of opportunistic behavior by the other party. Differences in levels of trustworthiness can therefore be expected to relate to different levels of resource allocation from partner firms (Tsai & Ghoshal, 1998). The literature on trust in buyer–supplier relationships mainly describes the positive effects of trust. For example, the supplier's trust in the buyer is found to be positively associated with the buyer's perception of relationship performance (Johnston, McCutcheon, Stuart & Kerwood, 2004).

HYPOTHESES

In the following sections, we build on SET reasoning and existing research to introduce our hypotheses. The first hypotheses (H1a–H4b) link power and trust to supplier resource allocation. The SET literature and SCM literature identify many different resources. Generally, when applied to interorganizational studies, the resources characterized in interpersonal exchange (cf., Foa & Foa, 1980) can be divided into two fundamental categories: tangible resources and intangible resources (Cropanzano & Mitchell, 2005; Galbreath, 2005). The strategic role of SCM can be seen as to acquire these external tangible and intangible resources in order to increase the competitiveness of the firm. However, the extent to which power and trust affect the supplier's allocation of tangible resources is expected to be different than the effect of power and trust on the supplier's allocation of intangible resources (Chen, 1995; Ireland & Webb, 2007). Therefore, this study differentiates between two important supplier resources. In particular, we link power and trust to the supplier's allocation of (1) physical (tangible) and (2) innovation (intangible) resources (i.e., the extent to which the supplier allocates to the particular buyer better resources than to the buyer's competitors). These resources are crucial to a firm's competitive advantage in virtually all industries (Ellram et al., 2013), but are relatively

underexplored in the current SCM literature and practice (Schoenherr et al., 2012). In addition, because a firm can simultaneously use power and trust, we hypothesize on the effects of power on trust (H5–H6).

The usability of power could greatly depend on whether or not the threat of sanctions and promise of rewards, or benefits, which are implied are realistic and have a good chance for being acknowledged by the supplier (Bachmann, 2001). For instance, if a buying firm accounts for a large share in the supplier's turnover, it can be expected to benefit more from using power. In addition, buyers with a small share in the supplier's turnover might have to find other ways to influence the supplier (Ramsay & Wagner, 2009). Therefore, buyers with only a relatively small share in turnover might benefit more from building trust. To further examine this, we include hypotheses (H7a–H10b), which posit how the effects of power and trust might differ for suppliers for which the buying firm accounts for only a small fraction of the turnover compared to suppliers for which the buyer has a large share in turnover.

The Effect of Power on Supplier Resource Allocation

The aim of buying firms that use coercive power is to pressure a supplier into complying with their requirements. However, many studies mainly point to the negative effects of coercive power (e.g., Brown, Lusch & Nicholson, 1995; Maloni & Benton, 2000). This is mainly explained from a perspective that coercive tactics will extract unfair concessions, which leads to a situation where the victims seek ways to resist (Kumar, 1996). Yet, there are many examples from practice in which coercive tactics seem to have a positive effect for the buying firm. Large retailers apply coercive power to influence their suppliers into lowering delivery times or carrying extra inventory (Bloom & Perry, 2001). Within the context of SET, selective punishment can improve the benefits attained from a relation because it may enable an actor to alter its behavior to avoid punishment (Molm, 1994). Indeed, Yeung, Selen, Zhang and Huo (2009) explain how coercive power can positively relate to shared production capacity and shared inventories in Chinese manufacturing firms. Zhao et al. (2008) found that coercive power positively relates to instrumental relationship commitment (i.e., commitment based on the calculation of benefits and costs). Based on either explicit or nonexplicit calculations of benefits and costs, a supplier might be more inclined to allocate its scarce materials to a partner who threatens to reduce business volumes if the supplier does not comply with its wishes. Consequently, rivals that do not apply coercive power in similar situations are not allocated

these resources. Thus, we expect coercive power to positively relate to supplier allocation of physical resources.

The resources characterized by Foa and Foa (1980) have distinct properties that relate to the effectiveness of relational mechanisms. Tangible resources are typically exchanged in impersonal settings, while intangible resources typically involve more interpersonal exchanges (Chen, 1995). Therefore, the effect of coercive power may reverse if the buying firm aims for intangible resources such as innovation resources. In that sense, coercive tactics contradict the interpersonal setting that stimulates innovation exchange. In fact, Zhao et al. (2008) found a negative relationship between coercive power and the supplier's willingness to invest relationship resources in a relationship. Similarly, Terpend and Ashenbaum (2012) found that the use of coercive power negatively impacts the buyer's quality and innovation performance. Thus, a buying firm that uses coercive power to acquire innovation resources might find the supplier allocating its best resources to competitors.

H1a: Coercive power is positively related to supplier allocation of physical resources.

H1b: Coercive power is negatively related to supplier allocation of innovation resources.

Reward power relates to the buying firm's ability to provide benefits that are attractive to the supplier. For example, the buyer can increase its business with the supplier. These benefits may reinforce the relationship by enhancing reciprocity. As stipulated in SET, a supplying firm receiving the reward will then feel obligated to perform according to the expectations of the buying firm (Nyaga et al., 2013). Further, in choosing between decisions (e.g., resource allocation decisions), a supplier will choose the actions for which the expected benefits will be greater (Griffith, Harvey & Lusch, 2006). Through similar reasoning, Zhao et al. (2008) found that reward power positively relates to the supplier's commitment based on a calculation of benefits and costs. Therefore, suppliers might be more inclined to allocate physical resources to buying firms that offer them benefits.

Similarly, we expect reward power to positively influence supplier resource allocation. Whereas coercive power can be viewed as a form of opportunism in which the buying firm expects to gain at the expense of the supplying firm, reward power, in contrast, is likely to encourage positive perceptions by the supplier (Nyaga et al., 2013). If a buyer offers benefits to a supplier who shares ideas and new innovations, this supplier can be expected to be more willing to offer future innovations to this firm. Indeed, Nyaga et al. (2013) found that the use of reward power is

positively related to the supply chain partner's collaborative and adaptive behavior. Similarly, the study of Zhao et al. (2008) found reward power to positively relate to the supplier's willingness to invest in relationship resources. Thus, we expect the allocation of both physical and innovation resources to be positively influenced by reward power.

H2a: Reward power is positively related to supplier allocation of physical resources.

H2b: Reward power is positively related to supplier allocation of innovation resources.

The Effects of Trust on Supplier Resource Allocation

Goodwill trust exists when the buyer and supplier understand and do not take undue advantage of each other (Roy et al., 2004). Goodwill trust relates to benevolence in resource allocation between partners (Ridings, Gefen & Arinze, 2002). Trust enables actors to engage in more intense interactions which provide greater benefits to the exchange partners (Homans, 1958). Relating trust to physical resources, Li, Humphreys, Yeung and Edwin Cheng (2007) identify an empirical link between trust in buyer–supplier relationships and reduced product cost and higher quality of products. Similarly, Anderson, Lodish and Weitz (1987) provide an example of how trust can influence retailers and wholesalers to devote more physical resources (e.g., shelf space) to selling their partners' products.

Because goodwill trust between exchange partners cultivates a more intensive cooperation, it allows for riskier behavior such as the exchange of important information (Lambe et al., 2001). Goodwill trust therefore facilitates the sharing of resources that are critical to the generation of innovation (Roy et al., 2004). Similarly, goodwill trust (expressed in the buyer's benevolence) has been linked with more cooperative supplier relationship performance (Johnston et al., 2004) and the supplier's trust in the buying firm is linked to improved buyer performance (Lawson, Tyler & Cousins, 2008) and higher innovation performance (Terpend & Ashenbaum, 2012).

H3a: Goodwill trust is positively related to supplier allocation of physical resources.

H3b: Goodwill trust is positively related to supplier allocation of innovation resources.

Competence trust refers to a firm's expectation of a partner's technical competence or expertise (Mayer et al., 1995). Suppliers can profit from a buyer's competence. For example, in supplier development programs, the buyer helps the supplier to improve its performance (Krause, 1997). These programs have been shown to increase the performance of both the supplier and the buyer in terms of increased product quality and lower costs (Humphreys, Li & Chan, 2004). In this way, competence trust can enhance reciprocity between a buying firm and its suppliers. Acts of competence of the buying firm, and the trust the supplier has that it can benefit from this competence in the future, stimulate the supplier to reciprocate with behavior that benefits the buying firm. Consequently, the supplier is expected to be more inclined to satisfy the needs of competent buyers and allocate resources accordingly.

Roy et al. (2004) explain that in joint innovation programs, a supplier must not only feel confident of the buyer's technical abilities to solve current problems but also must feel confident that the buyer would be able to solve new problems as these emerge. Competence trust in this sense not only relates to intensified interaction from a rational perspective, but also from the reciprocal faith that actors have in one another to complete their tasks within their areas of expertise successfully (Madhavan & Grover, 1998). From a SET perspective, trust in a partner's competences relates to an actor's extrinsic motivations (e.g., information and advice) and intrinsic motivations (e.g., social support) to intensify interactions (Whitener, Brodt, Korsgaard & Jon, 1998). Therefore, in settings where several experts collaborate on innovations, Ridings et al. (2002) explain that it is only natural to converse with others who have the proper knowledge and skills. For instance, participants in virtual communities are more willing to share knowledge with partners when they have trust in each other's competences (Ridings et al., 2002). Similarly, competence trust is expected to positively influence supplier allocation of innovation resources.

H4a: Competence trust is positively related to supplier allocation of physical resources.

H4b: Competence trust is positively related to supplier allocation of innovation resources.

The Effects of Power on Goodwill Trust

As previously discussed, power and trust are both mechanisms to influence the behavior of a supplier. Traditionally, however, power and trust are conceptualized as distinct and opposing alternatives. Yet, the use of power can be intertwined with trust. Therefore, treating power and trust as distinct rather than interdependent variables can be potentially misleading (Knights, Noble, Vurdubakis & Willmott, 2001); especially in long-term relationships, actors may rely on

both power and trust, and examples of this are inter-personal relations such as parent–child or employer–employee relationships (Cook, 2005). This means that even though specific relationships are predominantly based on either power or trust, the use of one of them does not exclude the use of the other (Bachmann, 2001). Arguably, the extent to which a buying firm exerts power will have an impact on the extent the supplying firm trusts this buying firm. Specifically, we expect the use of power to influence goodwill trust, because goodwill trust refers to a supplier's trusts in a buying firm's behavior. Therefore, we hypothesize on the effect of coercive power and reward power on goodwill trust.

Goodwill trust of a supplying firm refers to the firm's faith in the good intentions of the buying firm (Das & Teng, 2001). This trust emerges from repeated interactions in which the relationship between partners grows (Blau, 1964). Goodwill trust is built mostly through a reciprocal process, in which partners receive benefits and pay back the favor in the future (Das & Teng, 2002). The buying firm's threats of penalties which are exhibited by the use of coercive power can oppose this reciprocal process that creates goodwill trust (Zhao et al., 2008). It can therefore be expected that coercive power will ultimately undermine the goodwill trust in a relationship (Ireland & Webb, 2007). Indeed, Kumar (1996) provides several examples of how coercive tactics can backfire and lead to resistance at partner firms. Exerting reward power, on the other hand, can feed the reciprocal process. An example is an employer–employee relationship, in which the wages that are paid at the end of the month reward the employee and, at the same time, create trust in the reliability and intentions of the established practices of the employer (Knights et al., 2001). Thus, we expect coercive power to negatively affect goodwill trust and reward power to positively affect goodwill trust.

H5: Coercive power is negatively related to good-will trust.

H6: Reward power is positively related to goodwill trust.

The Effects of Power and Trust of Buyers With a Large/Small Share in Supplier Turnover

As explained above, buying firms use power to influence the supplier by either threatening with sanctions or by promising some sort of benefit. Brennan and Turnbull (1999) explain that the presumed causal mechanism linking supplier actions to power is based upon the dependence of the supplier on the buying firm. SET suggests that dependence inequity can be exploited by the stronger actor to control the weaker

party—even though unilateral dependence does not *necessarily* result in the use of power (Blau, 1964; Lambe et al., 2001; Nyaga et al., 2013). Brennan and Turnbull (1999, p. 489) state, "Underlying this process is the knowledge that 'you need us more than we need you,' and the threat (usually implicit, sometimes explicit) that 'if you don't do what we want, then we will take our business elsewhere.'" However, when the buying firm cannot enforce this, the supplier might simply not adjust its behavior to the buyer's wishes. For example, in the study of Ellegaard and Koch (2012), it was observed how an unmet promise of improved profitability by a buyer negatively affected supplier resource allocation.

When a buying firm accounts for a large share in the supplier's turnover, the supplier can be expected to be more inclined to comply to the buyer's wishes. For example, even though Walmart might sometimes squeeze its suppliers, suppliers might still be willing to make concessions in the hope that the Walmart relationship will help them expand their market share (Bloom & Perry, 2001). Therefore, if the buyer has a large share in the supplier's turnover, we expect that the buying firm will be able to more effectively apply the different dimensions of power.

H7a: The positive effect of coercive power on supplier allocation of physical resources will be stronger for buyers that account for a large share in the supplier's turnover.

H7b: The negative effect of coercive power on supplier allocation of innovation resources will be weaker for buyers that account for a large share in the supplier's turnover.

H8a: The effect of reward power on supplier allocation of physical resources will be stronger for buyers that account for a large share in the supplier's turnover.

H8b: The effect of reward power on supplier allocation of innovation resources will be stronger for buyers that account for a large share in the supplier's turnover.

When trust is low, partner firms are more likely to base decisions on a calculation of immediate benefits versus costs (Geyskens, Steenkamp, Scheer & Kumar, 1996). Evidently, buying firms that only account for a small fraction of the supplier's turnover would then have a disadvantage over competitors with a relatively large share. However, firms can obtain better resources from suppliers despite a weaker position (in terms of purchasing volumes) than competitors (e.g., Dyer & Hatch, 2006; Ellis, Henke Jr & Kull, 2012). Building

on interviews with small firm managers, Ellegaard (2006) explains that small buying firms tend to rely on close relationships built on trust to secure their supply of resources. By building such relationships based on trust, buyers might influence the supplier despite their relatively small share in turnover. In relationships where trust is a central element, partners resist short-term gains in favor of expected long-term benefits and build a relationship based on positive expectations (Morgan & Hunt, 1994). Geyskens et al. (1996) explain that trust has a strong effect on an actor's willingness to continue a relationship because it likes the partner and enjoys collaborating with this partner. This effect might be particularly strong for buyers that only account for a small share in turnover, because the more an actor trusts its partner, the less it is inclined to make decisions based on mere calculative grounds (Gounaris, 2005).

As stipulated in SET, interactions between partners are based on the expectation of giving and receiving relational benefits (Blau, 1964; Nyaga et al., 2013). Whitener et al. (1998) argue that such benefits often have intrinsic value (e.g., expressions of support and friendship). Direct economic benefits are less relevant in relationships with a buying firm that only accounts for a small proportion in the supplier's turnover. Therefore, the relative importance of mechanisms that relate to the supplier's intrinsic value can be expected to be more effective for buying firms that account for a small share in the supplier's turnover than for buying firms that account for a large share in the supplier's turnover. For instance, Andaleeb (1996) found that commitment in buyer–supplier dyads was significantly greater in high-trust low-dependence exchange relations than in low-trust high-dependence relations. Therefore, if the buyer has only a small share in the supplier's turnover, we expect a stronger effect of the trust dimensions.

H9a: The effect of goodwill trust on supplier allocation of physical resources will be stronger for buyers that account for a small share in the supplier's turnover.

H9b: The effect of goodwill trust on supplier allocation of innovation resources will be stronger for buyers that account for a small share in the supplier's turnover.

H10a: The effect of competence trust on supplier allocation of physical resources will be stronger for buyers that account for a small share in the supplier's turnover.

H10b: The effect of competence trust on supplier allocation of innovation resources will be stronger for buyers that account for a small share in the supplier's turnover.

METHODOLOGY

Sample and Data Collection

This study's data were collected in collaboration with a large Dutch multinational in the retailing industry. The retailing industry is particularly interesting because, due to fierce competition, retailers increasingly look for supplier resources that can help them to attain superior value and competitive advantages (Ganesan, George, Jap, Palmatier & Weitz, 2009). Because of the high similarity of our research aims and the challenges this retailer faces in forming its SCM strategy, the retailer supported the data collection by distributing a link to our questionnaire among its suppliers.

In March 2013, an e-mail was sent to a sample of 620 suppliers chosen randomly from the retailer's database. In this e-mail, the retailer invited the sales representative of the supplier to participate in an online survey hosted by the authors' university. The survey was pretested by two colleague researchers and by four sourcing managers of the retailer. To prevent social desirability bias, we asked the respondents to fill out the survey focusing on a customer they could choose randomly, as long as the respondent had a good understanding of the relationship between their firm and this retailer (independent of the level of satisfaction with this retailer). Thus, our sample consists of respondents that assess their firm's relationship with a random customer (not specifically the multinational retailer that distributed the invitation) of which they have a good understanding. Potential respondents were informed that the survey could not be traced back to the individual respondents and that only aggregate results would be presented to the retailer. We explained to the respondents that there were no "good" or "bad" answers and asked them to choose the answers that best fitted their firm's situation. The respondents were motivated to answer the survey by promising a summary report. The online survey was accessed 378 times. After discarding the responses with missing values and the responses with an indicated share of the customer's turnover of zero, 185 useable surveys remained without missing values on this study's key variables. Therefore, the final sample size of this study was 185, which represents a response rate of 29.8 percent.

In this final sample, the majority of the respondents' firms are located in the Netherlands. Comparative *t*-tests did not reveal any significant differences between respondents from the Netherlands and respondents from other countries among the variables

of interest. To verify the appropriateness of the respondents, questionnaire items asked about their tenure and expertise (Schilke, 2014). With an average of 10.5 years, 72.1 percent of the respondents in the final dataset had been with their current firm for 5 years or longer. In addition, we assessed participants' self-reported knowledge of the relationship with the chosen customer. We asked the respondent to assess the statement "I know the relationship with this customer very well" on a five-point Likert scale ranging from 1 ("no, strongly disagree") to 5 ("yes, strongly agree"). The mean of 4.04 (standard deviation = .78) suggested that the respondents were well informed. Table 1 shows the demographic profiles of the respondents.

Because nonresponse bias is a general concern for survey studies, we tested for nonresponse bias based on the assumption that the responses of late responders represented the responses of nonresponders (Armstrong & Overton, 1977). All of this study's 185 responses used in our analysis were received within 15 days of the survey's deployment. Similar to Hong and Hartley (2011), we compared early respondents (53 responses received within 2 days) and late respondents (25 responses in the last 4 days). The results of these *t*-tests did not yield significant differences between early responders and late responders (at *p* < .10). In addition, we compared our final sample to 28 respondents that did not finish the questionnaire, but did assess the measures for this study's dependent variables. The *t*-tests did not yield significant differences between our final sample and the 28 nonfinishers. Some nonrespondents explained their reasons for nonresponse via e-mails and phone calls to the multinational retailer. These reasons were mainly lack of time and problems with opening the link to the survey. Based on the insignificant differences between early respondents and late respondents, our final sample and nonfinishers, and the e-mails we received from nonrespondents, nonresponse bias is unlikely to pose a serious threat in our study.

Measures

Table 2 lists this study's measures. We measured our constructs on a five-point Likert scale ranging from 1 ("no, strongly disagree") to 5 ("yes, strongly agree"). The power and trust measures were mainly based on previously employed scales. *Coercive power* and *reward*

TABLE 1

Profile of the Sample

	Frequency			Frequency
Retailing sector				
Ambient	16.8%		Nonfood	7.0%
Beauty	1.6%		Not for resale	8.1%
Bread	1.6%		Snacks	9.2%
Dairy	8.6%		Vegetables and fruits	3.8%
Frozen	7.0%		Other (oils, petfood, software)	29.2%
Health	2.2%			
Juices	.5%			
Meat	3.2%		Unknown	1.1%
Country				
Belgium	8.6%		The Netherlands	62.2%
Czech Republic	1.6%		Spain	1.6%
Denmark	2.7%		Sweden	2.2%
France	2.2%		Switzerland	1.1%
Germany	4.9%		U.K.	1.6%
Greece	.5%			
Hungary	1.1%			
Italy	4.3%		Unknown	4.9%
Annual turnover (€)			*Respondent function*	
0–50 Million	43.8%		Executive	39.5%
51–100 Million	16.2%		Strategic	31.4%
101–500 Million	22.7%		Tactical	13.5%
>500 Million	7.0%		Operational	14.6%
Unknown	10.3%		Unknown	1.1%

n = 185.

TABLE 2

Measurement Items

Constructs	Measurement Items	Factor Loadings
Coercive power (Maloni & Benton, 2000; Terpend & Ashenbaum, 2012) (Cronbach's alpha = .83; composite reliability = .83; average variance extracted = .55)	This customer makes it clear that failing to comply with their requests will result in penalties against us.	.64
	If we do not agree with this customer's suggestions, they could make things difficult for us.	.78
	If we do not do as asked, we will not receive very good treatment from this customer.	.80
	If we do not go along with this customer, they might withdraw certain services we need.	.76
Reward power (Maloni & Benton, 2000; Terpend & Ashenbaum, 2012) (Cronbach's alpha = .82; composite reliability = .80; average variance extracted = .49)	This customer offers rewards so that we will go along with their wishes.	.67
	We feel that by going along with this customer, we will be favored on other occasions.	.74
	If we do not do as asked, we will not receive the rewards offered by this customer.	.70
	This customer offers us rewards if we agree with their requests.	.69
Goodwill trust (Sako & Helper, 1998; Miyamoto & Rexha, 2004; also based on: Roy et al., 2004; Ireland & Webb, 2007) (Cronbach's alpha = .86; composite reliability = .86; average variance extracted = .61)	We can rely on this customer to help us in ways not required by our agreement with them.	.79
	We can depend on this customer to always treat us fairly.	.78
	This customer takes initiatives for mutual benefits that exceed the contractual agreements.	.81
	We believe that this customer would make sacrifices for us to support our firm.	.75
Competence trust (Sako & Helper, 1998; Miyamoto & Rexha, 2004; also based on: Roy et al., 2004; Ireland & Webb, 2007) (Cronbach's alpha = .84; composite reliability = .85; average variance extracted = .65)	We feel that this customer is a highly capable partner.	.85
	This customer is very capable of providing value to our firm.	.80
	We trust that this customer has the managerial and technical capabilities to do what it says it will do.	.75
	The advice this customer gives us is not always helpful.	Removed
Physical resources (based on: Hunt & Davis, 2008; Newbert, 2008; Surroca et al., 2010) (Cronbach's alpha = .92; composite reliability = .91; average variance extracted = .72)	Compared to our other customers...	
	... we grant this customer better utilization of our production facilities.	.75
	... we choose to give this customer priority in the allocation of our products in the case of extreme events (e.g., natural disasters).	.92
	... we allocate our scarce materials to this customer in case of capacity bottlenecks.	.92
	... we dedicate more specialized equipment to the relationship with this customer.	.78
Innovation resources (based on: Hunt & Davis, 2008; Newbert, 2008; Surroca et al., 2010)	Compared to our other customers...	
	... we are more willing to share key technological information with this customer.	.73
	... we share our best ideas with this customer first.	.87

	TABLE 2 (continued)	
Constructs	Measurement Items	Factor Loadings
(Cronbach's alpha = .88; composite reliability = .88; average variance extracted = .65)	. . . we dedicate more innovation resources to the relationship with this customer.	.87
	. . . we spend more of our product development time on projects of this customer.	.75

power were measured based on scales of Terpend and Ashenbaum (2012) and Maloni and Benton (2000). The survey items of the coercive power construct measured the extent to which the buying firm punishes the respondent's firm if their firm does not conform to the buyer's influence attempt. The construct items of reward power emphasized the extent to which the buying firm aims to influence the respondent's firm by offering benefits.

Goodwill trust and *competence trust* were measured with items based on the studies of Sako and Helper (1998), Miyamoto and Rexha (2004) and on the conceptual works of Ireland and Webb (2007) and Roy et al. (2004). For goodwill trust, the respondents were asked to assess the extent to which they could rely on the buying firm to treat them fairly and to take initiatives that exceed the contractual agreement. Competence trust was measured with items that reflect trust of the respondent in the buying firm's capabilities and the extent to which the buyer's advice is helpful for them.

This study's dependent variables, *supplier allocation of physical resources* and *supplier allocation of innovation resources*, measured the extent to which the supplier allocates to the particular buyer better resources than to the buyer's competitors. Above we provided examples of these resources (e.g., scarce materials in times of capacity bottlenecks or the first offer of a new technology). To further operationalize these constructs, we developed items based on the resource-based studies of Newbert (2008), Hunt and Davis (2008), and Surroca, Tribó and Waddock (2010). We asked the respondents to assess their firm's resource allocation to the particular retailing firm *relative* to the resource allocation to this retailer's competitors. Items pertaining to physical resources capture both facility and equipment utilization as well as product and materials fulfillment because both relate to a firm's strategic physical resource bundle (Ellram et al., 2013; Hunt & Davis, 2008). An example of an item for innovation resources is "compared to our other customers, we are more willing to share key technological information with this customer."

Finally, we measured the *customer's share in the supplier's turnover* by asking the respondents to indicate the percentage of the customer's share in their firm's turnover.

Data Validity and Common Method Bias

Several tests were conducted to assess the measurement instrument in terms of reliability and validity. We first assessed the measurement model by conducting a confirmatory factor analysis using AMOS 21.0. The overall measurement model fits the data satisfactorily (χ^2 = 344.97, d.f. = 213, χ^2/d.f. = 1.62, comparative fit index [CFI] = .95, Tucker–Lewis index [TLI] = .94, goodness-of-fit index [GFI] = .87, root mean square error of approximation [RMSEA] = .06). To test the convergent validity of the reflective constructs, we examined the average variance extracted. As shown Table 2, all but one construct exceeded the .50 cutoff (Fornell & Larcker, 1981). The Cronbach alpha values ranged between .82 and .92. These values well exceed the recommended threshold of .7 (Nunnally, 1978), which indicates satisfactory levels for internal consistency reliability. The composite reliability values ranged between .80 and .91, well exceeding the recommended threshold of .7 (Fornell & Larcker, 1981). In addition, the square roots of the AVE values were greater than their correlation coefficients with the other constructs (Table 3). Therefore, the constructs fulfill the requirement for discriminant validity. Finally, because the responses were collected from single key informants, Harman's single-factor test was employed to determine whether common method bias could potentially threaten the validity of the results (Podsakoff & Organ, 1986). The un-rotated factor solution indicated that the explained variance of the largest factor was only 30.7 percent, which suggests that common method bias is not likely to be a threat to the validity of our results.

Data Analysis

We tested the proposed hypotheses using structural equation modeling with maximum-likelihood estimation. Tests of normality revealed that not all of this study's constructs are normally distributed. More specifically, in particular, the items belonging to innovation resources appeared to be non-normal.

TABLE 3

Means, Standard Deviations, and Correlations of the Constructs

		M	SD	1	2	3	4	5	6
1	Physical resources	3.37	1.03	—					
2	Innovation resources	3.75	.94	.67	**.80**				
3	Coercive power	3.09	.84	.23	.12	**.74**			
4	Reward power	2.79	.84	.36	.39	.45	**.70**		
5	Goodwill trust	3.23	.83	.30	.29	−.18	.24	**.78**	
6	Competence trust	3.83	.64	.24	.25	−.12	.06	.45	**.81**

M, mean; SD, standard deviation.
Bold elements on the diagonal represent the square roots of the AVE. Off-diagonal elements are correlations between the constructs.

Although maximum-likelihood estimation is relatively robust to non-normality, the standard error tends to be underestimated in the absence of the normality assumption (Kline, 2010). Still, maximum likelihood may be used for models with variables that are not normally distributed, given that this non-normality is not too extreme (Schermelleh-Engel, Moosbrugger & Müller, 2003). To assure the robustness of our results, we conducted additional analyses using partial least-squares structural equation modeling (PLS). PLS is a regression-based approach to structural equation modeling, and this technique does not require variables to be normally distributed (Reinartz, Haenlein & Henseler, 2009). Therefore, as suggested by Peng and Lai (2012), we use PLS as a robustness check of our maximum-likelihood estimations.

We utilized the full-sample data to test H1a–H6. To test H7a–H10b, we split the sample into two groups composed of data partitioned into low shares in turnover and high shares in turnover. This approach enabled the examination of the hypothesized disparate effects of power and trust for different shares in the supplier's turnover by comparing two structural models (one for the low share group and one for the high share group). Yet, compared to structural models with moderator variables, such a multigroup approach does not incorporate the direct effect of the supplier's share in turnover on the resource allocation variables. Hence, we evaluated the validity of the results from the multigroup analyses by testing a structural model with both the moderation terms and the direct effects of share in turnover. Because the interaction among latent variables cannot be incorporated in structural equation modeling approaches that rely on maximum-likelihood estimation (Jöreskog & Yang, 1996), we employed PLS modeling to conduct this interaction analysis. PLS is specifically suitable for estimating moderating effects (Chin, Marcolin & Newsted, 1996), and complexity (i.e., which plays a role in models with many interaction terms as in this robustness

check) does not pose a severe restriction to the estimation of path coefficients (Wetzels, Odekerken-Schröder & van Oppen, 2009).
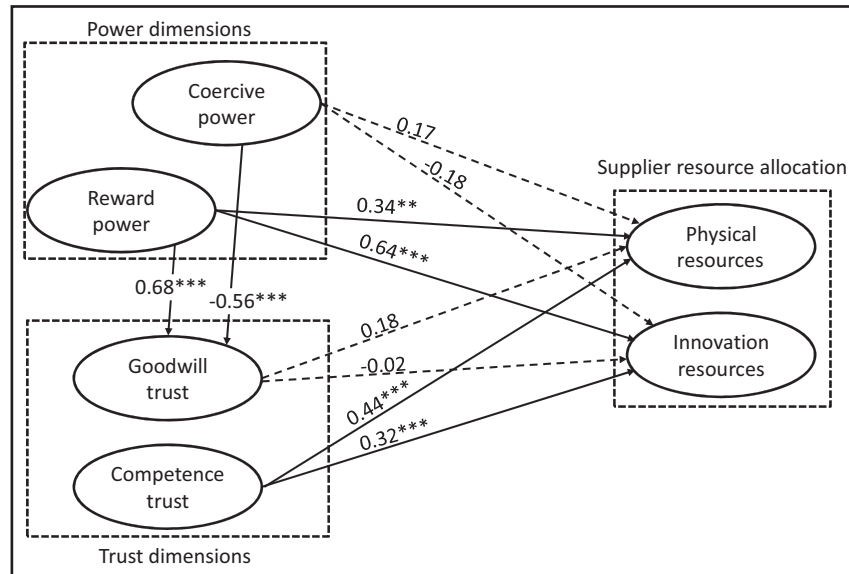
RESULTS

This study used AMOS 21.0 to test the proposed model. SmartPLS 2.0 (Ringle, Wende & Will, 2005) was used to obtain the PLS estimates for the robustness check and interaction effects. We first tested the effects of the power and trust dimensions on supplier resource allocation (i.e., H1a–H4b) and the effects of the power dimensions on goodwill trust (i.e., H5–H6). Then, we tested how the effects of power and trust differed for groups of buyers with a small or large share in the supplier's turnover (i.e., H7a–H10b).

Structural Model

As Figure 1 shows, coercive power is positively related to supplier allocation of physical resources (β = .17, nonsignificant (NS)), but negatively related to supplier allocation of innovation resources (β = −.18, NS). Although these effects are as hypothesized, H1a and H1b are not supported because these effects are nonsignificant. Both H2a and H2b are supported as reward power has a significant and positive effect on both physical resources (β = .34, p < .05) and innovation resources (β = .64, p < .01).

The effect of goodwill trust was found to be nonsignificant for physical resources (β = .18, NS) and innovation resources (β = −.02, NS). Thus, both H3a and H3b are rejected. H4a and H4b are supported because competence trust has a significant and positive effect on both physical resources (β = .44, p < .01) and innovation resources (β = .32, p < .01). The effects of both coercive power and reward power on goodwill trust were found to be significant and in the hypothesized direction (β = −.56, p < .01 and β = .68, p < .01, respectively). Thus, H5 and H6 are supported.

FIGURE 1
Results of Structural Equation Model

*p < .10, **p < .05, ***p < .01, dashed paths indicate nonsignificant results. Model fit: χ^2 = 387.63, df = 216, χ^2/df = 1.80, CFI = .93, TLI = .92, GFI = .85, RMSEA = .07.

The structural model accounted for 27 percent of the variance in physical resources, 30 percent of the variance in innovation resources, and 30 percent of the variance in goodwill trust (i.e., R^2 = .27, .30 and 30, respectively). Overall, the goodness-of-fit measures showed satisfactory values (χ^2 = 387.63, d.f. = 216, χ^2/d.f. = 1.80, CFI = .93, TLI = .92, GFI = .85, RMSEA = .07).

The robustness of these results was tested by conducting an additional PLS analysis. The PLS estimates did not show any substantial differences. The path coefficients, the p-values, and the R^2-values were of comparable size and lead to similar conclusions. We can therefore conclude that the results obtained by using maximum-likelihood estimation are robust.

Multigroup Analysis

To test the effect of the buyer's share in the supplier's turnover, we divided the sample into two subsamples along the median of the share in turnover. This resulted in two groups: the "small share group," the group of respondents for which the buying firm accounted for only a small share in turnover (n = 95, average share in turnover: 3.37 percent), and the "large share group," the group of respondents for which the buying firm accounted for a large share in turnover (n = 90, average share in turnover: 23.92 percent). These samples can be considered relatively small. Based on Monte Carlo simulations, Qureshi and Compeau (2009) explain that the effective sample

size to accurately examine between-group differences is contingent on several conditions. Yet, potential lack of power does not affect cases in which multigroup comparisons observe significant differences. In such cases, it can be concluded that between-group differences are, in fact, true (Qureshi & Compeau, 2009). To test H7a–H10b, we followed a three-step procedure. First, to assure that potential differences between the groups are not caused by differences in the measurement instrument, we assessed the measurement invariance between the groups. Second, we examined whether the small share and large share group yielded different results in terms of path coefficients ($\Delta\beta$) between the power and trust dimensions and the resource allocation variables. Third, we determined the significance of any potential differences by means of the chi-square differences ($\Delta\chi^2$) between the structural models of the two groups.

The first step was to test the scale equivalence between the small share and the large share group. In the absence of scale equivalence, the comparison of structural models is ambiguous because the effects of between-group differences can be confounded by differences in the scale (Cheung & Rensvold, 2002). We assessed partial measurement invariance (Byrne, Shavelson & Muthén, 1989) which tests for measurement invariance by equating the factor loadings in the two subgroups, but allows for some loadings to be different across groups (Byrne, 2009; Chun & Davies, 2006). One item in the innovation resource construct

and one item in the reward power construct differed significantly between the groups. Relaxing these two factor loadings and assessing the partial measurement invariance, we found that the difference in the chi-square statistic was insignificant ($\Delta\chi^2[15] = 21.69$, NS). Therefore, partial measurement invariance had been achieved across samples. In addition, the fit index change (ΔCFI = .003) was less than the .01 cut-off point proposed by Cheung and Rensvold (2002), indicating support for invariance between the small share and large share group.

As shown in Figure 2, the share in the supplier's turnover affects the relationship between the power dimensions and supplier resource allocation differently than the relationship between the trust dimensions and supplier resource allocation. When assessing coercive and reward power, the differences in path coefficients between the small share and large share group show that the effect of coercive power on physical resources is significant in the large share group (i.e., we find support for H1a in the large share group). Yet, although the path coefficients linking coercive and reward power to physical resources are larger in the large share group, the coefficients relating the power dimensions and innovation resources are smaller in the large share group. Thus, as shown in Figure 2, the effects of the power dimensions are not (as we hypothesized) substantially stronger for buyers that account for a large share in the supplier's turnover.

Contrary to the power dimensions, the multigroup analysis does show substantial differences when looking at the trust dimensions. Goodwill trust did not show a significant effect on supplier resource allocation in the full-sample analysis. However, the multigroup analysis shows that goodwill trust does affect supplier resource allocation when the buyer has a large share in the supplier's turnover. Thus, whereas we rejected the hypothesis that goodwill trust would positively affect supplier resource allocation (H3a and H3b) in the assessment of the full sample, the multi-group analysis shows that goodwill trust does have a positive and significant effect but only in the large share group. On the other hand, competence trust showed a positive and significant effect in the full sample (H4a and H4b), but the multigroup analysis shows that this effect mainly occurs in the small share group. Thus, as hypothesized, the path coefficients of competence trust are significant and high in the small share group, but insignificant and lower in the high share group. The model of the small share group accounted for 29 percent of the variance in physical resources and 35 percent of the variance in innovation resources (i.e., $R^2 = .29$ and .35, respectively). The model of the large share group accounted for 45 percent of the variance in physical resources and 25 percent of the variance in innovation resources (i.e., $R^2 = .40$ and .25, respectively). Again, we tested the robustness of these results by conducting additional PLS analysis. The path coefficients, the group differences between the paths, the *p*-values, and the R^2-values were of comparable size. Therefore, the results obtained by using maximum-likelihood estimation are also robust in the multigroup analysis.

We determined the significance of these differences in path coefficients between the small share and large

FIGURE 2
Multigroup Comparison
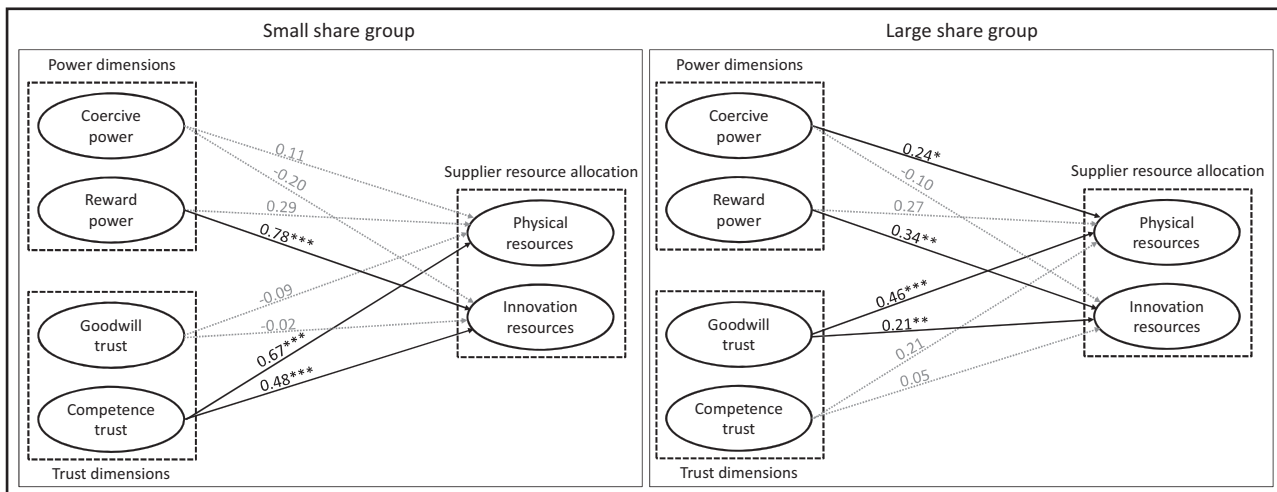
* $p < .10$, ** $p < .05$, *** $p < .01$, dashed paths indicate nonsignificant results.

share group by means of the chi-square differences of the structural models (Byrne, 2009). Given the small differences in path coefficients of the coercive power dimension, it is not surprising that these differences were insignificant ($\Delta\chi^2 = .27$, NS for physical resources; $\Delta\chi^2 = .14$, NS for innovation resources). Thus, H7a and H7b are rejected. Similarly, the between-group differences for reward power were not large enough to yield significant values ($\Delta\chi^2 = .01$, NS for physical resources; $\Delta\chi^2 = 2.37$, NS for innovation resources). Consequently, H8a and H8b are rejected. Contrary to our predictions in H9a and H9b, goodwill trust showed higher path coefficients for the large share group. The effect of goodwill trust on supplier resource in the large share group showed to be significantly higher for physical resources ($\Delta\chi^2 = 5.42$, $p < .05$) and substantially higher (although not significantly) for innovation resources ($\Delta\chi^2 = 1.12$, NS). Thus, H9a and H9b are rejected because the multigroup analysis showed results that opposed these hypotheses. Finally, the path coefficients between competence trust and physical resources and innovation resources were found to be significantly higher for the small share group ($\Delta\chi^2 = 2.96$, $p < .10$ for physical resources; $\Delta\chi^2 = 3.61$, $p < .10$ for innovation resources). Therefore, both H10a and H10b are supported.

As a final step in our analysis, we also conducted PLS structural equation modeling in which we included the interaction terms of share in turnover and the power and trust dimensions. Because the share in turnover variable was extremely right skewed, we conducted a logarithmic transformation on this variable. Then, we included share in turnover in the PLS model to build the interaction terms. The results of this PLS model lent further support for our hypotheses as they show highly comparable results that did not change our conclusions. With the exception of the moderating effect of share in turnover on coercive power on innovation resources (which showed a negative interaction effect of negligible size), all interaction terms showed path coefficients in similar directions as suggested by the multigroup comparison.

CONCLUSIONS AND DISCUSSION

A key challenge is to identify those practices that leverage the supply chain for resources that help firms to achieve competitive advantage (Schoenherr et al., 2012). This study aimed to identify such practices by examining the impact of the different dimensions of power and trust on supplier resource allocation relative to competitors. We found that coercive power does not significantly affect supplier resource allocation. However, coercive power did have a significant effect on physical resources for buyers accounting for a large share in the supplier's turnover. Reward power was found to positively relate to supplier allocation of physical and innovation resources. The effect of reward power on supplier resource allocation did not significantly differ between the small share and large share group. Goodwill trust was found to have no significant effect on supplier resource allocation in the full sample. However, the multigroup analysis revealed that goodwill trust does have a significant effect on physical resources and innovation resources when the buyer accounts for a large share in the supplier's turnover. Competence trust was found to positively relate to supplier allocation of physical and innovation resources. The multigroup analysis showed that the effects of competence trust on supplier resource allocation are significantly higher for firms that account for only a small share in the supplier's turnover. These findings contribute to the literature that includes both power and trust as antecedents of firm behavior. By combining the different dimensions of both power and trust in one empirical model, by examining the link between the power dimensions and goodwill trust, and by examining the effect of the buying firm's share in the supplier's turnover, our analyses yield several interesting findings. More specifically, there are three key findings that we highlight.

First, this study combines the different dimensions of both power and trust in one empirical model. This yielded highly interesting results. For instance, even though trust is typically portrayed as a crucial element for buyer–supplier relationships (Ireland & Webb, 2007; Morgan & Hunt, 1994), our full-sample analysis showed no significant effects of goodwill trust on supplier resource allocation. In addition, many studies mainly point to the negative effects of coercive power (e.g., Brown et al., 1995; Maloni & Benton, 2000). However, our results indicate that coercive tactics can be effective practices when firms aim for better physical supplier resources and account for a large share in the supplier's turnover.

Second, based on the general notion that in the case of buyer dominance buying firms should exploit this dominance by using power strategies (e.g., Caniëls & Gelderman, 2005), we expected power dimensions to be more effective for buyers accounting for a large share in the supplier's turnover. Surprisingly, the multigroup analysis yielded different results. The trust dimensions showed the most substantial differences between the small share and large share groups. Apparently, even though buyer dominance is assumed to form the basis for the buyer to leverage the supplier's performance (Cox, 2001), our results imply that the dependence of a supplier on the buying firm in terms of share in turnover does not affect the effectiveness of the power dimensions as much as it affects the trust dimensions.

Third, although we hypothesized that the effects of goodwill trust on supplier allocation of physical resources and innovation resources would be stronger for buyers that account for a *small* share in the supplier's turnover, goodwill trust actually appeared to have a stronger effect for buying firms that accounted for a *large* share in the supplier's turnover. Thus, we could not find evidence for the popular belief that when buyers do not have the purchasing volumes to influence suppliers, they should "befriend" the supplier to obtain better resources (e.g., Ellegaard, 2006, p. 280). This might also explain why the full-sample analysis revealed no significant effect of goodwill trust. The observation that goodwill trust only affects supplier resource allocation positively when the buyer has a large share in the supplier's turnover may be explained by the work of Das and Teng (2001). They link the need for goodwill trust to the perceived risk in a relationship. A high reliance on the buyer's turnover increases the relational risk for suppliers; the need for suppliers to rely on goodwill trust becomes critical then (Das & Teng, 2001).

By means of these findings, we show that power and trust dimensions can be used by buying firms to influence the resource allocation behavior of supplying firms. As such, we contribute additional insights into the SCM strategies that can improve resource allocation from shared suppliers to the stream of literature examining competition for supplier resources (e.g., Ellegaard & Koch, 2012; Ellram et al., 2013; Hunt & Davis, 2012; Pulles, Veldman & Schiele, 2014). In addition, we believe that our findings provide additional insights of SET's application within SCM. Even though SET is driven by the central concept that behavior of a company and resource exchanges in relational exchanges can be explained by relational mechanisms (Blau, 1964; Thibaut & Kelly, 1959; Zhao et al., 2008), its application within SCM is still limited (Narasimhan et al., 2009) despite several recent contributions (cf., Schiele et al., 2012). This study contributes a new application of SET in the SCM literature by examining the effect of two of its core mechanisms—power and trust—on supplier resource allocation. In addition, the current SET literature provides only limited insights into how different types of resources are exchanged in different types of relationships (Cropanzano & Mitchell, 2005). Thus, we make an empirical contribution to the SET literature by showing the different effects of power and trust on different types of supplier resource allocation.

Managerially, our study provides new insights into the strategic implications of SCM practices. For the multinational retailer that helped in collecting this study's data, the key managerial take-away was the realization that suppliers are shared with competitors and that, to truly gain strategic advantages, SCM practices should aim at increasing the performance of this supplier relative to the performance of this supplier to competitors. The retailer adopted this perspective in its supplier management workbooks and sourcing strategies. For the retailer, for instance, the realization that the reward power (e.g., increased collaboration in product development, offering long-term contracts) can be used as an alternative to coercive tactics (e.g., threats of taking business elsewhere, relocating products to less prominent shelf spaces, less attractive payment conditions, not involving the supplier in future business developments) can make the subtle difference in the resource allocation behavior of the supplier. In addition, the process of building trust with suppliers is often painstaking and lengthy (Mol, 2004; Ring & Van de Ven, 1994). Our results showed that buying firms with a relatively small share in turnover would benefit more from building competence trust and buying firms with a relatively large share in turnover would benefit more from building goodwill trust. This understanding may enable firms to better align their efforts to build trust in a relationship with the intended outcomes. Finally, the awareness that coercive tactics could deteriorate—but that reward power could stimulate—the goodwill trust of suppliers can especially help large buying firms in balancing the use of power and trust in their supply chain relationships.

LIMITATIONS AND FUTURE RESEARCH

The findings of this study should be viewed in light of some limitations that suggest the need for caution in drawing conclusions, but also provide opportunities for future research. We based our findings on data from the retailing industry because of the strategic relevance of SCM for this industry. Although focusing on a single industry has its merits, this approach may not be sufficient to fully assess the scope of the results presented here. Also, we did not collect data on the customers that were assessed by the respondents. Consequently, we cannot evaluate how our findings would differ for different relationships (e.g., expressed in relationship strength). Therefore, future research should incorporate a wider range of industries and collect data on the relationship settings to expand the scope of the findings. In addition, the results of this study are based on subjective data that rely on the respondents' perceptions and survey studies could be subject to misinterpretation. Even though our pretests do not reveal any such misinterpretations, future research should address these shortcomings by making use of objective data. Furthermore, our study used suppliers to assess buying firms. Future research may consider examining the buyer's perspective. Such a perspective would enable scholars to investigate the

competitive actions that these firms undertake to attain better resource positions in more detail (cf., Capron & Chatain, 2008). Finally, although our sample size is comparable to other multigroup analyses applied in a supply chain setting (Paiva, Roth & Fensterseifer, 2008) and even though the multigroup analysis enabled us to support or reject our hypotheses, our sample size is rather small for performing multigroup analyses. Thus, the results of our study should be interpreted with a certain degree of caution considering the limitation of sample size.

Factor market rivalry theory describes different types of rivalry between firms that use similar resources (Markman et al., 2009). For example, resource rivalry occurs between direct competitors (e.g., Ford versus General Motors), as well as between firms that are not direct competitors (e.g., Walmart hiring Amazon's key logistic personnel; cf., Ellram et al., 2013). This rivalry for resources with firms that are not direct competitors is an interesting dimension for future research, specifically for firms that outsource globally. In addition, the concepts of resource rivalry in supply markets (Ellram et al., 2013) and preferential supplier resource allocation (Hüttinger et al., 2012) both explain the importance of acquiring better supplier resources than competitors to achieve firm-level competitive advantage. Assuming that resource-oriented SCM strategies should be contingent on the behavior of competitors (Ramsay & Croom, 2008) suggests that firms would need some knowledge of the resource position of their competitors. This opens up to other streams examining the actions and reactions of competing firms. The literature on competitive dynamics theorizes about the competitive behavior of firms and specific competitive actions and reactions (see Chen & Miller, 2012). The themes in this stream can provide a fruitful basis for theorizing about strategic SCM actions. For example, it would be interesting to investigate the use and effect of competitor analysis practices (Chen, 1996) in competitors' resource-oriented SCM strategies or the awareness and capability of firms to react to a competitive action in their supply base (Chen, Su & Tsai, 2007). In addition, behavioral theories of the strategic actions of firms (e.g., Cyert & March, 1963) can explain how firms relate their own actions to the position and (anticipated) actions of competing firms based on such concepts as bounded rationality and organizational aspirations (Greve, 2013). Such theories could provide an interesting framework for shaping a fuller picture of a firm's strategic SCM actions which are contingent on its relative resource position.

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