



# Governing buyer–supplier relationships through transactional and relational mechanisms: Evidence from China

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## ABSTRACT

Building on economic and social exchange theories, this study investigates the different roles transactional and relational mechanisms have in hindering opportunism and improving relationship performance in an emerging economy. Our study applied to manufacturer–distributor dyads in China and used matched survey data (225 paired sample firms) to test our hypotheses. Our hierarchical multivariate regression and semipartial correlation analyses suggest that transactional mechanisms are more effective in restraining opportunism while relational mechanisms are more powerful in improving relationship performance. This performance is improved more significantly when both contracts and relational norms are used jointly than when used separately. Likewise, opportunism is curbed more effectively when both contracts and trust are used jointly than when used individually.

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## 1. Introduction

Restraining opportunism and improving relationship performance are central to any repeated economic exchange, such as alliances or partnerships. Opportunism is defined by Williamson as self-interest seeking with guile (1985). It is commonly held that governing interorganizational exchanges entails both transactional and relational mechanisms (Heide, 1994; Jap and Anderson, 2003; Poppo and Zenger, 2002). Transactional mechanisms are those that govern interparty exchanges, avoiding uncertainties through legal stipulations and economic incentive systems. Conversely, relational mechanisms emphasize inherent and moral control, governing exchanges through consistent goals and cooperative atmospheres. Previous research has documented that transactional and relational

mechanisms are both important in mitigating opportunism and improving relationship performance for participating organizations (Barclay and Brock, 1997; Dahlstrom and Nygaard, 1999; Cannon et al., 2000; Cavusgil et al., 2004; Heide and John, 1992; Jap and Ganesan, 2000; Lusch and Brown, 1996; Poppo and Zenger, 2002; Wuyts and Geyskens, 2005). However, the relative effectiveness of transactional and relational mechanisms in curtailing opportunism and enhancing relationship performance has yet to be addressed. Empirical comparison within a unified analysis of the two effects side by side will help us understand the relative contribution of varying mechanisms to the governing of buyer–supplier relationships.

Research on interfirm exchange governance argues that participating firms should employ multiple mechanisms for governing interorganizational relationships. However, scholars have opposing views on whether transactional and relational mechanisms act as complementary (Poppo and Zenger, 2002) or substitutive forces (Wuyts and Geyskens, 2005). An interesting question is whether the joint use of transactional and relational mechanisms is altogether more effective in curbing opportunism and fostering relationship performance than individual use. If

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the joint effect is confirmed, it follows that there will be some additional or synergetic effect of using relational and transactional mechanisms together.

This study intends to address the questions above. Since the governance effectiveness of transactional and relational mechanisms is not context-free (Jap and Anderson, 2003), we investigate these questions in a specific context—namely, manufacturer–distributor channel partnerships in China, a leading emerging market and a primary producer of consumer products for the world. Most previous studies have investigated only the single party perception and assume that this perception is mutually shared across the relationship, but some recent studies caution that this may not be the case for all relationships (Kim, 2000; Sollner, 1999; Zaheer and Zaheer, 2006). To fill this void, we conducted a survey of 225 paired manufacturers (suppliers) and distributors (buyers) in China's household appliance industry to verify our premise and test our hypotheses. Our analysis generally supports our arguments that (1) transactional mechanisms are relatively more effective in curtailing opportunism while relational mechanisms are more effective in enhancing relationship performance and (2) there is a significant and positive joint effect on restraining opportunism and nourishing cooperation when transactional and relational mechanisms are employed together.

## 2. Theory and hypotheses

### 2.1. Theoretical background

Governance is essential to the stability of buyer–supplier relationships (Benton and Maloni, 2005; Carr and Pearson, 1999). In such relationships, governance involves actions or mechanisms by which both parties behave, leading to the fulfillment of joint objectives. There are always some elements of private incentive in such exchanges, resulting in the need for control (Gaski, 1986; Heide, 1994; Jap and Anderson, 2003; Provan and Skinner, 1989). Buyers and suppliers are often uncertain whether their expectations will be fulfilled and whether the other party will act cooperatively when bargaining pressures rise. Goal differences, ambiguous contracts, opportunistic behaviors, differences in operational routines, and unexpected market changes are portrayed as endogenous factors driving conflict and as underlying reasons that give rise to governance in buyer–supplier partnerships (Birnberg, 1998; Jap and Ganesan, 2000; Mohr and Spekman, 1994). Governance is pivotal to the relationship development between supply chain members.

In buyer–supplier dyads, as in other types of inter-organizational exchanges, governance is realized through both transactional and relational mechanisms (Aulakh et al., 1996; Brown et al., 1995; Heide and John, 1992; Jap and Ganesan, 2000). Transactional mechanisms are manifested in jointly stipulated contractual clauses (contract hereafter) and bilateral transaction-specific investments (TS investment hereafter) (Brown et al., 2000; Heide and John, 1992; Gundlach et al., 1995; Williamson, 1985). According to transaction cost economics, transactional mechanisms are derived from economic rationality and emphasize govern-

ing relationships through monitoring and incentive-based structures. A well-specified contract is viewed as the major instrument that protects specific investments from opportunistic behavior (Williamson, 1985). It stipulates the rights and obligations of both parties through formal rules, terms and procedures. It also explicitly states how various future situations will be handled (i.e., product responsibility, trading procedure, penalties for noncompliance, etc.). Williamson (1999, p. 1090) suggests that “credible contracting is very much an exercise in farsighted contracting, whereby the parties look ahead, recognize hazards, and devise hazard mitigating responses—thereby to realize mutual gain.” Although contracts cannot completely suppress opportunism, buyers and suppliers may mitigate ex post opportunism and investment distortions by using more complete agreements (Heide, 1994; Lusch and Brown, 1996; Wathne and Heide, 2000).

Meanwhile, transaction-specific investment is an important incentive tool used in monitoring relationships (Wathne and Heide, 2000). Bilateral TS investments will lose considerable value if the focal relationship of both parties ends prematurely (Lohtia et al., 1994). It is very difficult for parties to redeploy TS investments in a particular buyer–supplier relationship elsewhere, thus inhibiting the parties' opportunistic behavior in the current transaction. Such investments may be tangible (e.g., a manufacturing facility, a specific tool or machine) or intangible (e.g., tacit knowledge, a specific technology or capability) (Jap and Anderson, 2003). It guides buyer–supplier exchanges and reduces uncertainty or conflict by providing relationship-bound economic incentives to continue vertical partnerships (Kotabe et al., 2003; Mudambi and Helper, 1998). TS investments discourage an individual party's private incentive seeking. Moreover, it makes one party's behavior more observable to the other, promoting accountability. Contracts and TS investments are supplementary because contracts specify important conditions and measures of governance that are not covered in TS investments while TS investments furnish extra economic incentives for ongoing relationships, something that contracts cannot deliver. Luo (2002) demonstrates that contracts and TS investments are particularly complementary in emerging markets where structural ordering through transaction-specific incentives compensates the relatively weaker contractual governance.

According to social exchange theory, relational mechanisms focus on the roles of social interactions and socially embedded relationships in economic activities (Granovetter, 1985). Relational mechanisms have been recently recognized as useful instruments to control opportunism and nourish cooperation in buyer–supplier channels (Gundlach et al., 1995; Heide and John, 1992; Kim, 2000). In long-term buyer–supplier dyads, TS investments are gradually embedded in social relations. Social exchange theorists suggest that individual opportunistic desire is curbed by the prospect of ostracism by the partner when relational mechanisms support courtesy between them (Levinthal and Fichman, 1988). Relational mechanisms govern buyer–supplier exchanges because the embeddedness of social connections generates standards of expected behavior that obviate the need for, and are superior to,

purely authoritative relations in discouraging opportunism and malfeasance (Granovetter, 1985). These social bonds can lead to group norms that increase the commitment of the parties to maintaining a cooperative relationship (Seabright et al., 1992).

It is widely agreed that relational mechanisms in interorganizational cooperation encompass relational norms and trust (Anderson and Narus, 1990; Heide and John, 1992; Luo, 2007). In buyer–supplier dyads, relational norms refer to behavioral expectations that are partially shared by a group of decision makers and directed toward collective or group goals (Gibbs, 1981; Macneil, 1980; Moch and Seashore, 1981; Thibaut and Kelley, 1959). In this paper, relational norms mainly involve informational exchange, solidarity and participation. The compliance with these norms in buyer–supplier dyads is often manifested in the extent to which the buyer and the supplier openly exchange useful information, widely share ideas or initiatives, solve their conflicts and problems through joint consultations and discussions and participate in joint decision making (Macneil, 1980; Heide and John, 1992; Jap and Ganesan, 2000).<sup>3</sup>

Trust, on the other hand, emphasizes the exchange's cooperative atmosphere. Trust is defined as the confidence or belief that the exchange partner possesses about the honesty and benevolence of other partners (Kumar et al., 1995). Relational norms and trust govern the buyer–supplier relationship by establishing a more congenial, socially constructed environment that in turn promotes and nourishes economic exchanges. Both relational norms and trust tend to increase as the relationship endures (Levinthal and Fichman, 1988). These norms and trust encourage the exploitation of relationship-specific opportunities. Consequently, the parties can benefit from the relationship through enhanced attachment, reduced transaction cost and coincided responses (Seabright et al., 1992).

Both transactional and relational mechanisms are expected to undercut opportunism and enhance relational performance, the two outcomes appraised in this study. Opportunism includes such behaviors as lying and cheating, not fully disclosing information or violating the spirit of an agreement (John, 1984). Opportunism increases transaction costs and hinders the development of trust and commitment (Gassenheimer et al., 1996; Joshi and Arnold, 1997). In this study, relationship performance is defined as an economic outcome of a buyer–supplier partnership in the form of increased sales volume, market share, discounts and marketing support from the parti-

cular relationship (Noordewier et al., 1990; Raven et al., 1994).

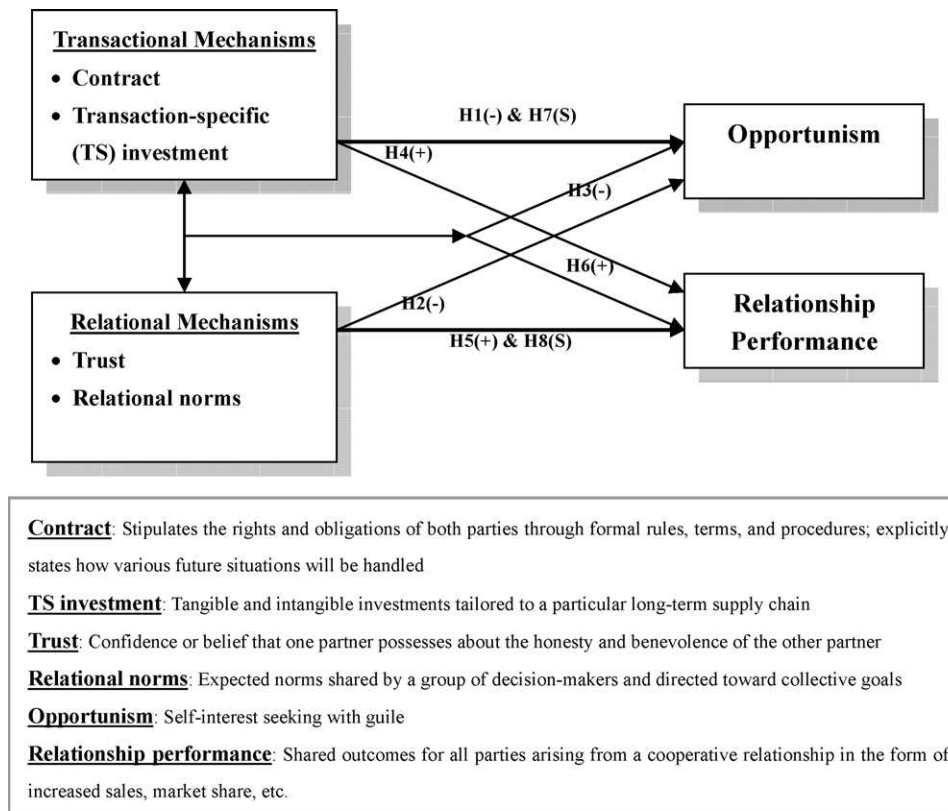
Transactional mechanisms generally provide a legal and institutional framework within which relational mechanisms can perform while relational mechanisms redress the deficiency of legal and institutional ordering in a socially confined economic structure. As such, we argue that there will be some complementary effect on mitigating opportunism and improving relational performance when both transactional and relational mechanisms are jointly used. Fig. 1 schematically outlines our theoretical model and related hypotheses.

## 2.2. Governance mechanisms and opportunism

As a transactional mechanism, a formal contract is a major tool for safeguarding transaction-specific assets against opportunism (Williamson, 1985). By making the relationship contractually explicit, clear and mutual expectations are stipulated before the exchange and precise behavioral boundaries are pre-specified (Parkhe, 1993). Contracts propose the special behavior pattern (Rousseau, 1995) and specify duties of both parties, along with penalties for agreement violation. It can prevent opportunistic behavior through legal forces. Another transactional mechanism, bilateral TS investments, can also hinder both parties' opportunism. When both sides invest in an exchange relationship, the investments serve as mutual hostages, their credible commitments to the relationship (Anderson and Weitz, 1992; Williamson, 1983). These investments increase partners' interdependence on each other and motivate both parties to continue the relationship (Jap and Anderson, 2003). Bilateral investments are difficult to redeploy outside the specific exchange relationship. Once a firm behaves opportunistically, it may lead to relationship termination and the forfeiture of the investments' actual value (Brown et al., 2000). Thus, by making bilateral specific investments, both parties have an incentive to maintain and continue the relationship until the value of its investments is recouped.

As a relational mechanism, relational norms restrict partners' opportunism through shared norms and values (Brown et al., 2000). These norms guide reciprocal exchanges and individual conduct (Gundlach et al., 1995). Developing solidarity shifts the focus away from self-centered behavior towards behavior that fosters unity arising from common responsibilities and interests (Rokkan et al., 2003). Information exchange allows both sides to have symmetric information through communication, promoting harmonization of conflict and honesty within the exchange. Participation enables exchange partners to share common decisions and establish or reestablish the goals of the relationship (Rokkan et al., 2003). These benefits help restrain the buyer's or seller's opportunism. Trust may have a similar effect as well. The more the exchange partners trust each other, the more they feel assured that the other firm will cooperate in good faith and care for their partnership rather than behave opportunistically to exploit it (Dyer and Chu, 2003). If both parties trust each other, they are unlikely to engage in opportunism because it would otherwise result in the loss

<sup>3</sup> Previous studies identified a number of relational norms according to various objectives and contexts, and all of them investigated the norms from one-side perspective. Because our data were collected from both manufacturers and distributors, we needed to find the norms that were suitable for both sides. We thus interviewed, in our pre-survey field study, twenty paired distributors and manufacturers, asking them about specific relational norms (among all the norms previously identified by other studies) that are particularly relevant to them. These paired interviewees commonly and consistently regarded solidarity, information exchange, and participation as the norms relevant to their relationship. No other dimensions or sub-norms received such consistent agreement.



Note: H7(S) hypothesizes that transactional mechanisms are more effective than relational mechanisms in curbing opportunism, whereas H8(S) predicts that relational mechanisms are more effective in improving relationship performance. H3 and H6 deal with the interaction effects on opportunism and performance.

Fig. 1. Theoretical model and hypotheses.

of long-term benefits that are inherent to the relationship (Cavusgil et al., 2004).

When transactional and relational mechanisms are used jointly (i.e., both are used together at the same time) in a focal buyer–supplier relationship, we anticipate greater benefits than if used separately. Due to the lack of explicit statements and binding constraints, relational mechanisms have limitations in curbing partners' opportunism (Poppo and Zenger, 2002). Through clearly specifying the expectations and punishments against opportunism, contracts become a necessary complement to relational mechanisms (Wuyts and Geyskens, 2005). Transaction-specific investments also provide an economic constraint through a mutual pledge to complement relational mechanisms. Although transaction-specific investments offer the economic constraint through a mutual pledge, certain contents and context may prove impossible to foresee, no matter how inclusive or comprehensive a contract strives to be (Macneil, 1978). This is even more apparent for buyer–supplier relationships in emerging markets like China, where competitive and institutional environments are changing so drastically and rapidly that no contracts can reasonably stipulate all contingencies (Luo, 2007). Once trust and relational norms are established, these firms may be reluctant to behave opportunistically even if they recognize the benefits from

violating contracts and damaging TS investments. Because disregarding and violating agreed upon terms or damaging TS investments can seriously damage the reputation of not only the focal organization but also its executives and managers (Hwang, 1987), such reputation damage can spread quickly through interpersonal and interorganizational networks in society (Luo, 2000). Through development of relational norms and trust, exchange partners cooperate to offset the weaknesses of contracts (Luo, 2007; Poppo and Zenger, 2002). Thus, transactional mechanisms will be more effective when relational mechanisms come into play together. Based on the above discussion, we hypothesize:

**H1.** There is a negative link between the use of transactional mechanisms, including (a) contract and (b) transaction-specific investments, and opportunism in buyer–supplier dyads.

**H2.** There is a negative link between the use of relational mechanisms, including (a) relational norms and (b) trust, and opportunism in buyer–supplier dyads.

**H3.** Mitigation of opportunism is stronger when transactional and relational mechanisms are used jointly than when used separately.

### 2.3. Governance mechanisms and relationship performance

We expect that transaction and relational mechanisms also exert influence on relationship performance (e.g., sales volume, customer pool, market share growth, profitability) in the eyes of both parties. Contracts offer a legal and institutional framework that guides task fulfillment and monitors the ongoing exchange between buyers and suppliers. One cannot imagine that relationship performance will be satisfactory to buyer or supplier in a highly volatile market, such as China, without contractual guidance. Although it is impossible to have a complete contract governing buyer–supplier exchanges in such a dynamic and uncertain market, the contractual mechanism at least furnishes binding principles, general procedures and major responsibilities for all parties involved (Luo, 2007). Lusch and Brown (1996) and Cannon et al. (2000) report that detailed contracts can lead to higher marketing-related performance in advanced markets. Such a positive association, we believe, also exists in buyer–supplier dyads in an emerging market. Similarly, transaction-specific investments (e.g., investments in new materials, processes and human resources for the relationship) are likely to increase mutual dependence and reciprocal commitment in the vertical partnership (Heide and Miner, 1992; Parkhe, 1993). Superior relationships with other channel members are an important asset that is valuable and sustainable, while difficult to imitate, redeploy or substitute, thus serving as the firm's competitive advantage (Barney and Hansen, 1994; Heide, 1994). TS investments encourage the exploitation of relation-specific opportunities deriving from such strategic assets. For instance, Ghosh and John (1999) find that relationship investments in buyer–supplier channels have important value-creation properties in the form of efficiency improvement, cost saving and profit enhancement.

Relational mechanisms are likely to have a direct effect on relational performance as well. First, with the development of relational norms, buyers and suppliers will be better able to formulate their reciprocal expectations and enhance their mutual adaptability. When unforeseeable events arise, established relational norms will help the partners achieve agreements, problem solve quickly and accomplish performance targets. Information sharing and solidarity between parties facilitates anticipation of each others' needs and promotes cooperation and coordination (Lusch and Brown, 1996). Participation encourages adaptation and understanding. Such norms also nurture the pooling and utilization of talents, skills and resources from both parties to achieve an advantageous position in a competitive environment and improve sales for both buyer and supplier in a vertical partnership. At the same time, trust can make dyadic partners open to each other, making the buyer–supplier relationship more accountable, stable and durable (Kumar et al., 1995), which subsequently improves relational performance. Once trust is established, suppliers may provide buyers with higher discounts, invest more in production technology and innovation and prioritize delivery to these buyers. Buyers, meanwhile, may offer greater support to suppliers through fortified efforts in advertising, feedback, marketing, distribution and services.

Some synergetic effects may exist for relational performance in an emerging market when transactional and relational mechanisms are simultaneously in place. We said earlier that transactional mechanisms provide an institutional framework for relational mechanisms, while relational mechanisms offer stimulations for executing transactional mechanisms. In a setting where hazards are severe, the combination of transactional and relational safeguards may deliver greater exchange payoffs than transactional or relational governance in isolation. Because additional benefits are likely to emerge from an appropriate configuration between contractual incentive design and norm or trust building, we propose that these together will lead to better relational performance in the eyes of chain members. We conjecture that transactional mechanisms serve as an ex ante governance monitoring ongoing buyer–supplier exchanges and facilitate the contribution of relational mechanisms to relational performance. On the other hand, relational mechanisms are not automatic because it is not in the interest of each player to behave cooperatively if there are no guarantees that the other player will reciprocate said behavior (Parkhe, 1993). The value of relational mechanisms can be maximized by altering the incentive and contractual structures such that the behavior maximizing individual payoffs also maximizes joint payoffs. Transactional mechanisms provide an ex ante system ensuring interfirm reciprocity and an obligatory framework restraining private incentive seeking. It also makes one party's behavior more observable to the other, escalating trust-building and reciprocal forbearance. Relational mechanisms can be more effective and efficient when chain members are clear regarding their respective rights, benefits and responsibilities in accordance with the plans, policies and strategies of the partnership. In light of the above, we propose:

**H4.** There is a positive link between the use of transactional mechanisms, including (a) contract and (b) transaction-specific investments, and relational performance in buyer–supplier dyads.

**H5.** There is a positive link between the use of relational mechanisms, including (a) relational norms and (b) trust, and relational performance in buyer–supplier dyads.

**H6.** Improvement of relational performance is stronger when transactional and relational mechanisms are used jointly than when used separately.

### 2.4. Relative importance of transactional and relational mechanisms

Although both transactional and relational mechanisms are hypothesized to inhibit opportunism, we anticipate that transactional mechanisms are relatively more effective than relational mechanisms in curtailing opportunism for the following reasons: first, transactional mechanisms are more effective than relational ones in providing explicit descriptions and binding guidance controlling behavior of buyers and suppliers. If the duties of the parties are formalized ex ante through contracts, it can narrow the scope of ex post

actions formally. Contracts are also superior to relational mechanisms in offering a formal framework through which to make joint decisions, govern collective actions, and solve possible conflicts (Poppo and Zenger, 2002).

Second, compared to transactional mechanisms, relational mechanisms have limits on hindering opportunism. For instance, too much trust is as bad as too little trust because one party's high level of trust in its partner will lower its commitment to monitoring and may even be exploited by its partners (Jeffries and Reed, 2000). Moreover, it is less viable to constrain opportunism through social sanction than through contractual punishment (Jap and Ganesan, 2000). Through bilaterally designed and committed incentive structures, TS investments may also be more forceful than relational norms in governing repeated exchanges (Williamson, 1983). An individual party would lose its economic benefits from TS investments if it pursued only its private gains at the expense of collective gains (Luo, 2007).

Third, although contracts may lack flexibility when unforeseen disturbances arise, the level of contractual completeness is a good indicator of contracting parties' intention for ongoing cooperation. This is especially the case for buyers and suppliers in emerging markets. In those economically transformational societies, firms begin to write more explicitly and include more terms in commercial agreements or contracts when they believe these transactions are important to them (Child and Tse, 2001). Contracts and transaction-specific investments mirror exchange parties' seriousness and problem-solving effort *ex ante* for subsequent joint activities (Carson et al., 2006). As Child and Tse (2001) and Luo (2002) stated, most emerging markets are undergoing drastic development of institutional and legal systems, including commercial and contractual laws. This creates a nourishing environment in which buyer–supplier contractual and incentive arrangements take effect. Accordingly, we postulate:

**H7.** Transactional mechanisms (contract and TS investments) are more effective than relational mechanisms (relational norms and trust) in curbing opportunism.

On the other hand, relational mechanisms are likely to be more effective than transactional mechanisms in improving relationship performance. Contributions of transactional mechanisms to relationship performance are based on explicit rules and economic bondage. By clearly spelling out the 'rules of the game' and creating economic incentives, contracts and transaction-specific investments create a structural system, stipulating mutual goals and expectations to which exchange parties must comply. Thus, transactional mechanisms govern buyer–supplier relationships through contractual compliance or profit motivation from specific investments. This compliance, however, has limits for relational performance. Transactional mechanisms constrain a buyer's or supplier's motivation to make unilateral and joint commitments that are outside the limits of a contract. This can be a substantial deficiency for buyer–supplier partnerships in emerging markets where many unexpected contingencies commonly arise after the contract is signed. Highly stipulated contracts may lead to strategic rigidity in a constantly

changing yet promising emerging market, thus demotivating or limiting a partner's initiatives and commitments for seeking and gaining from new business opportunities (Bernheim and Whinston, 1998).

Contrarily, relational mechanisms will promote firms to take initiatives in value creation activities beyond what a contract has specified. Relational mechanisms are more adaptive to changing environments because of their flexibility. In emerging markets where national economies grow rapidly in a context of immense market uncertainty and regulatory variability, relational norms and mutual trust provide supply chain partners with much needed flexibility. With superior relational mechanisms in place, the partners are able to withstand environmental uncertainties, communicate more effectively and deal with unforeseeable problems collectively (Paulraj et al., 2008; Young-Ybarra and Wiersema, 1999). In a highly volatile market, relational mechanisms furnish strategic flexibility and organizational agility for chain partners and are hence more conducive to success in this environment. Under the superior governance of relational mechanisms, firms will take more initiative in cooperating out of contracts and be more willing to seize emerging market opportunities. When trust and behavioral norms are developed, partners are more effective in improving communication, information flow, knowledge sharing and solidarity (Brown et al., 1983; Hult et al., 2004). These benefits are critical to relational performance and represent something transactional mechanisms cannot generate. We finally predict:

**H8.** Relational mechanisms (relational norms and trust) are more effective than transactional mechanisms (contract and TS investments) in improving relationship performance.

### 3. Methods

#### 3.1. Data collection

To test the above hypotheses, we used the matched survey data from both sides of distributors (buyers) and manufacturers (suppliers) in China's household appliance industry from 2004 to 2005. China is an ideal setting, typifying an emerging market because of its population, fast-growing economy, increased liberalization of most economic sectors and its role as a global manufacturing center and primary location for international outsourcing. Using sample firms from the same industry helps rule out industry-level differences in dyadic links and practices in buyer–supplier relationships. The household appliance industry represents one of the most developed and established industries in China. It has both world-class manufacturers (e.g., Haier, TCL, Changhong) and distributors (e.g., Walmart, Suning, Gome) and has contributed more than one-tenth of global production each year since 1996 (CBIN, 1996). Geographically, our survey comprises sample firms nationwide, covering all regions and provinces in China.

We designed paired questionnaires for distributors and manufacturers. The English version was first developed and then translated into Chinese and then back-translated into English, according to the steps suggested by Brislin

(1970) and Sekaran (1983). The back-translated English version was checked against the original English version.<sup>4</sup> Some questions were reworded to improve the accuracy of the translation. We conducted a pilot test with 16 randomly selected distributors and their designated manufacturers by semi-structured, in-depth interviews and then received their completed questionnaires. We then sent out a research team to go through every question with them to ensure that they had understood them correctly. Some final refinement of the questionnaire was made based on their feedback.

In collecting the dyadic data, we first received the list of nationwide distributors in the industry through the largest and most prestigious household appliance manufacturer in China (3rd largest in the world) who also requested that its distributors, via letters and phone calls, participate in our survey. We followed up by mailing coded surveys to 900 distributors on the list who were asked to describe their relationship with the major manufacturer (other than the above largest manufacturer). With three-round reminders (calls, travels, emails and re-mailing), we received 314 returned questionnaires of which 251 were complete.

The paired questionnaires (2nd set) were then sent to the named manufacturers designated by the above distributors with whom these manufacturers were asked to assess their relationship. With the same follow-up and reminder measures, we received 225 completed questionnaires from 251 manufacturers. These 225 paired firms is our final sample size. Appendix A shows the descriptive statistics of sample distributors and manufacturers along their major traits, such as age, size, products, location, channel history, ownership type and informant profile.

In both surveys, we made several attempts to ensure that the informants were sufficiently knowledgeable to respond to the items. First, 74.5% of distributor informants and 73.6% of manufacturer informants were senior managers responsible for the relationship with the rest being staff members who directly dealt with the business of the other party. The informants have been in their current position for an average of 4.7 years for distributors and 3.5 years for manufacturers. We also inquired about the extent to which an informant was knowledgeable about the overall pair relationship using a 5-point Likert scale. The mean was 4.25 (S.D. = 0.62) for distributors and 4.23 (S.D. = 0.56) for manufacturers.

Our paired survey from buyers and suppliers significantly reduces the single-side, single-informant related common method variance bias. Before computing the average score from both sides, we also took steps recommended by Podsakoff and Organ (1986) and conducted a global factor analysis on items related to all

predicting and criterion variables for each side. No single factor emerges from the analysis and no one factor accounts for most of the covariance for all predicting and criterion variables, confirming the absence of the common method bias. In order to minimize the social desirability bias, we maintained the full anonymity for all informants throughout the survey process. We also followed the measures suggested by Fisher (1993) and used more specific and less direct questioning to reduce the social desirability bias. In our cover letter, we informed the respondents that the survey was designed for research only and that there were no right or wrong answers to our questions. Finally, we checked the non-response bias. We randomly chose from each set 50 firms that had not replied to the questionnaire and asked for information concerning firm attributes such as size, sales, location, ownership and relationship length. All *t*-statistics of comparison between responding and non-responding firms were non-significant.

### 3.2. Measurement and validity

Multi-item scales were used to operationalize all the variables except for relationship duration (see Table 1). We obtained these items largely from past research, fine-tuning some of them to suit this study's context. A 7-point Likert scale with end points of "strongly disagree" and "strongly agree" was used to measure the items. Except for relationship duration, which was collected only from the buyers, data for all variables was collected from both buyers and suppliers and arithmetically averaged to reach the final score for each.

Among transactional mechanisms, contract is a legal bond which specifies the roles and obligations of parties with detailed and formal operational procedures. Three items used to measure contract were obtained from Cannon et al. (2000) and Jap and Ganesan (2000). Transaction-specific investments refer to the investments tailored to a particular company or value-chain partner that are highly specific and continual investments. Based on Anderson and Weitz (1992) and our field interviews, four items were developed to measure this construct. As a relational mechanism, relational norms involve expectations about behaviors that are partially shared by a group of decision makers and directed toward collective or group goals (Gibbs, 1981; Macneil, 1980; Thibaut and Kelley, 1959). Adapted from Jap and Ganesan (2000), the scale items involve information exchange, solidarity and participation norms. Trust concerns the extent to which the firm believes that its exchange partner is honest and/or benevolent (Kumar et al., 1995). Five items that come from Kumar et al. (1995) were used to measure this construct.

Opportunism is measured by four items similar to Rokkan et al. (2003), who used several items to measure a party's behaviors in taking advantage of holes in the contracts, breaching informal agreements, breaking promises and lying to maximize its own benefits. Relationship performance is a firm's economic outcome that comes from an exchange relationship with its partner. We adopt Geyskens and Steenkamp's (2000) scales and items to measure the informants' evaluation of economic outcomes such as sales volume, margins, etc.

<sup>4</sup> Our questionnaire was originally designed in English and then translated into Chinese by three doctorate business students competent in both languages and with substantial research experience in China. To avoid cultural bias and ensure validity, the Chinese version was then back-translated into English by a different group of (three) doctorate students well versed in both languages. No apparent anomaly was found between the original the back-translated versions.

**Table 1**  
Construct reliability and validity.

	Cronbach $\alpha$			Factor loading			CR			AVE		
	B	S	BS	B	S	BS	B	S	BS	B	S	BS
<b>Contract</b>	0.84	0.70	0.77				0.91	0.83	0.87	0.76	0.62	0.69
C1: Our relationship with this <i>supplier</i> (buyer) is governed primarily by written contracts				0.86	0.81	0.83						
C2: We have formal agreements that detail the obligations and rights of both parties				0.89	0.71	0.82						
C3: Over time we have developed ways of doing things with this <i>supplier</i> (buyer) that never need to be expressed contractually or formally (Reverse coded)				0.87	0.83	0.85						
<b>Transaction-specific investment</b>	0.75	0.71	0.72				0.85	0.83	0.83	0.59	0.55	0.56
TS1: We have made significant investments in training this <i>supplier's</i> (buyer's) employees				0.90	0.82	0.85						
TS2: We do a lot to help this <i>supplier</i> (buyer) become a more efficient and effective <i>supplier</i> (buyer), such as providing functional and management training				0.79	0.79	0.77						
TS3: We specifically designed and developed programs to enhance this <i>supplier's</i> (buyer's) overall business				0.74	0.68	0.71						
TS4: We have made a substantial investment in shipping and storage (distribution) facilities tailored for the <i>supplier</i> (buyer)				0.60	0.65	0.64						
<b>Relational norms</b>	0.80	0.72	0.77				0.88	0.83	0.85	0.64	0.55	0.59
RN1: In this relationship, both parties expect that any information that may help the other party will be provided to that party				0.74	0.75	0.77						
RN2: In this relationship, ideas or initiatives of both sides are widely shared and welcomed via open communication				0.84	0.71	0.80						
RN3: In this relationship, problems or conflicts are expected by both parties to be solved through joint consultations and discussions				0.82	0.77	0.78						
RN4: In this relationship, both parties play a healthy role in the other party's decisions via mutual understanding and socialization				0.79	0.73	0.73						
<b>Trust</b>	0.80	0.80	0.79				0.86	0.86	0.86	0.56	0.56	0.55
IT1: We believe in the <i>supplier</i> (buyer) because it is sincere				0.70	0.65	0.67						
IT2: Though the circumstances change, we believe that the <i>supplier</i> (buyer) will be ready and willing to offer us assistance and support				0.73	0.76	0.74						
IT3: When making important decisions, the <i>supplier</i> (buyer) is concerned about our welfare or interests				0.83	0.81	0.81						
IT4: We can count that the <i>supplier</i> (buyer)'s future decisions and actions will not adversely affect us				0.73	0.73	0.73						
IT5: When it comes to things that are important to us, we can depend on the <i>supplier's</i> (buyer's) support				0.75	0.78	0.75						
<b>Opportunism</b>	0.89	0.85	0.88				0.93	0.90	0.92	0.76	0.69	0.73
O1: This <i>supplier</i> (buyer) sometimes lies about certain things in order to protect its interests				0.88	0.78	0.84						
O2: This <i>supplier</i> (buyer) often fails to deliver promises, as described in the contract, for its own interests				0.86	0.87	0.86						
O3: This <i>supplier</i> (buyer) sometimes breaches informal agreements between our companies to maximize its own benefits				0.88	0.85	0.87						
O4: This <i>supplier</i> (buyer) often takes advantage of "holes" in our contract to enhance its own interests				0.87	0.81	0.85						
<b>Relationship performance</b>	0.81	0.83	0.80				0.88	0.88	0.87	0.59	0.60	0.57
RP1: Our relationship with this <i>supplier</i> (buyer) has provided us with a dominant and profitable market position in our sales area				0.72	0.76	0.72						
RP2: My relationship with this <i>supplier</i> (buyer) is very attractive with respect to discounts				0.64	0.73	0.67						

Table 1 (Continued)

	Cronbach $\alpha$			Factor loading			CR			AVE		
	B	S	BS	B	S	BS	B	S	BS	B	S	BS
RP3: We are very pleased to do business with this <i>supplier</i> (buyer) since it improves our customer base or satisfaction				0.85	0.79	0.83						
RP4: The marketing policy of this <i>supplier</i> (buyer) helps us get our work done effectively				0.84	0.81	0.81						
RP5: This <i>supplier</i> (buyer) provides us with high quality support in continuous marketing and selling				0.76	0.77	0.72						
Transactional complexity	0.70	0.57	0.61				0.83	0.78	0.78	0.62	0.54	0.54
TC1: It takes long time for negotiations on every agreement or common comprehension				0.72	0.75	0.74						
TC2: Agreements need several revisions when enforced after being signed				0.87	0.71	0.82						
TC3: Contracts are renegotiated and re-signed several times for sophisticated areas and clauses				0.76	0.74	0.64						
Personal relationship	0.79	0.75	0.77				0.87	0.84	0.86	0.62	0.58	0.60
PT1: Leaders of both sides always invite each other to participate in various activities for socialization				0.73	0.69	0.71						
PT2: Our leaders and the leaders of our partner may call on each other sometimes				0.83	0.77	0.80						
PT3: Our staff and the staff of our partner often communicate with each other				0.82	0.81	0.81						
PT4: Our staff and the staff of our partner do personal favors to each other				0.77	0.76	0.77						

Notes: (1) B stands for buyer, S connotes supplier, BS represents dyadic parties. (2) CR refers to composite reliability, while AVE refers to average variance extracted.

### 3.3. Control variables

Because the dependent variables in this study may be influenced by other factors outside this model, three additional variables of less interest were incorporated. They include transactional complexity, personal relationship and relationship duration. Transactional complexity refers to the intricate nature of the cooperation process and is measured by three items in this study (see Table 1). Personal relationship involves personal ties between managers and between staff of both parties and is measured by the four items reflecting such ties. Finally, relationship duration refers to the time length of the exchange relationship between the distributor and manufacturer, which was measured by a single item, i.e., the number of years both sides have been involved in the exchange relationship.

We made several efforts to check the reliability and validity of all constructs used for this study. We conducted

exploratory factor analyses using both orthogonal and oblique rotations to ensure high loadings on hypothesized factors and low loadings on cross-loadings in both supplier and buyer data sets. All the items loaded onto the expected factors without significant cross-loadings. Cronbach  $\alpha$  of each multi-item variable is over 0.7 (except 0.66 for transactional complexity), showing high internal consistency for each of these variables. Following Bagozzi and Yi (1988), we also computed composite reliability (CR) scores to assess construct reliability. As reported in Table 2, all factors have CRs greater than 0.70. The AVE values for all constructs satisfactorily exceed 0.50. Additionally, a confirmatory factor analysis was conducted, with the result showing a good fit for the supplier data ( $\chi^2 = 403.67$ , d.f. = 260,  $p = 0.00$ , RMSEA = 0.053, GFI = 0.873, CFI = 0.922, NFI = 0.821, IFI = 0.924), and for the buyer data ( $\chi^2 = 347.44$ , d.f. = 260,  $p = 0.00$ , RMSEA = 0.042, GFI = 0.893, CFI = 0.958, NFI = 0.864, IFI = 0.958). Lastly, the discriminant validity was checked.

Table 2  
Descriptive statistics and Pearson's correlation matrix ( $N = 225$ ).

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9
1 Contract	4.89	0.97	1.00								
2 Transaction-specific investment	4.85	0.76	-.07	1.00							
3 Relational norms	5.29	0.70	.21**	.48**	1.00						
4 Trust	5.25	0.60	.19**	.45**	.58**	1.00					
5 Opportunism	4.09	0.97	-.40**	-.01	-.10	-.20**	1.00				
6 Relationship performance	5.17	0.64	.08	.48**	.45**	.57**	-.11	1.00			
7 Transactional complexity	3.93	0.83	-.46**	.15*	-.10	-.16*	.40**	-.01	1.00		
8 Personal relationship	5.45	0.68	.30**	.31**	.52**	.52**	-.10	.45**	-.15*	1.00	
9 Relationship duration	5.94	3.37	-.01	.13	.18**	.17*	-.02	.15*	-.18**	.22**	1.00

\* Correlation is significant at the 0.05 level (two-tailed).

\*\* Correlation is significant at the 0.01 level (two-tailed).

In so doing, we first arbitrarily chose two factors and compared their  $\chi^2$  difference. The results indicated that all of the  $\chi^2$  differences were significant. Second, we examined if the 95% confidence interval of the correlations between the two arbitrary factors includes 1.0 and found that none of the confidence intervals include 1.0, indicating good discriminant validity (Anderson and Gerbing, 1988). As an alternative test, we conducted the procedure recommended by Fornell and Larcker (1981). The squared correlation between each pair of constructs is less than the AVE for each individual construct. These results collectively provide strong evidence of discriminant validity. Table 2 reports the major estimates of reliability and validity.

4. Results

Table 2 reports the descriptive statistics and Pearson correlation coefficients for all variables involved in this study based on the matched dyadic data. To check whether buyers and suppliers are symmetric or not in perceiving and answering these variables, we conducted a paired *t*-test. The result shows that there are no significant differences between the two sides in responding to most variables except transaction-specific investment ( $t = 2.096, p < 0.05$ ).<sup>5</sup> While this confirms the appropriateness of using the mean approach to average dyadic scores in our sample, it reminds us of the possible asymmetry between members in a supply chain regarding their views and perceptions toward some common activities, and opens an avenue for future research to explore when and why these members share or differ in their perceptions toward dyadic conducts, such as the transactional-relational mechanism mix.

To test our hypotheses, we estimated the following regression models:

$$O/RP = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_1 \tag{1}$$

$$O/RP = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon_2 \tag{2}$$

$$O/RP = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon_3 \tag{3}$$

$$O/RP = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon_4 \tag{4}$$

$$O/RP = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_4 X_6 + \beta_9 X_4 X_7 + \beta_{10} X_5 X_6 + \beta_{11} X_5 X_7 + \varepsilon_5 \tag{5}$$

<sup>5</sup> In paired *t*-test, there are no significant differences in other constructs between buyers and suppliers, including contract ( $t = -0.649, p = 0.517$ ), relational norms ( $t = 1.061, p = 0.290$ ), trust ( $t = 1.297, p = 0.196$ ), opportunism ( $t = -1.132, p = 0.259$ ), and relationship performance ( $t = 1.505, p = 0.134$ ). In addition, we conducted Chow's tests to see if the transactional-relational mechanism mix and their outcomes were significantly different between buyers and suppliers. Overall, the results show that such differences were not statistically significant ( $F = 1.33 < F(12,436) = 1.13$ ).

where *O* the opportunism, *RP* the relationship performance,  $X_1$  the transactional complexity,  $X_2$  the personal relationship,  $X_3$  the relationship duration,  $X_4$  the contract,  $X_5$  the transaction-specific investments,  $X_6$  the relational norms, and  $X_7$  the trust.

Essentially, Eq. (1) captures dependent variables (opportunism and relationship performance) as a function of the three control variables in this study. Eq. (2) captures dependent variables as a function of transactional mechanisms and control variables, while Eq. (3) captures dependent variables as a function of relational mechanisms and control variables. Finally, Eq. (4) captures dependent variables as a function of transactional mechanisms, relational mechanisms and control variables.

Results of regression are shown in Table 3. From the results of Model 4, significant negative relationships were found between contracts and opportunism ( $\beta = -0.196, p < 0.01$ ) and between TS investments and opportunism ( $\beta = -0.247, p < 0.01$ ). Similarly, relational norms ( $\beta = -0.154, p < 0.10$ ) and inter-organizational trust ( $\beta = -0.159, p < 0.01$ ) exert a significant and negative effect on opportunism. These results lend support to H1 and H2. Model 5 in Table 3 is used to examine the interaction effects between transactional mechanisms and opportunism and between relational mechanisms and opportunism. Specifically, the results show that the interaction between contracts and relational norms is not significant in relation to opportunism but the interaction between contracts and trust is ( $\beta = -0.218, p < 0.01$ ). Meanwhile, interactions between transaction-specific investments and two relational mechanisms are both negative and significant in relation to opportunism ( $\beta = -0.152, p < 0.05; \beta = -0.111, p < 0.05$ ). These results partially support H3.

As shown in Model 9, the effect of contracts on relationship performance is positive and significant ( $\beta = 0.090, p < 0.10$ ). Likewise, TS investments also exert a significantly positive influence on relational performance ( $\beta = 0.235, p < 0.01$ ). It is also found that relational norms ( $\beta = 0.192, p < 0.01$ ) and inter-organizational trust ( $\beta = 0.360, p < 0.01$ ) are both significantly and positively associated with relational performance. These findings support H4 and H5. Further, as reported in Model 10, the interaction between contracts and relational norms is significantly positive in respect to relational performance ( $\beta = 0.096, p < 0.05$ ). Similarly, interaction terms between TS investments and two relational mechanisms (trust and relational norms, respectively) have a strong and positive impact relational performance ( $\beta = 0.188, p < 0.01; \beta = 0.115, p < 0.05$ ). Nevertheless, the interaction between contracts and trust was not found to affect relationship performance ( $\beta = -0.049$ ). These results lend partial support to H6.

We then employed two methods to test the relative power of transactional and relational mechanisms (H7 and H8). First, taking “opportunism”, for example, we can get  $\Delta R^2$  as follows from the regression results of Model 2, Model 3 and Model 4:

$$\Delta R^2_{Model4-Model2} = R^2_{Model4} - R^2_{Model2} = 0.408 - 0.378 = 0.030,$$

**Table 3**  
Hypotheses testing: hierarchical multivariate regression (N = 225).

	Opportunism				Relationship performance					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
<b>Control variable</b>										
Transactional complexity	0.542***	0.501***	0.510***	0.464***	0.430***	0.126***	0.070	0.174***	0.129***	0.168***
Personal relationship	-0.098*	0.020	0.073	0.111*	0.070	0.431***	0.275***	0.182***	0.139***	0.123***
Relationship duration	0.199***	0.197***	0.220***	0.205***	0.231***	0.112**	0.069	0.089*	0.077	0.077
<b>Independent variable</b>										
Contract		-0.266***		-0.196***	-0.199***		0.096*		0.090*	0.095*
Transaction-specific investment (TSI)		-0.185***		-0.247***	-0.285***		0.405***		0.235***	0.239***
Relational norms			-0.110**	-0.154**	-0.162***			0.245***	0.192***	0.199***
Trust			-0.183***	-0.159**	-0.139**			0.418***	0.360***	0.391***
Contract × relational norms					-0.059					0.096*
Contract × trust					-0.218***					-0.049
TSI × relational norms					-0.152**					0.188**
TSI × trust					-0.111**					0.115**
Model F	8.252***	8.108***	8.420***	6.370***	4.451***	4.033***	5.408***	6.572***	6.378***	4.304***
R <sup>2</sup>	0.308	0.378	0.332	0.408	0.472	0.219	0.357	0.428	0.467	0.496
ΔR <sup>2</sup>		0.070	0.024	0.030/0.076	0.064		0.138	0.209	0.110/0.039	0.029
Hierarchical F		12.27***	3.92***	5.47***/13.86***	6.45***		23.50***	40.01***	22.39***/7.94***	3.06***

Notes: F = (ΔR<sup>2</sup>/Δk)(N - k<sub>2</sub> - 1)/(1 - R<sub>2</sub><sup>2</sup>) where k is the number of predictors and N the total sample size.

- \* p < 0.1.
- \*\* p < 0.05.
- \*\*\* p < 0.01

$$\Delta R^2_{Model4-Model3} = R^2_{Model4} - R^2_{Model3} = 0.408 - 0.332 = 0.076.$$

Here ΔR<sup>2</sup><sub>Model4-Model2</sub> represents the proportion of the variance of opportunism that the relational mechanisms can explain. ΔR<sup>2</sup><sub>Model4-Model3</sub> represents the proportion of the variance of opportunism that transactional mechanisms can explain. Since ΔR<sup>2</sup><sub>Model4-Model2</sub> < ΔR<sup>2</sup><sub>Model4-Model3</sub>, we can conclude that transactional mechanisms are more forceful in shaping opportunism than relational mechanisms. Similarly, from the regressions result of relationship performance, we obtain ΔR<sup>2</sup> as follows:-

$$\Delta R^2_{Model9-Model7} = R^2_{Model9} - R^2_{Model7} = 0.467 - 0.357 = 0.110,$$

$$\Delta R^2_{Model9-Model8} = R^2_{Model9} - R^2_{Model8} = 0.467 - 0.428 = 0.039.$$

Since ΔR<sup>2</sup><sub>Model9-Model7</sub> > ΔR<sup>2</sup><sub>Model9-Model8</sub>, it suggests that relational mechanisms are statistically stronger in shaping relationship performance than transactional mechanisms.

**Table 4**  
Semipartial correlation.

	Opportunism		Relational performance	
	Part correlation	Square of part correlation	Part correlation	Square of part correlation
<b>Transactional mechanisms</b>				
Contract	-0.178	0.032	0.083	0.007
Transaction-specific investment	-0.236	0.056	0.207	0.043
<b>Relational mechanisms</b>				
Relational norms	-0.122	0.015	0.181	0.033
Trust	-0.139	0.019	0.306	0.094
<b>Control variables</b>				
Transactional complexity	0.441	0.194	0.122	0.015
Personal relationship	0.093	0.009	0.118	0.014
Relationship duration	0.200	0.040	0.075	0.006

**Table 5**  
Summary of hypotheses and results.

Hypotheses	Results
H1: There is a negative link between the use of transactional mechanisms, including (a) contract and (b) transaction-specific (TS) investments, and opportunism in buyer–supplier dyads	Supported
H2: There is a negative link between the use of relational mechanisms, including (a) relational norms and (b) trust, and opportunism in buyer–supplier dyads	Supported
H3: Mitigation of opportunism is stronger when transactional and relational mechanisms are used jointly than when used separately	Partially supported (except the joint effect between contract and norms, all else supported)
H4: There is a positive link between the use of transactional mechanisms, including (a) contract and (b) TS investments, and relational performance in buyer–supplier dyads	Supported
H5: There is a positive link between the use of relational mechanisms, including (a) relational norms and (b) trust, and relational performance in buyer–supplier dyads	Supported
H6: Improvement of relational performance is stronger when transactional and relational mechanisms are used jointly than when used separately	Partially supported (except the joint effect between contract and trust, all else supported)
H7: Transactional mechanisms (contract and TS investments) are more effective than relational mechanisms (relational norms and trust) in curbing opportunism	Supported
H8: Relational mechanisms (relational norms and trust) are more effective than transactional mechanisms (contract and TS investments) in improving relationship performance	Supported

therefore supported. Table 5 summarizes the statement and result of each hypothesis.

## 5. Discussion and conclusion

### 5.1. Results summary

This study demonstrates three major findings. First, transactional mechanisms (contracts and transaction-specific investments) and relational mechanisms (inter-organizational trust and relational norms) are both important in curtailing opportunism and improving relationship performance in buyer–supplier dyads. Second, transactional mechanisms, including both contracts and TS investments, are more statistically powerful in alleviating opportunism than are relational mechanisms. However, relational mechanisms, such as trust and norms, are more profound in enhancing relationship performance than transactional mechanisms. Third, when transactional and relational mechanisms are used together, there will be greater benefits in terms of opportunism mitigation and performance enhancement than when they are used separately.

Overall, these findings suggest the importance of concurrently and interactively employing both transactional and relational mechanisms together in order to effectively govern buyer–supplier relationships. The findings also unveil empirical comparisons between two types of governance mechanisms side by side within the same analysis, which advances our understanding of relative effectiveness of varying governance mechanisms in different aspects of governance concerns (e.g., reducing unilateral opportunism vs. improving joint returns). Although we used the secondary data collected from an emerging market (China) to empirically verify our hypotheses, we anticipate that our key premises and theoretical model can be generalized in other contexts.

The empirical findings may be applicable to other countries as well, especially emerging markets, to the extent that the external environment in which buyer–supplier dyads operate is similar to that in our empirical setting. This still requires further verification. We also note that prior research has investigated the roles of various control or governance mechanisms from the perspective of one party. To fill this void, this study explored these mechanisms from the perspective of both sides and presented the above findings using matched dyadic data.

### 5.2. Theoretical implications

The main findings of this study support transaction cost theory and demonstrate the theory's relevance in explicating supply chain governance. Previous studies present two competing views toward the effect of contracts on opportunism. Transaction cost logic suggests that drafting a detailed contract reduces opportunism (Dahlstrom and Nygaard, 1999; Williamson, 1985). Alternatively, some psychology theorists argue that a formal contract emphasizing control and legal rules may signal distrust between exchange members and may prompt opportunism in uncertain situations (John, 1984). Our analysis confirms the effectiveness of contracts in curbing opportunism in buyer–supplier dyads in a highly uncertain environment which corroborates transaction cost economics. While prior research based on transaction cost economics has documented a contract's role in promoting an individual party's private gains (Cannon et al., 2000; Poppo and Zenger, 2002), our study reveals that a contract improves relationship performance for both parties. In addition, we show that relational investments (tangible and intangible) lessen opportunism and improve relational performance, another finding consistent with transaction cost theory.

Williamson explicitly defined such investments as a part of “mutual hostage”, which in turn escalates members’ incentive to cooperate (1983). This study confirms this view in the context of buyer–supplier links in an emerging market.

Our analysis also supports some major notions in social exchange theory. The role of trust and relational norms in governing inter-firm relationships has been largely mixed in the past. Some studies argue that trust and norms can restrain parties from acting opportunistically (Brown et al., 2000; Wathne and Heide, 2000). Others, however, show the dark side of trust and norms, suggesting that high trust and reliance on relational norms may weaken the efficiency of self-enforcing mechanisms (Wicks et al., 1999; Wuyts and Geyskens, 2005). This mixed evidence has to do in part with the fact that these studies focused on one-sided perception or consequences and ignored the other party’s views. By using the matched dyadic data and viewing from both parties, the present study finds that social exchange mechanisms, such as trust and relational norms, are effective means for inhibiting opportunism and increasing relational performance for members in a long-term supply chain. According to social exchange theory, malfeasance can be averted (i.e., opportunism can be restrained and relational performance improved) by trust and relational norms because participating members realize that transactional mechanisms alone make it too costly to engage in socially embedded economic activities and such relational mechanisms may evolve to discourage malfeasance (Granovetter, 1985; Jones et al., 1997). Previous studies also suggest that trust and relational norms work in more structurally tightened partnerships, such as equity joint ventures (Dyer and Chu, 2003; Luo, 2007; Mohr and Spekman, 1994). Our findings illustrate that these two relational mechanisms also work in buyer–supplier dyads belonging to loosely structured relationships.

Finally, our findings support the complementarity view toward formal and informal governance mechanisms. This view posits that the formal governance system (e.g., contracts and investments) and the informal governance system (e.g., trust and norms) function as complements, rather than substitutes, in generating higher exchange performance (Luo, 2002; Poppo and Zenger, 2002). A competing view, however, holds that formal and informal mechanisms may be less effective when used together in governing the partnership than when used separately due to the necessity of a very different set of environments for the two types of mechanisms to work (Wuyts and Geyskens, 2005). Our analysis of 225 paired data offers additional insight into and support for the complementarity view. Unlike previous efforts which used a one-sided lens, which could cause bias, we arrived at this conclusion by analyzing the responses from both sides. Additionally, this study is among the first inquiries to demonstrate this complementarity in the context of buyer–supplier dyads. This complementarity is congruent with the economic sociology view that for economic actions that are gradually embedded in social structure, formal (transactional) and

informal (relational) governance systems mutually redress each other’s deficiency and reinforce each other’s particular function when they come into play together (Granovetter, 1985).

### 5.3. Managerial implications

As firms seek more competitive advantages in the marketplace, relationship building with buyers or suppliers becomes increasingly critical. Superior relationships create a stable and fostering environment for the firm to grow in a dynamic market, solidify the group’s collective power against competing groups and generate greater returns through resource sharing. However, like any other relationships, buyer–supplier dyads are also full of potential for opportunism, conflict and in some cases zero-sum competition. Governing such dyads is a key task for executives on both sides. One lesson learned from this study is the alignment between governance mechanisms and firm objectives. If the firm seeks to dispel opportunism and improve relationship performance, executives should consider using transactional and relational mechanisms concurrently. The joint use of these mechanisms is more effective than the individual use for the independent governance purpose. If the firm seeks to resist opportunism only, contracts and relationship investment can be emphatically used to achieve this goal. But if the firm seeks to improve relationship performance only, inter-firm trust and relational norms become more important means for this end. To make these mechanisms and the alignment work, both buyers and suppliers need to be committed to designing and exercising the optimal governance system.

Another lesson learned from this study, though less directly, pertains to operations and supply chain management in emerging and developing economies. As many of these economies, most notably China, are now the hubs of global manufacturing, the issue of operations and supply chain management in these countries is growing important to both academics and practitioners alike. However, our understanding of this issue is rather limited in this context. Operations and supply chain management does not always operate the way that Westerners expect it to nor necessarily the same over time. In China, contracts used to be seen as ineffective at best (or as a useless piece of “paper” by some). In this study, we find that this conventional view does not hold true anymore, at least according to our matched sample. Contracts in this setting are found to exert a significant influence on resisting opportunism and improving relationship performance. As the scale and scope of manufacturing in China magnifies to meet the growing demands from both global and domestic markets, buyer–supplier dyads progressively mature, as does the governance system in such dyads.

Business practices in most emerging economies are primarily featured by inter-personal and inter-firm ties and connections, or *guanxi* in Chinese (Luo, 2000), making relationship building between buyers and suppliers even more important and yet more sophisticated to develop. Although we did not directly examine *guanxi*, this study reports that *guanxi*-related trust and relational norms are powerful in effectively governing buyer–supplier

partnerships and even more so in nourishing long-term relationship performance. Trust often arises after *guanxi* is established. Moreover, *guanxi* cannot be sustained for long unless members follow relational norms. Because China is economically and socially transitioning and transforming, firms in buyer–supplier dyads appear to embrace economic-based mechanisms (contract and TS investments) while still adhering to some fundamental business traditions in managing their working relationships with partners.

#### 5.4. Limitations and future research

This study has several limitations that need to be addressed in future endeavors. First, it investigates only four governance mechanisms, leaving some other mechanisms, such as influence strategies, communication effectiveness, goal congruence and ownership arrangement unexplored. Future research may take up these issues, offering both theoretical and empirical insights into how these additional mechanisms work, individually or interactively, in restraining private interest seeking and promoting collective benefits achievements. Second, we used only a single country to test our propositions and China certainly cannot represent all emerging economies. Future efforts may extend similar inquiries to other national settings, and furthermore, incorporate national-level parameters, such as economic development, legal system, political regime and market size in an integrated analysis. Such economic and institutional conditions may shape in part the industrial environment where operations and supply chain systems play their part.

Third, this study did not systematically probe the possible asymmetry in the dyadic relationship between buyers and suppliers. This asymmetry may exist due to differences in bargaining power between chain members. Likewise, this study focused only on transactional and relational mechanisms that are exercised together by chain members. Due to different goals and asymmetry power position between buyers and suppliers, unilateral control exercised by individual members for private interest also warrants investigation. Finally, this study did not diagnose the processes that establish and maintain transactional and relational mechanisms. Note that there are direct and indirect “costs” involved in developing these mechanisms (e.g., tangible and intangible resources are needed to contribute to TS investments). Thus, there must be some antecedents that determine the optimal level needed by specific firms in buyer–supplier dyads. Because the need for these mechanisms is a function of both market prospects and a firm’s organizational needs and resource availability, future research may explore these antecedents at both external (market) and internal (organization) levels.

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#### Appendix A. Profile of matched survey sample

Characteristics of sample and respondents	Buyer	Supplier
1. Company age	8.1 years	12.2 years
2. Length of the buyer–supplier relationship	5.8 years	5.8 years
3. Location	%	%
Northern China	20.2	16.2
Central China	18.5	14.5
Eastern China	14.3	22.3
Southern China	21.4	25.4
Northwestern China	13.0	11.0
Southwestern China	12.6	10.6
4. Size of employees	%	%
≤200	31.8	26.9
201–500	23.9	32.9
More than 500	44.3	40.2
5. Company sales (in million RMB)	%	%
≤10	25.0	15.0
10–50	30.0	35.0
50–200	21.0	27.0
More than 200	17.5	18.5
Unreported	6.5	4.5
6. Type of firm ownership	%	%
State-owner enterprises	11.5	28.6
Joint ventures	5.9	8.9
Limited companies	43.9	37.6
Private companies	7.6	13.8
Collective enterprises	19	8.6
Others (village firms, etc.)	12.1	2.5
7. Industry type	%	%
Refrigerator	29.9	32.4
Color TV	35.5	38.7
Air-conditioning	34.6	28.9
8. Job position of the respondent	%	%
President/CEO	38.1	37.9
Purchasing/sales manager	21.1	20.8
General manager	15.3	14.9
Others	25.5	26.4
9. Tenure of the respondent in current position	4.7 years	3.5 years
10. Length of the respondent involving in the focal buyer–supplier relationship	3.8 years	2.5 years

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