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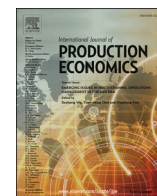
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Navigating the complex landscape of asymmetrical investments and relational dilemmas in buyer-supplier relationships: A dyadic perspective

Antony Paulraj^{a,*}, Byung-Gak Son^b, Nachiappan Subramanian^c

^a NEOMA Business School, Department of Information Systems, Supply Chain & Decision Making, 59 rue Pierre Taittinger, Reims, France

^b Bayes Business School, City St George's, University of London, London, United Kingdom

^c Science Policy Research Unit, University of Sussex Business School, Falmer, Brighton, United Kingdom

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ABSTRACT

The risk of relationship-specific investment (RSI) for investing parties in buyer-supplier relationships is well known, but the impact of RSI asymmetry on them is not well understood. To address this gap, this study examines its impact on relational conflict in buyer-supplier relationships. We also examine whether informal governance mechanisms, such as relative justice and leadership in joint initiatives, mitigate these negative effects. We use matched pair data from 121 buyer-supplier dyads in the Indian automotive industry as well as archival data from various secondary data sources. Our findings suggest a very different picture for the buyer and supplier sides. When the level of the supplier's RSI begins to exceed that of the buyer, the buyer initially tries to exploit its dependency advantage. However, when buyer RSI is higher than supplier RSI, we do not observe an inverted U-shaped effect on supplier conflict. The contingent effects were also significantly different depending on the side of the relationship considered. By taking a dyadic perspective, our paper provides much more nuanced and complex insights into buyer-supplier relationships, particularly RSI.

1. Introduction

Relationship-specific investment (RSI) provides several benefits to both the investing firm and its counterpart. For example, due to its specialized nature, RSI provides significant efficiency benefits to both investing parties and their partners (Heide and John, 1990; Nyaga et al., 2010), and such decisions often lead to positive relationship outcomes, such as social capital (Jap and Ganesan, 2000; Nyaga et al., 2010; Zhao et al., 2008). Moreover, it could also become a source of inimitable competitiveness, as its benefits are tied to specific partners (Cao and Zhang, 2011; Nyaga et al., 2010). For example, Toyota is known for making supplier-specific investments as a main means of supplier development to (1) enable its highly sophisticated Toyota Production System, as well as (2) foster trust with its suppliers (Shih, 2022), which are often considered the main sources of Toyota's firm-specific advantage, such as its innovation performance.

On the other hand, RSI may expose investing firms to exchange hazards such as partner opportunism (Dyer and Singh, 1998; Kang et al., 2009), especially for unilateral (and often unguarded) RSI decisions. From a transaction cost economics (TCE) perspective, RSI represents a form of asset specificity that creates dependence on exchange partners

and thereby exposes investing firms to hold-up risks, resulting in partner opportunism (Williamson, 1985; Achrol and Gundlach, 1999; Hill and Deeds, 1996). A typical example of such opportunism driven by hold-up situations is when a supplier makes significant investments to customize its products for a particular buyer, only for the buyer to take advantage by renegotiating the terms after the investment has been made (Strieborny and Kuenova, 2016). Such opportunistic pursuit of unilateral gains can often lead to relational conflicts (Bai et al., 2016). The recent lawsuits filed against Wayfair by its suppliers, accusing them of opportunistic cost-cutting (Van Zandt, 2023), are a good example.

Despite this risk, firms often make such RSI decisions deliberately and/or sometimes have no choice but to do so (Kang et al., 2009). Then, the key question is how to protect investing parties, and the existing literature has pointed out various forms of informal governance that would protect investing parties from the negative consequences of RSI asymmetry (Hill, 1990; Lumineau and Henderson, 2012; Luo, 2007). However, most of these studies have taken a one-sided view by using data from a single respondent, and their results are subject to a bias that results from measuring the views of multiple stakeholders based on the assessment of either a buyer or a supplier (Roh et al., 2013).

This critical gap should be addressed because the core argument

* Corresponding author.

E-mail addresses: antony.paulraj@neoma-bs.fr (A. Paulraj), b.g.son@city.ac.uk (B.-G. Son), N.Subramanian@sussex.ac.uk (N. Subramanian).

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linking RSI to partner opportunism hinges on the existence of dependence asymmetry. Specifically, the party (whether the buyer or the supplier) investing more in the relationship becomes more dependent on the less investing party, thereby granting the latter a power advantage (Achrol and Gundlach, 1999; Hill and Deeds, 1996). The only way to measure such asymmetry requires obtaining data from both parties involved. A similar concern exists in previous studies that have examined various constructs for informal governance to protect investing parties, such as trust (Korsgaard et al., 2015) and equity (Liu et al., 2012). Indeed, the literature suggests that there is often a significant asymmetry between the perceptions of the firms involved in the partnership (e.g., Liu et al., 2012). Using matched-pair data from 121 manufacturers from the Indian automotive industry, this study attempts to fill this gap by first examining the relationship between RSI asymmetry (RSIA) and relational conflict. Subsequently, it examines the moderating role of relative injustice and leadership in joint improvement initiatives.

This study makes significant contributions to extant literature. First, the main theoretical contribution of this paper is the evaluation of the hypothesized effects from the perspectives of both the buyer and supplier (i.e., a dyadic angle). This unique approach aligns with the suggestions made by scholars about the importance of considering the perspectives of both sides, as the buyer and the supplier have different ambitions and approaches when it comes to their relationship with their exchange partner (Brito and Miguel, 2017; Johnston and Kristal, 2008; Kim et al., 2010; Nyaga et al., 2010). More importantly, this difference is clearly evident in our results, which reveal systematically different role-specific behavioral responses on the buyer and supplier sides under dependence asymmetry; the use of a rigorous dyadic data collection approach has helped us to provide more nuanced insights into the complex relationships between RSIA and relationship conflict. For example, while a unilateral increase in RSI by suppliers could, to some extent, expose them to greater conflict driven by buyer opportunism, such a move by buyers does not appear to expose them to increased risk, reflecting fundamentally different responses to RSIA across the two sides of the dyadic relationship.

Second, our dyadic data also allowed us to examine the impact of two informal governance mechanisms to protect investing parity, namely relative injustice (RIJ) and leadership in joint improvement initiatives (LJI). Departing from prior work that focuses on the level or congruence of governance mechanisms, we explicitly consider their directional asymmetry and contingent, role-specific effects. Again, we found very different results when it comes to these contingent effects. For example, while buyers' LJI protects them from the risk of unilateral RSI, suppliers' leadership does not seem to protect them from such a risk. By demonstrating that the effectiveness of governance mechanisms depends on the direction of RSIA, rather than on misalignment per se, this study extends congruence-based approaches and highlights the importance of directional asymmetry in buyer-supplier relationships. Again, this paper initiates an important discussion in the buyer-supplier literature on the exception fallacy (Roh et al., 2013), as the use of dyadic data, as this paper shows, will provide far more nuanced and complex insights into buyer-supplier relationships.

2. Theoretical backgrounds and hypotheses development

This section provides a review of the literature on relationship-specific investment and its relational consequences, and uses it to develop the study's hypotheses. Please refer to Fig. 1 for a visual representation of the hypothesized model.

2.1. Relationship-specific investment and conflicts

Relationship-specific investments refer to investments that have value primarily within a specific relationship (Brown et al., 2000; Dyer and Singh, 1998; Handley and Benton Jr, 2012; Sambasivan et al., 2013;

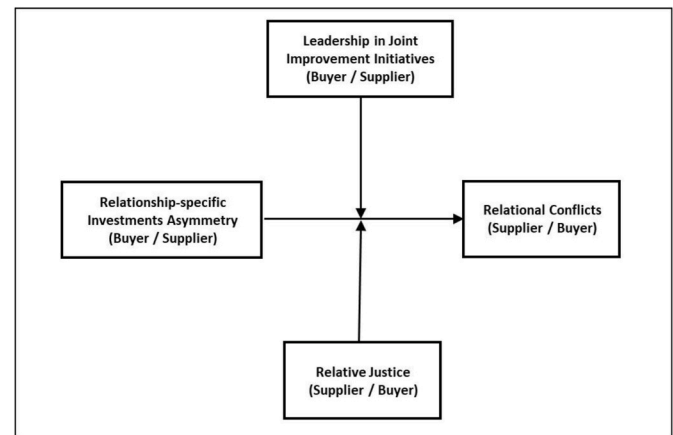


Fig. 1. Hypothesized model.

Wang et al., 2023; Williamson, 1985). RSI is known to provide various performance benefits to the firms involved in the relationship. This is mainly because RSI is specialized to work best in a particular relationship (Heide and John, 1990; Nyaga et al., 2010) and is, therefore, more efficient and effective in generating returns than generalized assets (Brown et al., 2000; Wagner and Bode, 2014). Furthermore, a firm's decision to make such investments signals its commitment to the relationship, potentially leading to favorable relational outcomes such as social capital (Anderson and Weitz, 1992; Jap and Ganesan, 2000; Nurhayati et al., 2023; Nyaga et al., 2010; Zhao et al., 2008). Indeed, the extant literature suggested that RSIs provide various benefits to companies in a buyer-supplier relationship, for example, innovation (Wagner and Bode, 2014), product quality, and inventory performance (Dyer, 1996), knowledge and reputation spillovers (Kang et al., 2009).

RSIs, on the other hand, can expose investing parties to various exchange hazards, especially for the parties that make greater investments than their counterparts (Dyer and Singh, 1998; Huo et al., 2018; Kang et al., 2009; Meena et al., 2023). When a firm makes an RSI, it relies on its counterparts to realize a positive return on investment. This is because the value of this investment is much lower outside the specific relationship (Brown et al., 2000; Dyer and Singh, 1998) and it is often difficult to redeploy it to other relationships (Brown et al., 2000; Zhao et al., 2008). From a TCE perspective, such asset specificity creates hold-up risk, which can in turn generate dependence asymmetry, whereby the party that invested more becomes more dependent on its partner, which either did not invest as much or did not invest at all. Such dependence asymmetry is a primary driver for the manifestation of a dark side in relationships (Achrol and Gundlach, 1999; Caniels and Gelderman, 2007; Hill and Deeds, 1996). The dark side can manifest in different forms, including subtle forms in which an exchange partner fails to commit or withholds resources (Handley and Benton Jr, 2012; Luo, 2007), to more overt forms in which an exchange partner manipulates information or engages in deception (Deeds and Hill, 1999; Luo, 2007).

Asymmetry in dependence potentially leads parties with lower levels of investment to opportunistically exploit this vulnerability of their partners to obtain more favorable exchange terms (Crosno and Dahlstrom, 2008; Handley and Benton Jr, 2012; Wathne and Heide, 2000) with less fear of retaliation and economic harm (Crosno and Dahlstrom, 2008). If investing parties perceive that their counterparts are taking advantage of this vulnerability, it can lead to conflicts in a relationship (Bai et al., 2016; Kale et al., 2000). Conflicts refer to disagreements between exchange partners as a result of the unilateral pursuit of their own interests (Bai et al., 2016; Vos et al., 2021). Failure to manage conflicts in a buyer-supplier relationship has serious negative financial and relational consequences (Bai et al., 2016; Kale et al., 2000). The relationship between RSIA and relational conflicts, however, is not

straightforward. If the RSI gap increases, for example, induced by one party's decision to increase its RSI, it would initially be related to the increase in partner-initiated conflicts. This is because exchange counterparts are often quick to recognize their dependency advantage created by the increase in the gap and may seek to opportunistically exploit it for unilateral gains (Achrol and Gundlach, 1999; Hill and Deeds, 1996; Li et al., 2024; Nyaga et al., 2013). This behavior is likely driven by their perception that the benefits of taking advantage of such situations are greater than the associated costs of such relational conflicts (Bai et al., 2016; Kale et al., 2000).

However, once a certain threshold is reached, a larger unilateral increase in one partner's existing RSI may be perceived by the other partner as a significant positive signal of its commitment to a more mutually beneficial future relationship (Kang et al., 2009; Patrucco et al., 2021; Williamson, 1985), rather than as a temporary opportunity to be taken advantage of. Often, even RSI increases that are not mutual can result in positive relational outcomes, such as social capital (Kang et al., 2009), which could serve as a powerful deterrent that could curb opportunistic behaviors (Kale et al., 2000; Lee et al., 2023; Sambasivan et al., 2013; Tsai and Ghoshal, 1998; Zaheer et al., 1998). Likewise, the benefits of RSI, such as efficiency gains due to specialization (Anderson and Weitz, 1992; Jap and Ganesan, 2000; Nyaga et al., 2010; Zhao et al., 2008), may spill over beyond the investing parties to less or non-investing counterparts. That is, less or non-investing parties may benefit more and thereby become increasingly dependent on the RSIs of the investing parties. Accordingly, with the fear of losing access to the benefits of increased RSI by their partner, it is less likely that the less-investing or non-investing parties will behave opportunistically. This means that even if the RSIA increases, beyond a certain threshold, the pattern of relational conflicts will reverse in a way that the initial spike in relational conflicts will not only start to slow down but will also start to reduce significantly. Therefore, we hypothesize.

H1a. As RSIA on the buyer side increases (RSIA-Buyer), conflicts caused by the suppliers will initially increase and then decrease. In other words, the effect of RSIA-Buyer on supplier conflicts is inverted U-shaped.

H1b. As RSIA on the supplier side (RSIA-Supplier) increases, conflicts caused by the buyers will initially increase and then decrease. In other words, the effect of RSIA-Supplier on buyer conflicts is inverted U-shaped.

2.2. The moderating effect of relative injustice

Reducing conflicts in buyer-supplier relationships requires an appropriate governance mechanism to prevent the less invested parties from opportunistically taking advantage of their dependence advantage for personal gains (Dyer and Singh, 1998; Williamson, 1985). Typically, a legal contract is devised as an initial means of protection against partner opportunism (Belhadi et al., 2021; Hill and Deeds, 1996; Lumineau and Henderson, 2012; Luo, 2007). However, another form of governance for safeguarding investing parties is relational governance, which uses social ties as a means of managing opportunism (Lumineau and Henderson, 2012). Relational governance could become an alternative and/or complementary means to complex and expensive legal contracts in managing partners' opportunistic behaviors (Granovetter, 1985; Hill, 1990).

Organizational justice, which is a type of relational governance, is known to play a significant role in influencing the behaviors of firms, including conflicts in buyer-supplier relationships (Crosno and Dahlstrom, 2008; Huo et al., 2018; Liu et al., 2012; Luo, 2007; Poppo and Zhou, 2014). This study focuses on RIJ, which is based on distributive justice. Distributive justice refers to the perception of the parties involved in an exchange relationship that the returns from the relationship favorably compare with the inputs they have invested (Narasimhan et al., 2013). The extant literature indicates that when

firms believe that there is sufficient distributive justice in a relationship, they are more likely to refrain from opportunistic behaviors (Griffith et al., 2006; Son et al., 2016) because such a perception sets an expectation of the relationship continuing in the future (Luo, 2007; Luo et al., 2015). That is, they are more likely to exhibit collaborative behaviors to maximize the potential for future returns (Poppo and Zenger, 2002). Furthermore, distributive justice can significantly enhance trust and commitment, which are other dimensions of relational governance (Griffith et al., 2006; Son et al., 2016). These relational outcomes play a crucial role in reducing partners' concerns about uncertainties in returns from the relationship, promoting reciprocity and openness (Kale et al., 2000; Son et al., 2021; Zaheer et al., 1998).

With a specific focus on the dyadic buyer-supplier relationship context, we conjecture that the RIJ, measured as the asymmetry in the level of distributive justice, can significantly alter the effect of RSIA on relational conflicts. RIJ in the context of a buyer-supplier relationship is conceptualized as a directional gap, indicating that a firm's perception of distributive justice in the relationship is lower than that of its partner. Such asymmetry in distributive justice, especially when the firm perceives a less favorable outcome, would cause a firm to experience feelings of relative injustice or unfairness in the relationship, potentially leading to undesirable relationship outcomes. Though the impact of distributive justice asymmetry (or RIJ) on firm behavior is still largely unknown, at the individual level, such asymmetry is known to influence individual behaviors, referred to as 'relative deprivation.' In the field of psychology, 'relative deprivation' means the perception of being worse off compared to certain standards, such as one's peers and exchange partners (Folger and Martin, 1986; Smith et al., 2012). This perception often leads to a sense of RIJ (Feather, 2006; Smith et al., 2012) and results in anger and resentment (Frijda et al., 1989; Smith et al., 2012). For this reason, RIJ can be seen as a prominent driver of negative behaviors (Isaac et al., 1980; Smith et al., 2012).

Distributive justice can curb negative behavior through self-restraint for greater benefits from relationships in the long run (Poppo and Zenger, 2002), and similarly, the sense of relative justice felt by a partner could provide a strong incentive for self-restraint. On the flip side, if a partner perceives RIJ in the relationship, then their behavior in the presence of RSIA will be considerably different, given the notion of relative deprivation (Isaac et al., 1980; Smith et al., 2012). Specifically, even though the increasing asymmetric RSI by one party resulting in favorable relational outcomes, such as social capital, could be perceived positively by its counterpart (Kang et al., 2009), the counterpart might nonetheless showcase differential negative behaviors due to a deprived distributive justice (Frijda et al., 1989; Smith et al., 2012). Though the firm with lower investment levels initially recognizes that RSIA, beyond a threshold (i.e., the tipping point), provides them with a solid dependency advantage wherein the partner is locked in a hold-up situation, they will be more inclined to exploit it due to the relative distributive justice deprivation.

Consequently, whenever there is RIJ against the firm investing less, the decline in relational conflicts after the RSIA threshold (i.e., the decreasing part of the inverted U-shape relationship) will not be plausible. The feeling of RIJ could also alter the increase in relational conflicts before the threshold in RSIA is reached (i.e., the increasing part of the inverted U-shape relationship). Specifically, until a particular threshold in RSIA is reached, the partner that is investing slightly more is not subject to a hold-up situation that is irreversible. Therefore, though a firm might recognize dependency advantage due to higher RSI investment by the partner, it will not seek to exploit the situation until a threshold is reached since (1) the partner is not in an irreversible hold-up situation, and (2) there is a simultaneous fear of further distributive justice deprivation. Therefore, we hypothesize.

H2a. RIJ against the supplier (RIJ-Supplier) will negatively moderate the curvilinear relationship between the RSIA-Buyer and supplier conflicts. In other words, the inverted U-shape will flatten as the RIJ-

Supplier increases.

H2b. RIJ against the buyer (RIJ-Buyer) will negatively moderate the curvilinear relationship between the RSIA-Supplier and buyer conflicts. In other words, the inverted U-shape will flatten as the RIJ-Buyer increases.

2.3. The moderating effect of leadership in joint improvement initiatives

Existing literature shows that joint improvement initiatives between buyers and suppliers, such as kaizen, can have various performance benefits (Choi and Kim, 2008; Sting et al., 2019). One such benefit is that it could reduce the negative impact of widened dependence asymmetry on relational conflicts by providing safeguards to investing parties against the opportunistic behavior of their counterparts. Indeed, the existence of joint improvement initiatives may imply that the relationship already has some problems. However, it also indicates that both parties have a common understanding of the status of the relationship (Bastl et al., 2013). In addition, joint problem-solving initiatives are often a result of positive past interactions (Sting et al., 2019). Therefore, the presence of such initiatives indicates that sufficient levels of relational governance elements, such as trust, are already present in the relationship (Sting et al., 2019).

In addition, joint improvement initiatives also encompass joint sensemaking, the cognitive aspects of joint actions. Joint sensemaking, among others, requires that both partners not only share but also reconcile the importance of relationship-specific knowledge in managing the relationship strategically. In other words, joint improvement initiatives require even closer and more frequent interactions between a buyer and its supplier. Such an increase in interactions often results in the emergence of relational norms between them (Gao et al., 2015; Uzzi et al., 2007; Vurro et al., 2009). Relational norms, which are an important element of relational governance (Liu et al., 2009; Poppo and Zenger, 2002), refer to expectations about behaviors in a relationship that are commonly shared by both a buyer and its supplier (Bastl et al., 2013; Heide and John, 1990; Son et al., 2021). Relational norms can suppress partner opportunism by providing a clear list of acceptable and unacceptable behaviors (Gao et al., 2015), creating a climate of self-regulation of opportunistic behaviors. Additionally, such a list would facilitate firms' efforts to monitor each other's behaviors by providing a guide on types of behaviors to look out for (Vurro et al., 2009).

Given the consensus that joint improvement initiatives in the relationship can have positive outcomes, in this study, we conjecture that an asymmetry in joint improvement initiatives efforts will have an intriguing effect on how RSIA influences relational conflicts. LJJI in a buyer-supplier relationship refers to a directional gap, capturing which party leads the joint improvement initiatives, that is, which party has invested greater effort in joint improvement initiatives as opposed to its partner. Even though the equal commitment of both partners to joint sensemaking and actions could be considered ideal in creating favorable relational outcomes (Hult et al., 2004), there can be benefits to asymmetry in these efforts. It is likely that for the success of initiatives, a firm will willingly accept joint sensemaking initiatives led by a partner with strong leadership and an increased share of ideas and best practices, especially if that partner seeks to better understand what the exchange partner wants. This can result in closer alignment of strategic objectives and trusting relationships. The firm would also be motivated to gain a common understanding of how it will work with its partner, thereby reducing any potential misunderstanding (Tsai and Ghoshal, 1998) and reducing information asymmetry. Additionally, there will also be a strong sense of reciprocity on the part of the firm when its exchange partners lead and share increasingly more in the context of joint improvement initiatives (Dyer and Singh, 1998). Also, parties that invest less can benefit greatly from such initiatives with relatively less involvement, creating a strong incentive to maintain good relationships.

LJJI will thus prevent the less-investing parties from using the dependence advantage offered by RSIA to pursue unilateral gains and as an impetus to act in an unfavorable manner. The relational capital that the partners offer through their higher contribution to the joint improvement initiatives (Dyer and Singh, 1998) could rather lead firms to consider the costs of taking advantage in such RSIA situations to be significantly higher than the underlying benefits (Kale et al., 2000; Tsai and Ghoshal, 1998; Zaheer et al., 1998). With the ambition to realize the full relational benefits offered in asymmetric joint improvement initiatives that are dominated by the leadership and contributions from the partner, firms will refrain from reverting to negative behavior despite a dependence advantage over the partner in terms of RSI (Gao et al., 2015; Uzzi et al., 2007; Vurro et al., 2009). In other words, the relational norms and benefits facilitated by a higher asymmetry (i.e., decisive leadership by the investing party) in joint improvement initiatives (Lui et al., 2009; Poppo and Zenger, 2002) will ensure that the benefiting firm alters its natural behavior and, instead, reduces the extent of relational conflicts with the increase in RSIA. Therefore, we conjecture that an increasing asymmetry in the joint improvement initiatives will flatten the inverted U-shaped effect.

H3a. Buyer's LJJI (LJJI-Buyer) will negatively moderate the curvilinear relationship between the RSIA-Buyer and supplier conflicts. In other words, the inverted U-shape will flatten as the LJJI-Buyer increases.

H3b. Supplier's LJJI (LJJI-Supplier) will negatively moderate the curvilinear relationship between the RSIA-Supplier and buyer conflicts. In other words, the inverted U-shape will flatten as the LJJI-Supplier increases.

3. Methodology

3.1. Primary data collection

In this study, we used matched-pair data, which refers to data obtained by asking a pair of buyers and suppliers about different dimensions of the same relationship (e.g., Lee et al., 2023; Liu et al., 2012). Although collecting a matched-pair dataset is resource-intensive and time-consuming, we chose to do so in order to address the exception fallacy, which refers to "an erroneous finding in which researchers draw biased aggregate or group conclusions among stakeholders based on a single evaluator" (Roh et al., 2013, p. 712). Given the dyadic nature of constructs in this study, this may be a major concern. Indeed, Liu et al. (2012) found that there is a significant difference between the perceptions of buyers and suppliers on different types of justice in their relationships. One way to address this concern is to use multi-stakeholder samples, for example, matched-pair data (Lee et al., 2023; Patrucco et al., 2021).

We developed two different survey instruments targeting the buyer and one of its key suppliers. Both these survey instruments included pre-existing scales from extant literature. Before data collection, the survey instruments were pretested using two manufacturing dyads located in Chennai, India. Some minor changes were made to the survey instrument based on the input from the experts; these changes were not related to the measurement of theoretical constructs included in this study. The items capturing the theoretical constructs were measured using a 7-point Likert scale with anchors of "strongly disagree" and "strongly agree."

Given the diverse set of topics covered in our survey questionnaire, we included Indian manufacturing firms with SIC codes ranging between 20 and 39 in our sampling frame. We specifically focused on focal firms that were part of the Tier-1 of the automotive supply chains. The Indian automotive industry is the ideal context for our study because it is the 4th largest automotive industry in the world (Dhawan and Sengupta, 2020). To arrive at our initial sampling frame, we used the Credit Risk Monitor Directory of 4000 firms to identify publicly listed automotive and automotive components manufacturers; we identified 260 firms

from this directory by scanning the product portfolio of the member firms. Additionally, we identified 824 public firms from those that participated in the annual auto expo event. After verifying the authenticity of these 1084 companies through fundoodata.com, we solicited their participation in our study. Of the 1084 companies contacted, 402 responded to our request for participation. However, only 138 firms consented to participate in our study.

We used a market research consulting firm located in Delhi, India, to administer our survey instrument. Prior to data collection, the data collection team was trained through a pilot data collection effort. Additionally, we ensured that the team understood the various behavioral survey items that were part of the instrument. The team contacted the 138 firms that consented to participate in the survey and asked them to identify the key respondent from their purchasing department. The purchasing executive was asked to identify a key supplier and provide the contact details of a key respondent from this supplier; the respondents from the supplier side held key positions in the firm's sales division. Subsequently, the data collection team contacted the respondents from both the buyer and supplier firms to collect data pertaining to that dyadic relationship; while the buying firms were instructed to answer all relationship-specific items based on the selected supplier, the suppliers were instructed to answer those questions based on the focal buying firm. With the ambition to ensure the reliability and quality of the data collection effort, we continuously selected and contacted 5% of the respondents. While all 138 buyer firms responded to our survey, we did not receive responses from the supplier for 17 of these dyads. Therefore, we dropped these 17 dyads from further consideration. Our final sample consisted of 121 matched pairs of dyads that represented most of the major automotive clusters located in different parts of India. Considering the 402 firms that responded to our initial request, our response rate was 30.09%; when considering the initial sampling frame that was contacted, our response rate was 11.16%.

As for the firm profile, around 90% of the buying firms employed more than 500 workers; similarly, around 80% of the suppliers employed more than 500 workers. Regarding the buying firms, they seemed to be market leaders since they held more than 20% of the product market share. However, only 9% of the supplier firms held more than 20% of the product market share. As for the respondent profile, respondents from the focal firms held senior executive positions in the purchasing department; additionally, over 50% of them had over 10 years of experience working in the firm. In the case of respondents from the supplier firms, they held manager or senior manager positions in the sales department; around 60% of the supplier respondents had over 10 years of experience working in the firm. Overall, we were confident that we collected data from key respondents from both the buyer and supplier sides of these 121 dyads. Additionally, the buyer firms from the four zones of India were represented evenly in the final sample; however, a higher proportion of both buyer and supplier firms were in the North and West Zones. Additionally, close to 50% of the buyer firms have been working with their suppliers for more than 10 years. Please refer to Table 1 for additional profile information pertaining to the respondents and responding firms.

3.2. Archival data collection

In addition to primary data, we also collected archival data from various secondary data sources. Given that most of the focal firms (i.e., buying firms) were public firms, we collected unaudited financial data from the annual reports available on the company websites. While we tried this approach for both the buyer and supplier firms, this data was available only for 89 buyer firms and 64 supplier firms. Given the lack of financial data for the other buyer and supplier firms from their respective company websites, we used the Morning Star and Economic Times databases as alternative sources of financial data. As we had to use different sources for financial data, we took some additional effort to ensure the consistency of this data. Specifically, we collected and

Table 1
Firm and respondent profile.

Characteristic	Buyer Firm		Supplier Firm	
	Count	Percentage	Count	Percentage
Respondent Title				
Vice President materials	1	0.83		
Senior Manager (Materials and Purchase)	31	25.62		
General manager (Purchase and materials)	10	8.26		
Manager (Purchase and materials)	59	48.76		
Deputy manager (Purchase and materials)	20	16.53		
Managing director			2	1.65
Senior Manager/Head/Director (Marketing)			39	32.23
Manager/Area Sales Manager/Deputy Manager (Marketing)			78	64.46
Business Development Manager			2	1.65
Respondent Experience in the Firm				
Less than 10 years	59	48.76	48	39.67
10 years or more	62	51.24	73	60.33
Number of Employees				
Less than 500	9	7.44	20	16.53
500 to 1000	57	47.11	33	27.27
Greater than 1000	55	45.45	68	56.20
Product Market Share				
Less than 20%	67	55.37	110	90.91
Greater than or equal to 20%	54	44.63	11	9.09
Location of the Firm				
South zone (Bengaluru, Chennai, Hyderabad, Mysore)	23	19.01	17	14.05
North zone (Chandigarh, Delhi, Guragon, Ludhiana, New Delhi, Noida, Rajasthan, Panipat)	41	33.88	48	39.67
West zone (Ahmedabad, Goa, Gujarat, Hazura, Kapoli, Indore, Pune, Thane)	48	39.67	47	38.84
East zone (Jamshepur, Kolkata, Orissa)	9	7.44	9	7.44
Distance to Supplier Firm				
Less than 200 KM	53	43.80		
200 KM or more	69	57.02		
Relationship Length				
Less than 10 years	57	47.11		
10 years or more	64	52.89		

compared net profit, sales turnover, and total assets for all buying firms and suppliers from the *Centre for Monitoring Indian Economy's* Prowess database; this database is the most widely used source for financial data on Indian firms. Apart from financial data, we also collected other firm characteristics (industry classification – SIC codes, number of employees, firm incorporation data, etc.) from the Orbis database provided by Bureau van Dijk (BvD). In the case of industry classification, we collected both primary and secondary SIC codes for all firms. Some of the firms had multiple SIC categories; in these cases, we reviewed the description of activities on the individual company websites to select the appropriate SIC codes that were related to the primary activity.

3.3. Measures

RSIs between buyers and suppliers cover investments that encompass both tangible assets, such as establishing manufacturing facilities or providing support for tool development, and intangible assets, such as sharing tacit knowledge or specialized technologies. Intangible investments play a pivotal role in strengthening the buyer-supplier relationship and mitigating conflicts. To measure this construct, we utilized the four criteria proposed by Liu et al. (2009). One of the items was deleted during the measurement development process.

In the realm of relational *conflicts*, we focused on the notion of destructive conflict, wherein buyers and suppliers develop aversion and

suspicion towards one another due to unhealthy behaviors exhibited during the transaction-specific asset investment conflict process (Li et al., 2011). Utilizing the scale devised by Li et al. (2011), we measured conflict using four items designed to elucidate conflicts that result in detrimental and harmful outcomes. While the buying firm provided responses in relation to supplier conflicts, the supplier firm provided responses in relation to buyer conflicts.

Distributive justice was measured using the five-item scale devised by Liu et al. (2012). This scale measures input factors such as effort, investment, roles, and responsibilities, as well as outcome indicators such as gains and performance, for both parties engaged in the interaction.

Joint improvement initiatives are measured through three key items focusing on the exchange of information concerning supplier and customer interaction processes, production innovation, and performance, as proposed by (Lau et al., 2010). More precisely, our measurement centers on the collaborative efforts in product development, process enhancement, and marketing endeavors undertaken collectively by both buyers and suppliers.

3.4. Measures of asymmetry

Every construct used in our hypothesized models, except for conflicts, was measured in terms of the level of asymmetry, either from the buyer's side or the supplier's side. All asymmetry measures were derived using the spline specification method; this is a widely adopted approach when it comes to asymmetry-based research, especially dependence advantage research (Gulati and Sych, 2007). A spline specification can help not only to measure the direction of asymmetry but also to differentiate between the effects of higher supplier-side asymmetry and higher buyer-side asymmetry. While we could use a single difference variable instead of the spline specification, a single difference variable would needlessly constrain one of the asymmetry variables (i.e., if we use RSI-Buyer – RSI-Supplier (Gulati and Sych, 2007; Zhou et al., 2024), we successfully capture the higher buyer-side asymmetry while constraining the higher supplier-side asymmetry. By doing so, a single difference variable eliminates the flexibility as well as precision of a spline specification (Gulati and Sych, 2007; Kumar et al., 1998). More importantly, given that we have two different players in a dyad and that we would like to study the effect of asymmetry on either side of the dyad, we opted for the precision of the spline specification since it allows us to explore the possible variations in the effects of buyer-side as well as supplier-side asymmetries (Cho et al., 2017; Gulati and Sych, 2007; Paulraj et al., 2025).

While level-plus-gap specification as well as polynomial response surface approach (using curvilinear and interaction effects) could be considered as plausible approaches to test the curvilinear effects of RSIA-Buyer and RSIA-Supplier, we contend that the spline specification is the best approach compared to these alternative specifications. Specifically, in the case of level-plus-gap specification, numerous scholars have noted that such difference-based regression models are not robust (Edwards, 1994, 2001). Though the numerous problems that are posed by difference-based regression models (e.g., Edwards, 1994) could be avoided by using polynomial regression-based response surface approach, our base hypotheses (H_{1a} and H_{1b}) involving RSIA-Buyer and RSIA-Supplier do not lend themselves to the adoption of a second-order polynomial regression model using curvilinear and interaction effects. This conclusion of ours is based on the fact that our base hypotheses are regarding the surface along the asymmetry line of the response surface (please refer to Fig. 2 for the depiction of hypotheses along the asymmetry line). While H_{1a} (involving RSIA-Buyer) focuses on the right side of the asymmetry line (i.e., from the center to the right where RSI-Buyer is greater than RSI-Supplier), H_{1b} (involving RSIA-Supplier) focuses on the left side of the asymmetry line (i.e., from the center to the left where RSI-Supplier is greater than RSI-Buyer). Overall, we hypothesize an M-shaped surface that has three inflection points along the asymmetry line. Given that second-order polynomial regression models test the

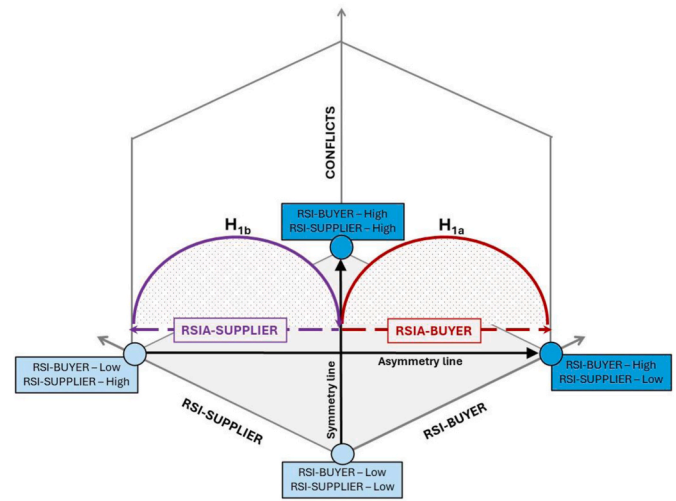


Fig. 2. Response surface approach – depiction of hypotheses H_{1a} and H_{1b} .

presence of U-shaped or inverted U-shaped effects, it is not ideal when we have an M-shaped surface with three inflection points; this might require a fourth-order “quartic” polynomial regression model. Therefore, we chose to adopt regression models involving spline variables as this is the ideal approach to explore the effects involving RSIA-Buyer and RSIA-Supplier on supplier conflicts and buyer conflicts, respectively.

The answers provided by the buyer side and the supplier side were used to derive RSIA, RIJ, and LIJ measures. For example, to derive the RSIA measures, we used the RSI of both the buyer (RSIB) and the supplier (RSIS) firm. RSIA-Buyer was assigned a value of RSIB – RSIS whenever RSIB was greater than RSIS or zero otherwise. RSIA-Buyer will take a positive non-zero value whenever the RSI by the buying firm is higher than the RSI of the supplier firm. Alternatively, RSIA-Supplier was assigned a value of RSIS – RSIB whenever RSIS was greater than RSIB or zero otherwise. RSIA-Supplier will take a positive non-zero value whenever the RSI by the supplier firm is higher than the RSI of the buying firm. Also, whenever RSIA-Buyer is a non-zero value, RSIA-Supplier will be zero and vice versa. RIJ (i.e., RIJ-Buyer and RIJ-Supplier) and LIJ (i.e., LIJ-Buyer and LIJ-Supplier) measures were also derived similarly. Whenever RIJ-Supplier (RIJ-Buyer) takes a positive non-zero value, it indicates that the buyer's (supplier's) perception of distributive justice is higher than the supplier's (buyer's) perception of distributive justice. In other words, if RIJ-Supplier (RIJ-Buyer) takes a positive non-zero value, the supplier (buyer) firm will feel a sense of relative injustice as opposed to the buyer (supplier) firm. Alternatively, whenever LIJ-Buyer (LIJ-Supplier) takes a positive non-zero value, it indicates that the buyer's (supplier's) firm leads and has greater involvement in joint initiatives in comparison to the supplier (buyer). While the buyer model includes RSIA-Buyer, RIJ-Supplier, LIJ-Buyer, and supplier conflicts, the supplier model includes RSIA-Supplier, RIJ-Buyer, LIJ-Supplier, and buyer conflicts.

3.5. Control variables

We used numerous control variables in our regression models to isolate the effects of other potential drivers of conflicts, as well as to minimize the threat due to omitted variables. First, we controlled for the effect of firm sizes of the buyer and supplier firms which could have a subsequent significant impact on relational conflicts. Firm size was measured using two different aspects – number of employees and sales turnover; this data was collected from archival sources. Both these variables were log-transformed before being included in the regression models. In addition, we also controlled for the relative size of the two firms across both measures of firm size (i.e., number of employees and sales turnover). Second, given that the presence of annual contracts

could signal the importance of the relationship to the partners (Williamson, 1985), we used the presence of an annual contract as another control variable; this was measured as a dummy variable that was set to 1 when there is the presence of an annual contract and 0 otherwise. Third, we used relationship length as another control variable; we log-transformed it before including it in the analysis. Fourth, we used the distance between the partner firms as a control variable; we included the log-transformed distance between the partner firms in our models. Fifth, we used two different control variables that could reflect the significance of the relationship to both partners. Specifically, we used the time taken to increase production levels as well as design changes as control variables; both these control variables were measured in days. Sixth, we used the personal relationship among the managers in the buyer-supplier relationship as another control variable. Personal relationship was measured using a single item: “Leaders of both sides always invite each other to participate in various activities for socialization”; the average of the scores from both sides was used to operationalize personal relationship.

Seventh, we controlled for two different measures of organizational fit in buyer-supplier relationships. Specifically, we used measures capturing the extent of complementarity as well as compatibility in buyer-supplier relationships. Complementarity was measured using a single item: “Our two firms have separate abilities that, when combined, enable us to achieve goals beyond our individual reach”. Similarly, compatibility was also measured using a single item, “between our firm and supplier/buyer, we share common goals and objectives,” from both the buyer and supplier firms. In both cases, the average of the scores from both sides were used to operationalize complementarity and compatibility. Eighth, extant research suggests that formal mechanisms that are used in inter-organizational relationships could support or hinder dark sides, including conflicts. Accordingly, we included contractual mode as a control variable; it was measured using a single item, “In dealing with this supplier/buyer, our contract precisely states how each party is to perform” from both the buyer and supplier firms; the average of the scores from both sides was used to operationalize contractual mode. Finally, we also controlled for mutual dependence and dependence asymmetry (i.e., power imbalance) in the buyer-supplier relationship. Dependence was measured using a single item, “The supplier/buyer is quite dependent on us” from both the buyer and supplier firms. To capture mutual dependence, we added the scores of supplier and buyer dependence; alternatively, to capture asymmetry (power imbalance), we took the absolute difference between the scores of supplier and buyer dependence (Gulati and Sych, 2007).

3.6. Assessment of biases

To assess non-response bias, we followed two of the methods suggested by Rogelberg and Stanton (2007). First, we used wave analysis, wherein we split our respondents into early and late groups. Subsequently, we compared firm characteristics – sales, employee count, industry type – across these two groups. Our analysis did not reveal any statistical differences across these two groups. Second, we used the follow-up approach. Though we did not contact the non-respondents, we collected data on firm characteristics from secondary data sources (Prowess database as well as Orbis). Specifically, we compared the buying firms that completed the survey to the buying firms that did not participate. As in the earlier wave analysis, we compared firm characteristics – sales, employee count, industry type – across these two groups; again, we did not find any statistical difference across these groups. The results of these two approaches eliminate any concerns regarding non-response.

As for common method bias, our dyadic research design alleviates some of the underlying concerns. Data pertaining to all the theoretical constructs included in our hypothesized model were collected from both the buyer and the supplier firms. While our research design minimizes common method bias, we conducted the Widaman (1985) test to

validate this conjecture. We assessed two different measurement models – Model-T with just the traits and Model-TM with the traits as well as a method factor – for the buyer and supplier data (Podsakoff et al., 2003). Through the variance partitioning approach, we found that the method factor in both the buyer and supplier data accounted for approximately 6% and 5% of the variance, respectively. However, given that the traits accounted for over 71% and 72% of the variance in the buyer and supplier data, respectively, the marginal improvement in variance explained was less than 10% in both cases; this marginal improvement is considerably lower than the method variance of 25% observed by Williams et al. (1989). More importantly, the significance of the path coefficients of the traits across both the buyer and supplier data was not very different between the Model-T and Model-TM models. Based on these results, we can safely conclude that common method bias is not an issue in our study.

3.7. Assessment of the measurement instrument

Separate confirmatory factor analysis models for the buyer and supplier data were conducted to assess the validity and reliability of the constructs. Please refer to Tables A-1 and A-2, included in Appendix A, for the results of the analysis of buyer and supplier data, respectively. The model fit indices in both cases were found to be satisfactory. Additionally, all the standardized path coefficients were over 0.50. The t-values for the path coefficients ranged between 5.93 and 21.44 (the t-values are included in Tables A-1 and A-2, included in Appendix A); they were statistically significant ($p < 0.01$). We did two additional tests to further assess discriminant validity. First, we used the Fornell and Larcker (1981) test and found that the squared correlation for each pair of constructs was lower than the AVEs of the underlying constructs; the AVEs are included in Tables A-1 and A-2 in Appendix A, while the correlations are given in Tables B-1 and B-2 included in Appendix B. We also used the more stringent heterotrait-monotrait (HTMT) statistic (Henseler et al., 2015) to assess discriminant validity. The HTMT values of the constructs (both buyer and supplier) ranged between 0.04 and 0.67. Since these values were below the threshold of 0.85, we can safely conclude that the measurement items exhibit discriminant validity.

For reliability, we used a diverse set of measures. We used both coefficient alpha and coefficient omega to assess reliability; given that none of the theoretical constructs were tau-equivalent, coefficient omega is considered a better measure (Deng and Chan, 2017). As evident from Tables A-1 and A-2 in Appendix A, alpha (0.77 – 0.97) and omega (0.78 – 0.97) values were greater than 0.70. Additionally, the values of robust alpha (0.76 – 0.97) and robust omega (0.77 – 0.97) were also found to be greater than 0.70 (Zhang and Yuan, 2016). The composite reliability (0.79 – 0.97) and AVE (0.57 – 0.88) values from the confirmatory factor analysis (please refer to Tables A-1 and A-2 in Appendix A) were also above the threshold of 0.70 and 0.50, respectively.

Given that we collected data from both sides of the dyad, it is traditional to assess configural and metric invariance across the buyer and supplier samples. However, we believe that testing for configural and metric invariance is not required in our case. Especially, among the latent factors and their measurement items included in our hypothesized model, only the items related to conflicts refer to the relationship in general; accordingly, these are perceptions of the buyer and the supplier firms regarding the conflicts that occur in their relationship. However, all other latent factors (and their indicators) refer to the specific firm of the respondent (i.e., either the buyer or supplier firm). In other words, most of the items refer to what a specific firm in the relationship has invested (investments), or gains (distributive justice), or shares (joint improvement ideas). Accordingly, the presence of invariance need not be a concern in our case (actually, it is plausible to have variance).

However, we conducted a multi-group CFA for the buyer and supplier data and checked for configural and metric invariance. In this analysis, we set the measurement model to be invariant (i.e., factor

loading [LX matrix] as well as measurement error covariance [TD matrix] were set to be invariant, while the variance-covariance among the latent factors [PH matrix] were set to have the same pattern and starting values). The fit indices for this model are given in Table A-3 (Model 1) included in [Appendix A](#). Subsequently, we set all terms in the LX, TD, and PH matrices to be equal across the two groups. The fit indices for this model are presented in Table A-3 (Model 2) included in [Appendix A](#). Since the model fit in this case was not adequate, we had to allow two terms in the PH matrix (1. distributive justice and conflicts, and 2. relationship-specific investments and conflicts) and one term in the TD matrix (3rd item in the relationship-specific investments) to not be equal across the two groups. The results of this model are presented in Table A-3 (Model 3) included in [Appendix A](#). In this case, we found the model to

have an adequate fit. Overall, except for these specific parameters, all other parameters were found to be invariant across the buyer and supplier samples. More importantly, given that the items were measured in a way that they could be different across the samples, we believe that the variance of these three terms across the two samples is of no concern in our study. In summary, our results suggest that the measurement items are valid, reliable, and unidimensional.

4. Results

We tested the proposed hypotheses using hierarchical linear regression models. Before this, we checked to ensure the assumptions of regression analysis, such as normality and heteroskedasticity, were met.

Table 2
Results of regression analysis dependent variable: supplier conflicts.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.925 (0.828)	1.835 (0.661)	0.548 (0.897)	0.763 (0.860)	-1.700 (0.697)	-1.551 (0.729)
Number of Employees - Buyer	0.340 (0.270)	0.162 (0.586)	0.185 (0.521)	0.185 (0.530)	0.304 (0.316)	0.300 (0.334)
Relative Size - Employee	-0.110 (0.806)	-0.146 (0.743)	-0.193 (0.673)	-0.206 (0.661)	-0.216 (0.650)	-0.220 (0.653)
Annual Contract	1.255** (0.015)	1.259** (0.014)	1.247** (0.015)	1.258** (0.018)	1.149** (0.030)	1.166** (0.033)
Relationship Length	-0.492 (0.193)	-0.317 (0.392)	-0.314 (0.399)	-0.302 (0.429)	-0.197 (0.612)	-0.186 (0.639)
Distance	-0.087 (0.558)	-0.074 (0.601)	-0.059 (0.674)	-0.058 (0.685)	-0.066 (0.640)	-0.064 (0.661)
Time for Engineering Changes (in days)	-0.236 (0.504)	-0.175 (0.603)	-0.172 (0.606)	-0.182 (0.599)	-0.099 (0.772)	-0.112 (0.751)
Time for Production Increase (in days)	-0.610 (0.229)	-0.378 (0.449)	-0.385 (0.445)	-0.394 (0.447)	-0.387 (0.456)	-0.390 (0.464)
Personal Relationship	0.324 (0.327)	0.063 (0.853)	0.066 (0.847)	0.050 (0.884)	0.273 (0.458)	0.265 (0.482)
Organizational Fit - Complementarity	0.575* (0.090)	0.702** (0.036)	0.766** (0.023)	0.741** (0.033)	0.799** (0.017)	0.772** (0.026)
Organizational Fit - Compatibility	-0.007 (0.980)	-0.108 (0.700)	-0.064 (0.820)	-0.060 (0.834)	0.010 (0.972)	0.007 (0.982)
Contractual Mode	-0.577* (0.094)	-0.601* (0.072)	-0.510 (0.130)	-0.511 (0.145)	-0.606* (0.088)	-0.598 (0.101)
Sales Turnover - Buyer	0.252** (0.043)	0.277** (0.026)	0.283** (0.024)	0.289** (0.025)	0.315*** (0.005)	0.322*** (0.006)
Relative Size - Sales Turnover	0.723 (0.144)	0.816* (0.081)	0.802* (0.082)	0.816* (0.085)	0.817* (0.060)	0.837* (0.059)
Mutual Dependence	-0.050 (0.743)	0.049 (0.731)	0.030 (0.830)	0.027 (0.859)	0.053 (0.701)	0.058 (0.696)
Power Imbalance	-0.120 (0.604)	-0.175 (0.450)	-0.145 (0.546)	-0.138 (0.592)	-0.194 (0.441)	-0.199 (0.458)
Main Effects						
RSIA-Buyer		-1.219*** (0.001)	-2.258*** (0.005)	-2.255** (0.012)	-4.350*** (0.000)	-4.286*** (0.000)
RSIA-Buyer ²			0.628* (0.074)	0.642 (0.122)	2.946*** (0.000)	2.904*** (0.000)
Moderation Effects						
RIJ-Supplier				-0.133 (0.399)		-0.091 (0.619)
LJI-Buyer					-1.589*** (0.000)	-1.602*** (0.008)
RSIA-Buyer * RIJ-Supplier				0.150 (0.838)		0.135 (0.876)
RSIA-Buyer ² * RIJ-Supplier				0.025 (0.969)		-0.100 (0.899)
RSIA-Buyer * LJI-Buyer					-10.416*** (0.000)	-10.446*** (0.000)
RSIA-Buyer ² * LJI-Buyer					9.584*** (0.000)	9.600*** (0.000)
F	4.320*** (0.000)	4.830*** (0.000)	4.850*** (0.000)	9.340*** (0.000)	9.020*** (0.000)	9.140*** (0.000)
R2	0.211	0.272	0.288	0.290	0.328	0.329
ΔR2		0.061*** (0.001)	0.016* (0.074)	0.002 (0.821)	0.040*** (0.001)	0.041*** (0.001)
N	110	110	110	110	110	110

Note: *** significant at $p \leq 0.01$, ** significant at $p \leq 0.05$, * significant at $p \leq 0.10$.
The p-values are included in paranthesis.

For most of the models, we found heteroskedasticity to be an issue; to overcome this, we used robust standard errors to determine the significance of the regression coefficients. Since we hypothesized curvilinear as well as interaction effects, we mean-centered the variables before calculating the quadratic as well as interaction terms; apart from minimizing multicollinearity, this approach also minimizes the ill-conditioning in the data. Please refer to Tables B-1 and B-2, included in [Appendix B](#), for the descriptive statistics as well as the intercorrelation matrix for the buyer and supplier models. The results of the regression analyses of supplier conflicts and buyer conflicts are presented in [Tables 2 and 3](#), respectively. Model 1 in [Tables 2 and 3](#) includes only the control variables in the regression analysis.

Hypotheses H_{1a} and H_{1b} propose that the effect of RSIA-Buyer on

supplier conflicts and RSIA-Supplier on buyer conflicts is inverted U-shaped. Model 3 in [Tables 2 and 3](#) tests for the curvilinear effect of the respective RSIA. The plots were developed based on $\mu - \sigma$, μ , $\mu + \sigma$, and $\mu + 2\sigma$ of RSIA-Buyer and RSIA-Supplier. Since the $\mu - 2\sigma$ was below the minimum value of RSIA-Buyer and RSIA-Supplier, we stopped at $\mu - \sigma$. Looking at the results of Model 3 in [Table 2](#), the curvilinear effect of RSIA-Buyer on supplier conflicts ($b = 0.628$; $t = 1.81$; $p = 0.074$) was U-shaped and marginally significant. The [Sasabuchi \(1980\)](#) test was found to be insignificant ($t = 0.99$; $p = 0.163$), further validating the absence of a U-shape. In other words, though the turning point (1.98) and its confidence interval based on the Delta method (95% CI: LL = 0.97, UL = 2.99) were within the range of observed values of RSIA-Buyer (Min = 0.00, Max = 3.00), we did not find support for hypothesis H_{1a} ,

Table 3

Results of regression analysis dependent variable: buyer conflicts.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	8.074** (0.013)	7.360** (0.015)	7.160** (0.015)	6.078** (0.013)	7.427** (0.015)	6.359** (0.013)
Number of Employees - Supplier	0.397** (0.043)	0.343* (0.050)	0.345** (0.032)	0.314** (0.023)	0.349** (0.039)	0.328** (0.018)
Relative Size - Employee	-0.902** (0.036)	-0.870** (0.037)	-0.802* (0.053)	-0.774** (0.021)	-0.814* (0.052)	-0.765** (0.023)
Annual Contract	-0.584 (0.310)	-0.783 (0.160)	-0.631 (0.250)	-0.590 (0.121)	-0.593 (0.284)	-0.565 (0.143)
Relationship Length	-0.680** (0.017)	-0.531** (0.040)	-0.477* (0.062)	-0.183 (0.397)	-0.451* (0.089)	-0.156 (0.471)
Distance	-0.380*** (0.003)	-0.284** (0.013)	-0.304*** (0.007)	-0.211** (0.038)	-0.297*** (0.009)	-0.222** (0.035)
Time for Engineering Changes (in days)	-0.465 (0.168)	-0.582** (0.043)	-0.538** (0.042)	-0.580** (0.014)	-0.506* (0.056)	-0.584** (0.015)
Time for Production Increase (in days)	-1.076** (0.023)	-0.714* (0.087)	-0.607 (0.130)	-0.328 (0.357)	-0.597 (0.139)	-0.388 (0.286)
Personal Relationship	0.078 (0.762)	-0.070 (0.776)	-0.186 (0.421)	-0.144 (0.490)	-0.202 (0.389)	-0.111 (0.604)
Organizational Fit - Complementarity	0.268 (0.389)	0.190 (0.480)	0.284 (0.280)	0.173 (0.475)	0.286 (0.294)	0.140 (0.577)
Organizational Fit - Compatibility	0.219 (0.316)	-0.024 (0.911)	-0.025 (0.909)	-0.059 (0.761)	-0.033 (0.878)	-0.047 (0.808)
Contractual Mode	-0.204 (0.480)	-0.043 (0.878)	-0.024 (0.928)	0.148 (0.514)	-0.069 (0.799)	0.126 (0.582)
Sales Turnover - Supplier	0.064 (0.465)	0.093 (0.230)	0.076 (0.280)	0.034 (0.579)	0.091 (0.212)	0.019 (0.754)
Relative Size - Sales Turnover	0.137 (0.783)	0.020 (0.965)	0.147 (0.751)	0.088 (0.814)	0.028 (0.955)	0.071 (0.856)
Mutual Dependence	-0.076 (0.504)	0.032 (0.766)	0.042 (0.686)	0.081 (0.391)	0.035 (0.745)	0.087 (0.346)
Power Imbalance	0.168 (0.472)	0.256 (0.215)	0.230 (0.230)	0.243 (0.152)	0.245 (0.207)	0.240 (0.169)
<u>Main Effects</u>						
RSIA-Supplier		0.451*** (0.000)	0.529*** (0.000)	0.566*** (0.000)	0.522*** (0.000)	0.560*** (0.000)
RSIA-Supplier ²			-0.196*** (0.009)	-0.254*** (0.000)	-0.198** (0.018)	-0.277*** (0.000)
<u>Moderation Effects</u>						
RIJ-Buyer				-0.855*** (0.000)		-0.886*** (0.000)
LJI-Supplier					-0.496 (0.331)	0.104 (0.806)
RSIA-Supplier * RIJ-Buyer				-0.216*** (0.001)		-0.227*** (0.000)
RSIA-Supplier ² * RIJ-Buyer				0.102*** (0.048)		0.105*** (0.043)
RSIA-Supplier * LJI-Supplier					-0.135 (0.412)	0.079 (0.570)
RSIA-Supplier ² * LJI-Supplier					0.117 (0.418)	0.044 (0.722)
F	6.040*** (0.000)	10.470*** (0.000)	11.570*** (0.000)	23.410*** (0.000)	12.930*** (0.000)	21.420*** (0.000)
R ²	0.376	0.486	0.520	0.683	0.527	0.687
ΔR^2		0.110*** (0.000)	0.034*** (0.009)	0.163*** (0.000)	0.007 (0.780)	0.168*** (0.000)
N	107	107	107	107	107	107

Note: *** significant at $p \leq 0.01$, ** significant at $p \leq 0.05$, * significant at $p \leq 0.10$. The p-values are included in paranthesis.

suggesting that while RSIA-Buyer reduces supplier conflict, this effect is linear with a negative slope ($b = -2.255$; $t = -2.68$; $p = 0.005$). Please refer to Panel A of Fig. 3 for the effects of RSIA-Buyer on supplier conflicts. On the contrary, as evident from Table 3 (Model 3), the curvilinear effect of RSIA-Supplier on buyer conflicts ($b = -0.196$; $t = -2.67$; $p = 0.009$) was inverted U-shaped and significant. The Sasabuchi (1980) test was found to be significant ($t = 1.72$; $p = 0.045$), thereby suggesting the presence of an inverted U-shaped effect. Additionally, the turning point (3.19) and its confidence interval (95% CI: LL = 2.25, UL = 4.13) were within the range of observed values of RSIA-Supplier (Min = 0.00, Max = 5.33). Based on this result, we find support for hypothesis H_{1b}. Panel B of Fig. 3 presents the effects of RSIA-Supplier on buyer conflict.

The rest of the hypotheses tested the moderation effects of RIJ and LJI. For all these hypotheses, we developed the plots based on $\mu - \sigma$, μ , $\mu + \sigma$, and $\mu + 2\sigma$ of RSIA, RIJ, and LJI. Even in these cases, we found the $\mu - 2\sigma$ value to be below the minimum value of RSIA, RIJ, and LJI. Hypothesis H_{2a} suggests that RIJ-Supplier will moderate the curvilinear effect of RSIA-Buyer on supplier conflicts. Though the curvilinear effect of RSIA-Buyer on supplier conflicts was not significant, we tested the moderating effect on the linear and curvilinear effects. We assessed the moderating effect using ΔR^2 as well as the significance of the interaction terms. When compared to Model 3 of Table 2, the ΔR^2 value for Model 4 (0.002) was insignificant. Additionally, the moderating effect of the linear ($b = 0.150$; $t = 0.21$; $p = 0.838$) and curvilinear ($b = 0.025$; $t = 0.04$; $p = 0.969$) effects were insignificant. In other words, we did not find support for hypothesis H_{2a}. Panel A of Fig. 4 presents the moderating effect of RIJ-Supplier on the relationship between RSIA-Buyer and supplier conflicts.

Hypothesis H_{2b} suggests that RIJ-Buyer will moderate the curvilinear effect of RSIA-Supplier on buyer conflicts. When compared to Model 3 of Table 3, the ΔR^2 value for Model 4 was 0.16 and significant. Additionally, the moderating effect of the linear ($b = -0.216$; $t = -3.45$; $p = 0.001$) as well as curvilinear ($b = 0.102$; $t = 2.01$; $p = 0.048$) effects were also found to be significant. In other words, hypothesis H_{2b} was supported by our results. Panel B of Fig. 4 presents the moderating effect of RIJ-Buyer on the relationship between RSIA-Supplier and buyer conflicts. Panel B of Fig. 4 suggests that the curvilinear effect of RSIA-Supplier on buyer conflicts flattens at higher levels of RIJ-Buyer (Haans et al., 2016). The procedure recommended by Haag et al. (2021) was used to calculate the slopes at the different values of RIJ-Buyer ($\mu - \sigma = 0.75$; $\mu = 0.51$; $\mu + \sigma = 0.27$; $\mu + 2\sigma = 0.03$). Since the slope decreased with the increase in RIJ-Buyer, we can conclude that the inverted U-shaped effect flattens as RIJ-Buyer increases. While looking at the turning point, it seems to shift slightly towards the right of RSIA-Supplier (ranging from Min = 0.00 to Max = 5.33) as RIJ-Buyer increases. Specifically, when RIJ-Buyer is $\mu - \sigma$, the turning point is at RSIA-Supplier = 2.94 (95% CI: LL = 2.50, UL = 3.37); when RIJ-Buyer is μ , the turning point is at RSIA-Supplier = 2.95 (95% CI: LL = 2.38, UL =

3.53); when RIJ-Buyer is $\mu + \sigma$, the turning point is at RSIA-Supplier = 3.00 (95% CI: LL = 0.98, UL = 5.02); when RIJ-Buyer is $\mu + 2\sigma$, the turning point is at RSIA-Supplier = 3.91 (95% CI: LL = -47.28, UL = 55.11) and outside the range of values observed for RSIA-Supplier.

Hypothesis H_{3a} suggests that LJI-Buyer will moderate the curvilinear effect of RSIA-Buyer on supplier conflicts. Though the curvilinear effect of RSIA-Buyer on supplier conflicts was insignificant, we tested the moderating effect on the linear and curvilinear effects. When compared to Model 3 of Table 2, the ΔR^2 value for Model 5 (0.04) was significant. Additionally, the moderating effect of the linear ($b = -10.416$; $t = -4.13$; $p = 0.000$) as well as curvilinear ($b = 9.584$; $t = 4.29$; $p = 0.000$) effects were also found to be significant. Please refer to Panel C of Fig. 4 for the moderating effect of LJI-Buyer on the relationship between RSIA-Buyer and supplier conflicts. As evident from Panel C of Fig. 4, the shape of the curvilinear effect of RSIA-Buyer on supplier conflicts shifts from inverted U-shaped to U-shaped as LJI-Buyer increases; additionally, the U-shaped effect subsequently steepens as LJI-Buyer increases (Haans et al., 2016). The slopes at the different values of LJI-Buyer ($\mu - \sigma = 3.14$; $\mu = -5.89$; $\mu + \sigma = -14.93$; $\mu + 2\sigma = -23.96$) also suggest this effect (Haans et al., 2016). There is an inverted U-shaped effect at $\mu - \sigma$ value of LJI-Buyer as the slope is positive. The subsequent decrease in slope from the value of μ of LJI-Buyer suggests that as LJI-Buyer increases, there is a steepening of the U-shaped effect. When the curvilinear effect is U-shaped (i.e., at μ , $\mu + \sigma$, $\mu + 2\sigma$ values of LJI-Buyer), the turning point seems to shift slightly towards the left of RSIA-Buyer (ranging from Min = 0.00 to Max = 3.00) as LJI-Buyer increases. When LJI-Buyer is μ , the turning point is at RSIA-Buyer = 0.92 (95% CI: LL = 0.75, UL = 1.09); when LJI-Buyer is $\mu + \sigma$, the turning point is at RSIA-Buyer = 0.80 (95% CI: LL = 0.73, UL = 0.88); when LJI-Buyer is $\mu + 2\sigma$, the turning point is at RSIA-Buyer = 0.77 (95% CI: LL = 0.71, UL = 0.83). Alternatively, at LJI-Buyer is $\mu - \sigma$ wherein the shape is inverted U-shaped, the turning point is at RSIA-Buyer = 0.36 (95% CI: LL = -0.28, UL = 1.00) and outside the range of values observed for RSIA-Buyer. Though the significance of the moderating effects of the linear and curvilinear effects suggests support for hypothesis H_{3a}, as we did not witness a simple flattening of the inverted U-shaped effect, and instead witnessed a shape reversal to a U-shaped effect, it is only safer to conclude that our hypothesis H_{3a} is only partially supported.

Hypothesis H_{3b} suggests that LJI-Supplier will moderate the curvilinear effect of RSIA-Supplier on buyer conflicts. When compared to Model 3 of Table 3, the ΔR^2 value for Model 5 (0.007) was found to be not significant. Additionally, the moderating effect of the linear ($b = -0.135$; $t = -0.82$; $p = 0.412$) and curvilinear ($b = 0.117$; $t = 0.81$; $p = 0.418$) effects were also not significant, thereby not providing support for hypothesis H_{3b}. Please refer to Panel D of Fig. 4 for the moderating effect of LJI-Supplier on the relationship between RSIA-Supplier and buyer conflicts. While the moderating effect was not found to be significant, in Panel D of Fig. 4, we notice that the

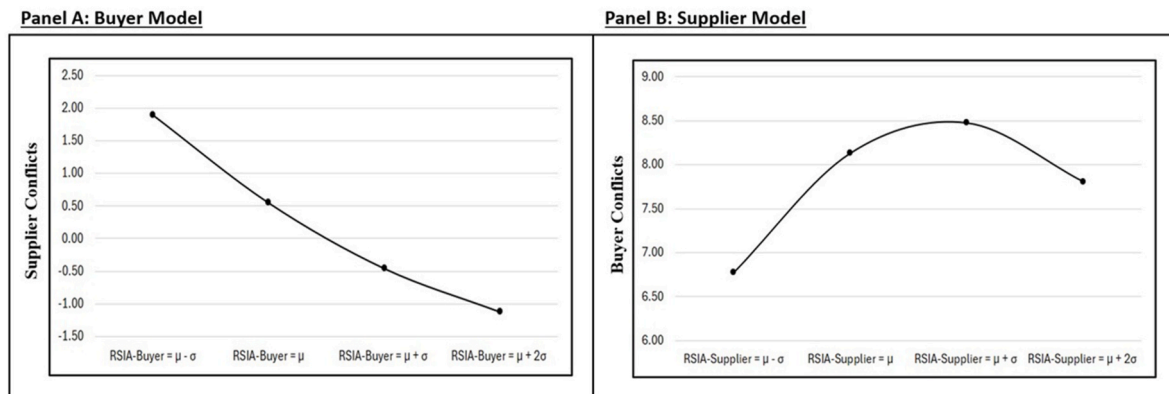


Fig. 3. Curvilinear effects of RSI Asymmetry.

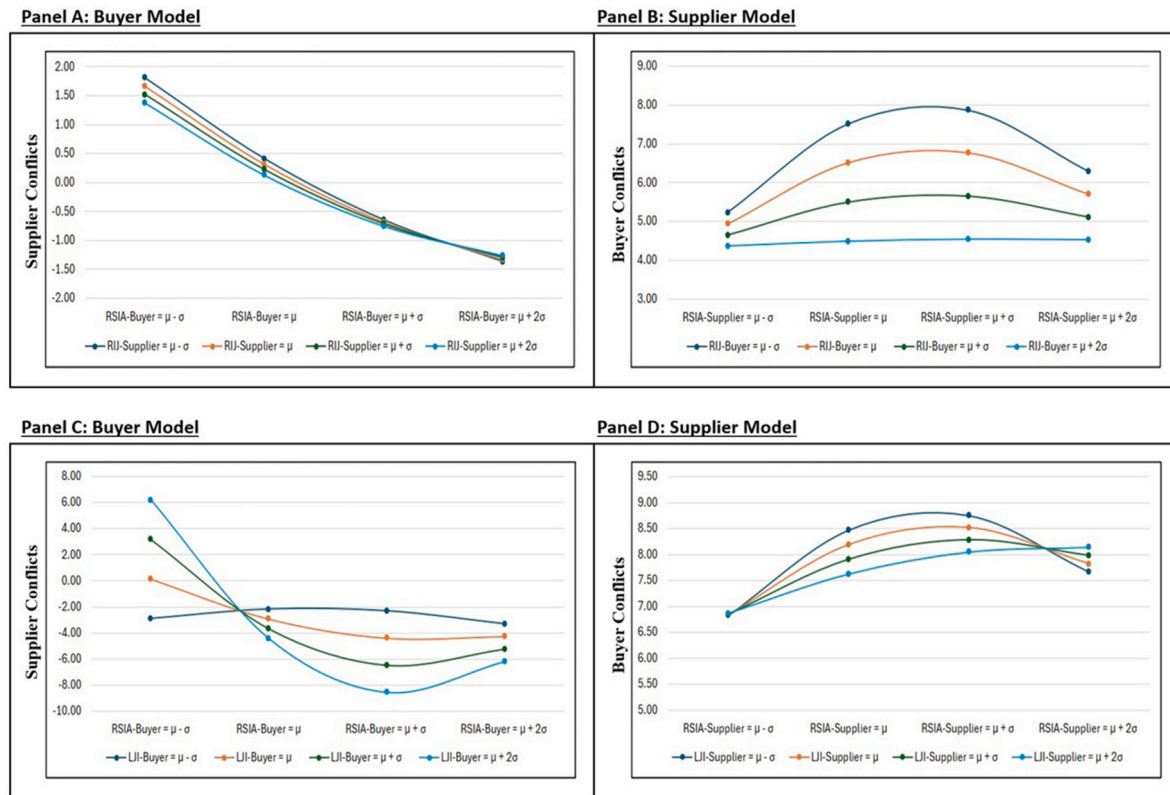


Fig. 4. Moderation effects of RJ and LJ.

curvilinear effect of RSIA-Supplier on buyer conflicts diminishes as LJ-Supplier increases (Haans et al., 2016). A summary of hypotheses and empirical conclusions is presented in Table 4.

4.1. Robustness and endogeneity concerns

In our analysis, we estimated separate OLS regression equations for buyer conflicts and supplier conflicts (both of these were dependent variables). However, given that the data used in both these sets of equations came from the dataset, there is an increased chance that the error terms in these two sets of regression equations could be correlated. The OLS estimation approach used ignores this potential correlation between the error terms in the two set of equations. Therefore, to test the robustness of our results after accounting for this potential correlation between the error terms, we ran multiple seemingly unrelated regression models that provides an econometric technique to assess a system of linear regression equations with correlated error terms (Zellner, 1962). The results of these analyses for supplier conflicts and buyer conflicts are included in Tables C-1 and C-2 included in Appendix C respectively. Specifically, Model 1 in Table C-1 (supplier conflicts) and Table C-2 (buyer conflicts) included in Appendix C were run using a seemingly unrelated regression estimation approach. Similarly, Models 2, 3, 4, 5, and 6 for supplier and buyer conflicts were run using separate seemingly unrelated regression estimation approach. As evident from these two tables, while the significance of the control variables was slightly different using the seemingly unrelated regression estimation models, the results for the hypotheses were consistent with the original results.

Additionally, we also took appropriate steps to assess the bias due to endogeneity. Specifically, following Rocha et al. (2019), we take theoretically-based and empirically-based steps to ensure that our results do not suffer from endogeneity due to self-selection, omitted variables, and reverse causality. Specifically, the Heckman's two-step approach was used to establish that our results were not affected by endogeneity due to self-selection. Following the use of a probit model in

the first step, we incorporated the inverse mill's ratio (Υ) in the second step involving the regression models for supplier and buyer conflicts. The results were found to be consistent, thereby indicating that our results are not affected by endogeneity due to self-selection. To assess endogeneity owing to omitted variables, we assessed the robustness of our results after the inclusion of industry as well as location-fixed effects. During this analysis, the support for our hypotheses were found to be consistent, thereby indicating that our results are not affected by endogeneity due to omitted variables. Detailed description of these two endogeneity assessments are provided in Appendix D.

In the case of endogeneity due to reverse causality, we contend that it should be minimal in our hypothesized models. Additionally, while such concerns could be addressed using appropriate instrumental variables, the identification of such variables could be problematic in our study (Angrist and Pischke, 2009; Miller et al., 2021). Specifically, we not only study the effect of asymmetry of various constructs in a dyadic relationship but also the effect of moderation effects among these asymmetry measures. Therefore, given that the concerns due to reverse causality are not that detrimental in our study, we follow Ketokivi and McIntosh (2017) and address the extent of endogeneity concerns based on theoretical argumentations. Numerous studies suggest that any size or other asymmetries in relationships could lead to increased conflicts (Johnsen and Lacoste, 2016; Oliveira and Lumineau, 2019). When considering the sources (or antecedents) of conflicts, scholars clearly identify asymmetry in RSI to be a significant source of relational conflicts (Anderson and Weitz, 1989; Jap and Ganesan, 2000; Williamson, 1979; Yu et al., 2010). Alternatively, when discussing the consequences of conflicts, scholars predominantly discuss potential negative performance implications and discontinuation of relationships (Griffith et al., 2006; Malhotra and Lumineau, 2011; Oliveira and Lumineau, 2019). In other words, we could conclude that while RSIA could lead to conflicts, the reverse relationship need not be true.

When it comes to the potential moderators of this relationship, scholars suggest that relational constructs such as trust, social ties

Table 4
Summary of hypotheses and empirical conclusions.

Hypothesis	Predicted relationship	Results	Main conclusion
H _{1a}	RSI-Buyer has an inverted U-shaped effect on supplier conflict	Not supported (no inverted U-shaped effect)	When buyer RSI exceeds supplier RSI, supplier conflict does not follow an exploit–then–restrain pattern; instead, suppliers appear to exercise restraint from the outset, suggesting that buyer RSI is interpreted as a credible signal of commitment rather than a vulnerability.
H _{1b}	RSI-Supplier has an inverted U-shaped effect on buyer conflict	Supported	When supplier RSI exceeds buyer RSI, buyers initially increase conflict by exploiting emerging dependence asymmetry, followed by restraint as asymmetry becomes more pronounced.
H _{2a}	RIJ-Supplier moderates the effect of RSI-Buyer on supplier conflict	Not supported	Suppliers tend to accept any RIJ in the relationship since distributive justice asymmetry does not have any impact on the relationship between buyer RSI and supplier conflict.
H _{2b}	RIJ-Buyer moderates the effect of RSI-Supplier on buyer conflict	Supported	High distributive justice asymmetry in favor of the supplier, would result in the buyers to perceive supplier RSI beyond the threshold as a sign of goodwill, suggesting that the previously observed recovery of initially increased relational conflict is less likely to happen.
H _{3a}	LJI-Buyer moderates the effect of RSI-Buyer on supplier conflict	Supported	Whenever the buyer firm takes a clear lead in joint improvement initiatives, the supplier firm will tend to interpret this leadership as a positive signal and try to adjust its negative behavior accordingly.
H _{3b}	LJI-Supplier moderates the effect of RSI-Supplier on buyer conflict	Not supported	The extent of trust signaled through the supplier's leadership in joint improvement initiatives is not as important as RIJ.

among partners, and norms of cooperation could be potential candidates (Oliveira and Lumineau, 2019; Wuyts and Geyskens, 2005). In other words, joint improvement initiatives (reflecting social ties) and distributive justice (reflecting the norms of cooperation in the relationship) could be seen as precursors to conflicts rather than the other way around (Griffith et al., 2006; Wuyts and Geyskens, 2005). In general, when firms engage in relationships that reflect relational behavior (i.e., joint improvement initiatives) as well as stronger ties (distributive justice), the resulting cooperative environment could result not only in lower conflicts but also increased relationship satisfaction (Griffith et al., 2006). More importantly, as for the outcome of conflicts, extant literature has clearly established that conflicts decrease relationship efficiency as a whole, and in doing so, could lead only to negative performance implications and discontinuation of relationships (Griffith et al., 2006; Malhotra and Lumineau, 2011; Oliveira and Lumineau, 2019). Therefore, we can safely conclude that while joint improvement initiatives and distributive justice could either lead to or moderate the effects on conflicts, the reverse relationship is not plausible. In summary, we strongly believe that endogeneity due to reverse causality

need not be a concern in our study.

5. Discussions and conclusion

RSI provides significant efficiency benefits to both investing parties and their partners due to its specialized nature (Heide and John, 1990; Nyaga et al., 2010), as well as positive relational outcomes such as the development of social capital (Jap and Ganesan, 2000; Nyaga et al., 2010; Zhao et al., 2008). However, when there is an asymmetry in RSI among the exchange partners, it can create a dependence asymmetry that can be exploited by the less-investing party, potentially leading to relational conflict (Crosno and Dahlstrom, 2008). Yet, RSI often occurs in the absence of reciprocal investment in buyer-supplier relationships (Kang et al., 2009), and the conditions under which RSIA exposes investing parties to relational hazards, relationship conflicts in particular, are not well understood. Against this backdrop, we explore the effect of RSIA on relational conflicts, focusing on both buyer and supplier conflicts using matched-pair data. In doing so, we try to tease out the differences in how the hypothesized effects manifest on the buyer and the supplier side of the relationship.

5.1. Theoretical implications

The initial hypotheses (H_{1a} and H_{1b}) were that RSIA would exhibit an inverted U-shaped effect on relational conflict on both sides of the dyad, reflecting an exploit–then–restrain logic under dependence asymmetry. Our findings, however, suggest that the mechanisms through which buyers and suppliers interpret RSIA and respond to the resulting dependency asymmetry differ across the two sides of the dyad. In terms of buyer-induced conflict, in line with the initial hypothesis, when the level of supplier RSI begins to exceed that of the buyer (RSIA-Supplier), the buyer initially responds by exploiting its relative dependence advantage, which, for example, can manifest in opportunistic behavior resulting in heightened relational conflict. Such a response is consistent with prior literature suggesting that even moderate dependence asymmetry can create a hold-up situation for the investing party, enabling the less dependent actor to behave opportunistically in order to appropriate unilateral gains (Williamson, 1985; Jap and Ganesan, 2000). As supplier RSI increases relative to buyer RSI, buyers may therefore attempt to renegotiate terms or extract concessions, particularly when the short-term gains from opportunism are viewed as outweighing the anticipated relational costs (Wathne and Heide, 2000). As the supplier RSI continues to increase and crosses a meaningful threshold, however, the buyer increasingly reinterprets these investments as credible signals of commitment and long-term orientation. Beyond this point, the anticipated costs of continued opportunism, such as the erosion of goodwill and trust, may outweigh the short-term benefits. As a result, buyers start to restrain opportunistic behavior and conflict subsides, consistent with the theorized inverted U-shaped effect that the initial hypothesis postulated.

On the other hand, our results suggest that the mechanism governing suppliers' responses when buyer RSI exceeds supplier RSI differs from that postulated in the initial hypothesis (H_{1a}). Unlike buyers, suppliers do not appear to exploit the emerging dependence gap at low or moderate levels of asymmetry. Instead, they restrain opportunistic behavior from the outset, which helps explain the absence of an inverted U-shaped relationship between RSI asymmetry and supplier conflict in our results. One plausible explanation is that buyer-specific investments are often deliberate and strategic, functioning as credible signals of commitment that strengthen buyer-supplier relationships, rather than being interpreted solely as sources of vulnerability (Bensaou and Anderson, 1999). Under such conditions, suppliers are less likely to perceive the emerging dependence gap as an opportunity for short-term exploitation.

Furthermore, suppliers often attribute their success to their ability to understand and satisfy buyer needs more effectively than competitors

(Johnston and Kristal, 2008). As a result, suppliers may place greater value on maintaining relational continuity than on appropriating short-term gains through opportunism. Moreover, reciprocity considerations tend to be particularly salient for suppliers, as sustained buyer participation is critical for securing future business opportunities (Kim et al., 2010). Higher buyer RSI may therefore be interpreted as a strong signal of long-term commitment, thus dampening incentives for conflict escalation even at relatively low levels of asymmetry. Overall, shedding light on these role-specific mechanisms from both the buyer and supplier perspectives constitutes one of the main theoretical contributions of our study, that is, the identification of how RSIA shapes relational conflict differently depending on which party undertakes greater relationship-specific investments. Specifically, while much of the OSCM literature on RSI in buyer–supplier relationships has adopted a one-sided perspective and often overlooked the role of RSIA, this research brings this issue to the forefront by examining its effects from both sides of the dyadic relationship.

Another important theoretical contribution of our research is that our findings extend existing work on ‘congruence’ (or incongruence) in interfirm relationships by investigating why directional asymmetry, rather than the extent of misalignment, is critical for understanding the boundary conditions of the negative performance implications of RSIA. In our subsequent hypotheses (H_2 and H_3), we postulated that the strength of two information governance mechanisms: distributive justice asymmetry (a notion of RIJ) and LJI, is related to the extent to which less-investing parties would perceive RSIA as a gesture of goodwill after a tipping point. Consistent with a directional asymmetry perspective, our findings suggest that the effectiveness and relevance of these governance mechanisms are role-specific, that is, they depend on which party benefits from the asymmetry, rather than on misalignment per se.

Our findings suggest that the importance, or preference, of the governance mechanism differs between the buyer and supplier firms. While RIJ is not significant in the context of supplier conflicts, LJI is not significant in the context of buyer conflicts. When it comes to buyer conflicts, our results supported H_2 that the presence of RIJ felt by buyers, as reflected by high distributive justice asymmetry in favor of the supplier, would flatten the curve, meaning that the buyers are unlikely to perceive RSIA beyond the threshold, as a sign of goodwill, suggesting that the previously observed recovery of initially increased relational conflict is less likely to happen (Panel B, Fig. 4). This means that an increase in RIJ would weaken the opportunism-suppressing properties of distributive justice, further diminishing the positive aspect of unilateral RSI. In other words, when the buyer firm feels that they are less fairly treated by their supply partner, then they will have less incentive to hold back on any negative behaviors when the supplier has invested more in RSI. Alternatively, since the buyers tend to assume that they own the right to appropriate more value from the relationship, an asymmetry in distributive justice (i.e., RIJ) tends to kindle latent dissatisfaction, thereby having a far-reaching effect on buyer conflicts (Brito and Miguel, 2017). Alternatively, the supplier's LJI did not have any significant moderating effect on the relationship between RSIA and buyer conflicts. This insignificant result suggests that the extent of trust signaled through the supplier's LJI is not as important as RIJ.

The results related to supplier conflicts differ significantly from those for buyer conflicts. In terms of relative justice, H_{2a} was not supported (Panel A, Fig. 4). This result aligns with the notion that suppliers tend to put more weight on the volume of business transactions while simultaneously accepting any RIJ in the relationship (Brito and Miguel, 2017). However, when it comes to LJI, there is a significant reduction in supplier conflicts when the buyer firm assumes a higher leadership role in joint improvement initiatives. At higher levels of LJI, we notice a shape reversal from an inverted U-shaped to a U-shaped effect. This shape reversal suggests that as the buyer takes more of the lead in joint initiatives, a greater reduction in supplier conflicts was observed, except in the presence of very high levels of RSIA due to increasing buyer investments. In other words, when the buyer firm takes a clear lead in joint

improvement initiatives, the supplier firm will tend to interpret this leadership as a positive signal and try to adjust its behavior accordingly, except in cases of very high RSIA.

At first glance, the results related to supplier conflicts appear to be rather unexpected because the literature postulates that increasing the dependency gap through unilateral RSI would increase opportunistically driven conflicts. The moderating effect of the buyer's LJI makes the implications of our results more profound and complex. While buyers are traditionally considered to hold more power in an exchange relationship, a unilateral RSI from the buyer signals their commitment to the relationship (Benton and Maloni, 2005; Lee et al., 2023; Nyaga et al., 2013; Zhao et al., 2008). In other words, such investment is a very strong signal to less-investing suppliers that they intend to maintain their relationships for mutual benefit. Additionally, if the buyer chooses to take a step further and lead in joint improvement initiatives, this further reduces the extent of supplier conflicts. Since joint improvement initiatives help partners understand the underlying processes, they can also be a strong signal from the buyer firm to build a trusting relationship (Nyaga et al., 2010). In such cases, a long-term commitment reflected through a unilateral RSI from the buyer is further cemented by the trust reflected through the buyer's LJI. Due to the simultaneous presence of commitment and trust, our findings suggest that suppliers would view such buyers as considerate of their welfare and disengage in opportunistic behaviors, such as conflicts (Benton and Maloni, 2005). However, based on the shape reversal that is evident in Fig. 4 (Panel C) at higher levels of LJI, it is also important to note that too high an asymmetry in such leadership roles, combined with high asymmetry in buyer RSI, could rather bring forth the dark side of trust (Villena et al., 2011). While congruence-based approaches in the inter-firm relations literature typically focus on the degree of alignment or distance between partners' perceptions (e.g., Lee et al., 2025; Liu et al., 2012), such approaches, however, are largely agnostic to which party holds the advantage. By contrast, our findings show that focusing on directional asymmetry provides new insights that would be overlooked by approaches centered solely on absolute distance, as buyers and suppliers interpret and respond to imbalance in systematically different ways.

5.2. Managerial implications

Our findings offer several implications for managers responsible for governing buyer–supplier relationships. First, managers should recognize that the implications of relationship-specific investment asymmetry depend on how such asymmetry is distributed across buyers and suppliers. When dependence asymmetry arises, for example, due to unavoidable unilateral increases in RSI, managers should be aware that their role as either a buyer or a supplier fundamentally shapes how their counterpart interprets and responds to that asymmetry, particularly in terms of opportunism-driven conflict.

When buyer RSI increases relative to supplier RSI, managers should not assume that supplier conflict will necessarily intensify despite the widening dependence gap. Instead, supplier responses depend on how buyers enact informal governance in the relationship. Our results indicate that supplier conflict is reduced when buyers accompany rising RSI with visible LJI initiatives. At the same time, managers should exercise caution, as excessive buyer investment combined with dominant leadership may generate perceptions of imbalance and reactivate conflict through the dark side of trust.

By contrast, when supplier RSI increases relative to buyer RSI, managers should anticipate a different conflict trajectory. At low to moderate levels of RSIA, buyers are more likely to respond opportunistically, leading to an initial rise in conflict. In such situations, careful management of distributive justice perceptions becomes critical. Our findings indicate that when distributive justice asymmetry favors suppliers, meaning that buyers perceive outcome allocations as disproportionately benefiting suppliers, buyers are less likely to reinterpret high supplier RSI as a signal of goodwill, thereby weakening the conflict-

reducing effects of supplier investment.

5.3. Future research directions

While our study provides important insights into the complex relationships between RSI, conflicts, and informal governance, the study contains the following limitations. First, the data used in this study are collected exclusively from Indian automotive manufacturing firms. Considering that the majority of the constructs of this research can be influenced by the informal institutional environments of countries, such as national culture, this geographical and industrial focus may limit the generalizability of the findings to other contexts. Future research should explore RSIA and its effects in different countries and industries to understand how informal institutional factors would influence these dynamics. Second, while RSI could also connect to broader ethical considerations in global supply chains, given the scope of our study, we focused predominantly on the ensuing negative opportunistic behavior – relational conflict – as theorized in TCE. Therefore, we position ethical implications as a promising avenue for future research studying the effect of RSIA. Third, our study primarily focused on RIJ and LJJI as measures of informal governance mechanisms. However, other means of informal governance, such as social capital and relational norms, could also play significant roles in managing RSIA. Future studies should investigate the impact of these additional informal governance mechanisms. Fourth, the current study considered relative distributive justice only. However, the literature suggests that procedural and interactional justice also matter in reducing opportunism and fostering positive relational outcomes. Future research should include these forms of justice to assess their relative importance and interplay in mitigating conflicts arising from RSIA. Finally, though we discuss opportunistic behavior in buyer-supplier relationships, when it comes to the outcome variable, we focused specifically on relational conflicts. Therefore, we encourage future studies to test not only the effects on buyer and supplier opportunism but also ethical behavior in buyer-supplier relationships.

CRediT authorship contribution statement

Antony Paulraj: Conceptualization, Formal analysis, Methodology, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **Byung-Gak Son:** Conceptualization, Validation, Visualization, Writing – original draft, Writing – review & editing. **Nachiappan Subramanian:** Data curation, Project administration, Supervision, Writing – original draft, Writing – review & editing.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijpe.2026.110144>.

Data availability

The data that has been used is confidential.

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