

Uncertainties, resources, and supplier selection in an emerging economy

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Abstract Focusing on supplier selection, this article addresses two questions: (1) What are the antecedents that lead to the adoption of various types of selection strategies? (2) What impact do these strategies have on supplier performance? We build a research model showing how both the uncertainty-based and resource-based views drive market-focused and relationship-focused supply selection strategies. Further, we argue that market-focused and relationship-focused selection strategies may have different effects on supplier performance. Specifically, market-focused selection has a positive influence, whereas relationship-focused selection has an inverted U-shaped effect on supplier performance. In addition, the interaction between these two strategies exerts a significant positive influence on supplier performance. Survey data collected from 208 Chinese manufacturers are used to test our hypotheses.

Keywords Supplier selection · Uncertainties · Resources · Supplier performance · China

As competition intensifies, proper selection of suppliers has increasingly become a source of competitive advantage (Joshi, 2009; Wathne & Heide, 2004). In general,

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two strategies can be used in supplier selection: *market-focused selection* (which relies on arm's-length transactions in the marketplace) and *relationship-focused selection* (which relies on embedded relationships between managers and firms) (Li & Rowley, 2002; Meuleman, Lockett, Manigart, & Wright, 2010; Saxton, 1997; Uzzi, 1999; Wuyts & Geyskens, 2005). Therefore, two crucial questions emerge: (1) what are the antecedents that lead to the adoption of a market-focused selection strategy, a relationship-focused selection strategy, or a combination of the two? (2) What is the nature of the influence of these strategies on supplier performance?

Two views have emerged underpinning supplier selection. First, an uncertainty-based view suggests that supplier selection is driven by external uncertainties, which are the difficulties firms have in predicting their future (Baum, Rowley, Shipilov, & Chuang, 2005; Podolny, 1994). As a result, firms establish external linkages with other firms such as reliable suppliers in order to reduce uncertainty (Burt, 1992; Pfeffer & Salancik, 1978; Xu, Huang, & Gao, 2012). Partner selection strategy, thus, is influenced by various types of environmental uncertainties, such as firm-specific uncertainty, market uncertainty, and behavior uncertainty (Beckman, Haunschild, & Phillips, 2004; Li, Eden, Hitt, & Ireland, 2008a). A second, resource-based view (RBV) posits that partner selection is driven by firms' internal resources (Barney, 2001; McIvor, 2009; Song, Dröge, Hanvanich, & Calantone, 2005). According to Hitt, Dacin, Levitas, Arregle, and Borza (2000), a focal firm searches for partners with the goal of leveraging its internal resources. This RBV identifies several building blocks behind supplier selection, including the focal firm's technological resources, managerial capabilities, and organizational culture (Li et al., 2008a; Wuyts & Geyskens, 2005).

Although these two views shed considerable light on supplier selection, at least two gaps remain. First, while Uzzi (1997, 1999) identified the dichotomy of market-focused and relationship-focused selection, little work has examined why firms may choose one over the other by integrating the uncertainty-based and resource-based views. It is not clear whether the adoption of a given supplier selection strategy is driven by the quest to reduce uncertainties or leverage internal resources. Second, existing studies have generally been conducted in developed economies. Therefore, we know little about what is behind supplier selection in emerging economies. However, the importance and rapid growth of emerging economies such as China necessitate our attention (Li et al., 2008a; Wright, Filatotchev, Hoskisson, & Peng, 2005).

Appropriate selection of suppliers may ultimately impact supplier performance (Choi & Hartley, 1996). Some researchers suggest that market-focused selection is useful for finding qualified suppliers and hence will be helpful to achieve successful supplier performance (Sidhu, Commandeur, & Volberda, 2007). However, other scholars contend that relationship-focused selection is likely to have a positive influence on supplier performance (McCutcheon & Stuart, 2000). Some scholars argue that the relationship between supplier selection strategy and supplier performance is more complex than earlier research indicates (Anderson & Jap, 2005). According to Li, Poppo, and Zhou (2008b), buyer firms that are "stuck" with existing suppliers due to great social relationships may be unable to reap the benefits potentially brought by qualified suppliers that may be found through market-focused means. Thus, the debate remains unresolved as to whether market-focused or

relationship-focused supplier selection may lead to more superior supplier performance. In addition, given that buyer firms are likely to use relationship-focused and market-focused selection simultaneously, thus, it is also worthy to examine the interactive influence of these two strategies on supplier performance.

Extending the debate to the previously underexplored context of emerging economies, we argue that this context is particularly appropriate to probe into the drivers behind supplier selection and supplier performance. A hallmark of emerging economies is the gradual transitions from a relationship-focused strategy to a market-focused strategy (Peng, 2003). However, these transitions do not take place overnight. While tremendous uncertainties loom on the horizon, firms are eager to build their resources to cope and compete (Wright et al., 2005). Consequently, the simultaneous use of relationship-focused and market-focused strategies is likely during transitions (Zhou, Li, Zhao, & Cai, 2003).

Theoretically, this article endeavors to provide a deeper and more nuanced understanding of the two questions on the antecedents and outcomes of supplier selection strategy. As shown in Figure 1, we build a research model showing how both the uncertainty-based and resource-based views drive market-focused and relationship-focused supply selection strategies. Further, we argue that market-focused and relationship-focused selection may lead to different supplier performance. Specifically, market-focused selection has a positive influence, whereas relationship-focused selection has an inverted U-shaped effect on supplier performance. Empirically, we leverage data collected from 208 Chinese manufacturers. Because of China’s long tradition of Confucianism that has fostered relationship-building and its ongoing transitions to a market economy that have facilitated market-based transactions, both market-focused and relationship-focused strategies will be

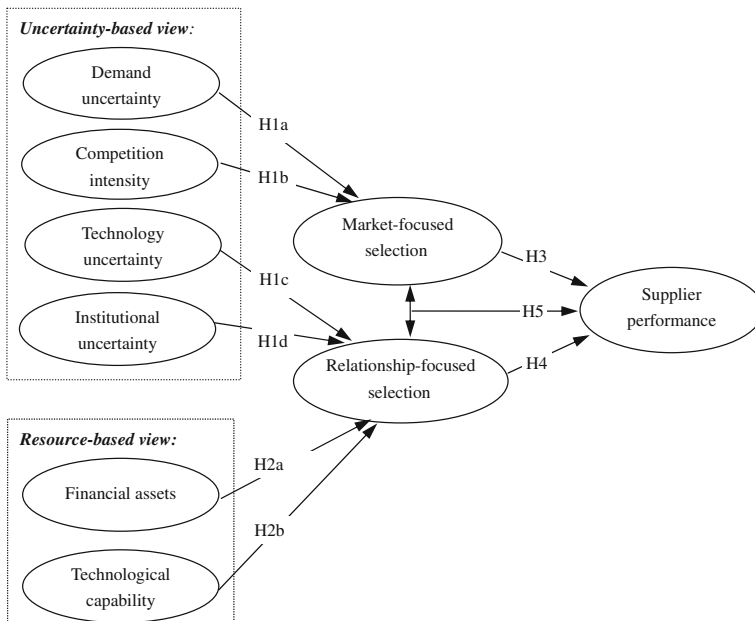


Figure 1 Conceptual model

used in the practice of supplier selection (Zhou et al., 2003). Thus, China provides a unique context in which we can examine the antecedents and consequences of supplier selection strategies.

Theory and hypotheses

Two supplier selection strategies

Buyer firms need to develop various supplier selection strategies and use the resources at their disposal to find qualified suppliers (Stump & Heide, 1996; Wathne & Heide, 2004). Existing literature has identified two approaches for supplier selection, including market-focused selection and relation-focused selection (Gulati & Gargiulo, 1999; Uzzi, 1999; Wuyts & Geyskens, 2005). Drawing on traditional economic theories, some scholars emphasize that partner selection is a rational decision with an aim to maximize efficiency. Thus, firms tend to collect information on potential suppliers (e.g., price, quality, and performance) from open sources including public trade and the media; then buyer firms evaluate potential suppliers (Saxton, 1997). This market-focused selection strategy implies that the managers tend to “undersocialize” relationships in supplier selection. The primary advantage of the strategy is being able to connect the buyer firm to suppliers with nonredundant contacts that possess unique information and skills (Burt, 1992). However, some researchers have cautioned that the strategy may result in higher risk and behavioral uncertainty due to the necessity of having to work with new partners (Li & Rowley, 2002).

Other scholars suggest that supplier selection is not an isolated decision but takes place in the social network of a buyer firm (Gulati & Gargiulo, 1999; Meuleman et al., 2010). Firms tend to create stable, reciprocal relationships characterized by intensive interaction and trust established with specific actors. Over time, these embedded relationships become a growing repository of information about potential partners (Li & Rowley, 2002; Rosenkopf & Padula, 2008). Adopting this relationship-focused supplier selection strategy implies that managers select suppliers through social relations, including ties and referrals from partner firms, friends, or relatives (Zhou et al., 2003). The strategy saves search costs and alleviates the risk of potential opportunism associated with new partners (Gulati & Gargiulo, 1999; Podolny, 1994). The primary disadvantages are (1) creating redundant paths to the same information sources and (2) preventing firms from looking beyond their pools of social relationships (Beckman et al., 2004; Rosenkopf & Padula, 2008).

Uncertainties and supplier selection

To some researchers, reducing uncertainty is a primary motivation guiding individual or organizational behavior, because “certainty renders existence meaningful and confers confidence in how to behave and what to expect from the physical and social environment” (Hogg & Mullin, 1999: 253). The

uncertainty-reduction hypothesis has been applied at not only the individual level but also at the organizational level (Pfeffer & Salancik, 1978). In the context of interorganizational network building, this argument implies that firms establish linkages with other firms in an attempt to control uncertainty (Burt, 1992; Podolny, 1994).

In China's emerging economy, firms confront a high level of uncertainty, stemming from not only the market but the institutional framework as well. On the one hand, as the market develops, managers become more concerned about market forces and have to respond to market uncertainty (Gao, Zhou, & Yim, 2007; Kwon, 2012). On the other hand, institutional uncertainty is also a primary dimension of environmental force for firms in emerging economies (Child & Möllering, 2003; Hitt et al., 2000; Roy & Oliver, 2009). According to Peng (2003) and Zhou and Peng (2010), market-oriented institutional transitions can be conceptualized as moving from one primary mode of exchange to another, which introduces considerable chaos and uncertainty. Thus, firms in China encounter both market and institutional uncertainty when making strategic choices on selecting suppliers.

Demand uncertainty, competitive intensity, and technological turbulence are the three fundamental forms of market uncertainty because they represent the influences of customers, competition, and technology in the market (Zhou, Yim, & Tse, 2005). We argue that different types of market uncertainty will impact firms' decision about selection strategy in different ways in China. Specifically, demand uncertainty may drive the adoption of relationship-focused selection, whereas competitive intensity and technology uncertainty may drive firms to adopt market-focused selection.

Demand uncertainty refers to the instability of consumer preferences and expectations (Zhou et al., 2005). We argue that due to two reasons firms that face higher demand uncertainty are more likely to adopt relationship-focused selection. First, flexibility is critical if firms are to deal with demand uncertainty (Young-Ybarra & Wiersema, 1999). The way buyer firms build cooperative relationships with suppliers greatly influences buyer firms' flexibility (Wathne & Heide, 2004). The adoption of relationship-focused selection indicates that the buyer firm prefers to select past partners (or the partners' partners) as suppliers (Baum et al., 2005). Common norms and values are therefore easily developed between buyer firms and suppliers and they, in turn, improve information sharing and coordination.

Second, demand uncertainty requires that buyer firms and suppliers have good adaptation abilities when working together (Wathne & Heide, 2004). Thus, saving negotiation costs is a critical consideration for buyer firms when they initiate exchange relationships with suppliers when confronting higher levels of demand uncertainty. Relationship-focused selection will establish highly embedded buyer-supplier relationships, in which suppliers will have a long-term orientation towards cooperation (Uzzi, 1997). In this scenario, negotiation costs between partners are reduced because a "repeated game" allows for opportunities to correct past transaction inequities in the future (Dyer, 1997). In contrast, market-focused selection features arm's-length ties between buyers and suppliers (Peng, 2003; Zhou & Peng, 2010). In this scenario, the buyer firm may encounter substantial

negotiation costs (Dyer & Singh, 1998). This may be especially the case in China because the potential costs in drafting, monitoring, and enforcing contracts will be heightened by the weak institutional and legal environment (Child & Möllering, 2003; Li, Xie, Teo, & Peng, 2010). Thus:

Hypothesis 1a Firms facing higher demand uncertainty are likely to adopt a relationship-focused selection strategy rather than a market-focused selection strategy in supplier selection.

Competition intensity refers to the degree of competition a firm faces within its industry. Some researchers contend that firms facing higher competition intensity may seek stability and cooperation and maintain their current suppliers (Beckman et al., 2004). However, we follow Peng (2003) to argue that during China's transitions, competition intensity may facilitate the adoption of market-focused selection rather than relationship-focused selection for two reasons. First, for firms operating in highly competitive markets, survival rests on the ability to maintain sales at a profitable level (Gu, Hung, & Tse, 2008). Firms have to reduce costs. A widely adopted method is to transfer the cost burden to suppliers (Choi & Hartley, 1996). In this scenario, the use of market-focused selection and the subsequent bidding are deemed effective ways to obtain the lowest price from suppliers (Dyer, 1997). In contrast, relying on social relationships may not necessarily result in the lowest cost suppliers, because of the obligations and friendship in such relationships (Li et al., 2008b).

Second, building and sustaining social relationships is costly because managers have to provide suppliers economic benefits (Li et al., 2008b; Peng & Luo, 2000). These economic benefits range from price increases for suppliers to wining, dining, and gift-giving. These are costly not only in terms of money but also in terms of managers' time and energy. Severe price wars, heavy advertising, and added services associated with intense competition impose severe financial burdens on firms. In China, due to the absence of core technologies, market competition for most firms is largely price-based. As a result, firms' profitability is relatively low. In such an environment, firms confronting higher competition intensity may be unable to "afford" building and sustaining social relationships with a relatively small number of suppliers, while ignoring the potentially lower cost solutions provided by many other suppliers that may be accessed through market-focused means. Conversely, when competition intensity is not so severe, firms may be able to continue to cultivate relationships with suppliers that are "old friends." Overall:

Hypothesis 1b Firms facing higher competition intensity are more likely to adopt a market-focused selection strategy rather than a relationship-focused selection strategy in supplier selection.

Technology uncertainty refers to the rate of technological advances within an industry (Zhou et al., 2005). Stock and Tatikonda (2008) suggested that if technology changes rapidly, firms will need new external skills and information to update their technological capabilities. We argue that suppliers that are selected by a market-focused strategy may be more capable of providing such skills and information than

firms selected through a relationship-focused strategy. This is because that market-focused strategy connects firms to nonredundant contacts and hence extends the search scope of the buyer firm (Baum et al., 2005). In the scenario, the firm is more likely to be exposed to the diverse information as well as access novel knowledge (Soda, Usai, & Zaheer, 2004). Research on technological innovation has identified that firms tend to look beyond their social networks and engage in exploratory search in partner selection when they face a high level of technological uncertainty (Rosenkopf & Almeida, 2003). Studies in organizational network have also found that when technological discontinuities emerge in an industry, the structure of existing networks in the industry will be changed by the new entrants who were selected by embedded firms as partners (Rosenkopf & Padula, 2008).

In contrast, relying on a relationship-focused selection strategy may have at least two disadvantages in an intense technologically competitive environment. First, firms with novel technology and greater productivity will likely emerge in an industry undergoing rapid technological changes. By dealing only with existing partners, a firm may deprive itself of more capable and efficient partners (Baum et al., 2005; Wuyts, Verhoef, & Prins, 2009). Second, technological changes reallocate opportunities, shift industrial standing, and redistribute power in a market (Zhou et al., 2005). In this situation, it may be inefficient—or even a mistake—to rely on direct or indirect ties to get things done (Rosenkopf & Padula, 2008; Wuyts et al., 2009). Stump and Heide (1996) contended that the main risk of the buyer firm in high technological uncertainty context is technical obsolescence but not opportunistic risk. Gu et al. (2008) also reported that during China's dynamic transitions, a high level of technological uncertainty decreases the value of social relationships. Thus:

Hypothesis 1c Firms facing higher technology uncertainty tends to adopt a market-focused selection strategy rather than a relationship-focused selection strategy in supplier selection.

Institutions play an essential role in a market economy by supporting the effective functioning of market mechanisms, so that firms and individuals can engage in market transactions without incurring undue costs or risks (North, 1990). These institutions include the legal and regulatory frameworks and their enforcement. Institutional uncertainty makes firms less confident about entering new relationships with new suppliers, because the ability to enforce contracts in an institutionally uncertain environment is hard to predict (Peng, 2003; Roy & Oliver, 2009).

We argue that institutional uncertainty may facilitate the adoption of relationship-focused selection. If a firm initiates a contractual relationship with a new firm through market-focused selection in an environment characterized by a high level of institutional uncertainty, it may be forced to develop more complex contracts in which the parties specify the obligations of each party for every possible contingency (Lovett, Simmons, & Kali, 1999). Such contracts are likely to be difficult and expensive to write and enforce (Williamson, 1991). To avoid such costs and complications, a relationship-focused strategy may become an ideal substitute for market-focused selection of suppliers. In other words, when formal protection of property rights is ineffective, firms may be more likely to choose to cooperate with existing suppliers and reinforce their current network. Thus:

Hypothesis 1d Firms facing a higher level of institutional uncertainty are more likely to adopt a relationship-focused selection strategy rather than a market-focused selection strategy in supplier selection.

Resources and supplier selection

The RBV suggests that internal resources correlate closely with how a firm initiates relationships with other partners. According to Hitt et al. (2000), financial assets and technological capabilities are particularly relevant to the adoption of supplier selection strategy in emerging economies. It is because these two types of resources are critical for a firm to establish, maintain, and utilize external relationships, which associate closely with the approach in supplier selection (Gu et al., 2008). However, we argue that in China's emerging economy, these two types of resources would lead firms to adopt different supplier selection strategies. Specifically, superior financial assets support the adoption of a relationship-focused strategy, while superior technological assets facilitate the use of a market-focused strategy.

In emerging economies, maintaining high-quality social ties is a resource-consuming task (Lovett et al., 1999; Peng, 2003). Only the firms having superior financial assets are able to establish and maintain adequate social relationships that support the use of relationship-focused selection. In addition, a financial healthy buyer is especially attractive to its external partners in emerging economies, because the firm is more likely to offer sufficient and stable benefits to its suppliers (Hitt et al., 2000). Research in organizational network has identified the existence of an actor with high attractiveness in a network as a primary mechanism to enhance network endogeneity which leads the embedded firms increasingly engage in local search but overlook the importance of exploration in partner selection (Rosenkopf & Padula, 2008). In the context of supplier selection, the mechanism would be embodied as external partners are motivated to establish and maintain close ties with the attractive buyer firm. In the scenario, the buyer firm would be deeply embedded in its social network and hence increasingly utilize the network to select suppliers and take less attentions to open market (Uzzi, 1997). We hence have:

Hypothesis 2a Firms that possess superior financial assets tend to use a relationship-focused selection strategy rather than a market-focused selection strategy in supplier selection.

However, we argue that in China's emerging economy, firms having superior technological capabilities tend to adopt a market-focused selection strategy over a relationship-focused selection strategy. According to the perspective of absorptive capability (Cohen & Levinthal, 1990), firms having superior technological capabilities are more likely to identify and value the novel knowledge and skills from external partners. Under the condition, the firms may be willing to forsake the trust benefits of relationship-focused strategy and emphasize the advantages of a market-focused strategy in providing access to unique skills and novel knowledge (Rosenkopf & Padula, 2008). Thus, firms having superior technological capabilities

are more likely to look beyond their social networks and engage in exploratory search in partner selection.

Scholars have contended that a firm having superior technological capabilities may also possess adequate social relationships. It is because establishing close relationships with a technology-leading firm enable a firm to gain legitimacy in the market (Dacin, Oliver, & Roy, 2007). In China's emerging economy, however, few firms could establish such a significant reputation by their technological capabilities. Negligible advantages in technological capabilities cannot guarantee a firm to establish adequate social relationships which support the use of a relationship-focused selection strategy. We hence posit:

Hypothesis 2b Firms that possess superior technological capabilities tend to use a market-focused selection strategy rather than a relationship-focused selection strategy in supplier selection.

Supplier selection strategies and supplier performance

Effectively selecting the right suppliers can result in better supplier performance (Wathne & Heide, 2004). We argue that both market-focused and relationship-focused strategies may be beneficial—but in different ways. Further, we contend that the interaction between these two strategies would improve supplier performance.

Although a market-focused strategy may be associated with higher contracting costs and monitoring costs, it may bestow at least three benefits in achieving satisfactory supplier performance. First, using market-focused selection enables the buyer firm to seek and evaluate potential suppliers from a wider pool of capable suppliers (Sidhu et al., 2007). Second, competition mechanisms inherent in this selection strategy are helpful in finding suppliers with appropriate capabilities. Third, the adoption of a market-focused strategy would exert competitive pressures on suppliers, and in turn strengthen the bargaining power of the buyer firm (Uzzi, 1997).

As the Chinese economy increasingly moves toward more market competition, the benefits of market-focused selection may become more salient (Peng, 2003). Chinese firms traditionally prefer to select suppliers or other partners based on social relationships (Li et al., 2010). This characteristic may lead firms to overemphasize pre-existing social ties or referrals with suppliers, and may overlook the capabilities of potential suppliers. In other words, this may result in “overembeddedness” at the expense of firms' ability to find new potential suppliers (Uzzi, 1997; Wuyts & Geyskens, 2005). As Lovett et al. (1999) pointed out, although social relationships are important, capabilities in the areas of technology and service that are not related to relationships may make more significant contributions to partners' performance in China. Thus, the benefits of market-focused selection may exceed its costs.

Hypothesis 3 The adoption of a market-focused selection strategy improves supplier performance.

Using a relationship-focused selection strategy does have at least three advantages in achieving satisfactory supplier performance. First, using this

strategy reduces potential opportunism of suppliers in cooperation (Baum et al., 2005; Heide, Wathne, & Rokkan, 2007). Second, superior buyer–supplier relationships may result in greater flexibility and more efficient coordination (Young-Ybarra & Wiersema, 1999). Third, the strategy is more likely to ensure the commitment of suppliers to the cooperation with the buyer firm (Koufteros, Cheng, & Lai, 2007). Thus, relationship-focused selection has the potential to improve supplier performance.

Although a relationship-focused strategy has certain advantages, we follow Peng (2003) to argue that beyond a certain level of reliance on relationships, these advantages may fade. When almost all of the suppliers are selected through social means, the buyer firm may become overembedded with suppliers (Uzzi, 1997). If “overembeddedness” indeed occurs, the social aspects of the exchange may supersede the economic imperatives, and buyer–supplier relationships may stifle economic efficiency. Perceived obligations and friendships may become so great that buyer firms end up becoming “relief organizations” for suppliers (Li et al., 2008b; Uzzi, 1997). In this context, suppliers would be less motivated to improve their efficiency. In summary, overemphasizing a relationship-focused strategy may diminish its advantages and impair supplier performance. We therefore posit that the relationship between a relationship-focused selection strategy and supplier performance is non-linear, and may be represented by inverted “U-shaped” curve. Stated formally:

Hypothesis 4 The effect of a relationship-focused selection strategy on supplier performance is shaped like an inverted U.

As business exchanges become more complex in China, firms would adopt both relation- and market-focused strategies in partner selection (Zhou et al., 2003; Zhou & Poppo, 2010). In the scenario, some of suppliers are identified through buyer firms’ social relationships, while others would be selected through open market information. We argue that combining these two strategies may improve supplier performance further. On the one hand, market-focused selection reduces the risk of overembeddedness stemming from the use of relationship-focused selection. Searching for and selecting suppliers beyond social networks increase the opportunities of the buyer firm to access new information and novel insights. On the other hand, relationship-focused selection could alleviate the side effects of market-focused selection. Expansive arm’s-length ties established through market-focused selection may not facilitate coordination between the buyer firm and suppliers (Beckman et al., 2004). However, embedded ties established by relationship-focused selection will improve inter-partner coordination by fostering common norms, values, and routines. Thus, two types of selection strategies would remedy each other’s shortcomings while preserving their strengths. As Uzzi (1999) noted, firms adopting both relationship-focused and market-focused selection can combine the partnering benefits of embedded ties with the brokering benefits of arm’s-length ties. Therefore, we argue that adopting both relationship-focused and market-focused selection strategies may be more effective than using either of them alone.

Hypothesis 5 Relationship-focused and market-focused selection strategies interact positively in influencing supplier performance.

Methods

Data collection

Our data are collected in three phases. In the first phase, we asked our partners at three Chinese universities to provide us directories of manufacturing firms in chemical and machinery sectors in multiple regions of China. Using the directories, we employed a purposive sampling strategy to identify prospective respondents. We needed to ensure that (1) their firms have been in existence at least 2 years; and (2) they were not large-scale state-owned enterprises (SOEs) controlled by the central government. We adopted the criteria because large SOEs in China tend to be relatively insensitive to the market. Government interference heavily influences managerial decisions in large SOEs, including how to select and control their suppliers. Considering the relatively non-market-oriented characteristics of SOEs, we followed Li et al. (2010) to exclude large SOEs in our data collection efforts.

Then, each firm was contacted through a phone call. During this phone conversation, the investigators provided a brief outline of the study and requested the firm's participation. To encourage participation, our partners promised to provide the managers a customized report. Following this procedure, 232 firms were identified as subjects for our study.

In the final phase, each of the subjects was interviewed face-to-face to obtain responses to the survey instrument. Although this was a resource-intensive option, it was selected for three reasons: (1) respondents' queries could be clarified on the spot, (2) a busy executive or senior manager would not delegate the task of completing the survey to lower-level managers or their assistants, and (3) we could ensure that data collection was complete and usable. Based on the number of firms that agreed to participate, we assigned one or two interviewers to each geographical area within China. Most of the interviewers were faculty members and graduate students at Chinese universities. Others were professional consultants. All the interviewers received training before embarking on the interviews. The training covered background of the survey, interview skills, and the exact meaning of every question in the survey instrument. Following the training, the interviewers conducted a pilot test with 10 firms in the presence of a trainer. A debriefing was held to improve data collection techniques and clarify some wording in the survey instrument. A special effort was made to identify and contact executives in each firm. Once they agreed to an interview, our interviewers went to the firm to conduct the interview. At the beginning of each session, the interviewer showed the interviewee a letter that explained the intent of the survey and stated our promise to keep the responses confidential. A typical interview lasted about one to one-and-a-half hours.

In order to avoid common method bias and to reduce the workload of the respondents, the questionnaire was split into two parts. Part I focused on the environmental, strategic, and organizational characteristics of the focal firm. Part II focused on the governance and supplier performance. We asked the CEOs or the general managers to answer Part I, and asked the purchasing

managers to answer Part II. Of the 232 firms that agreed to participate, 24 provided incomplete information, predominantly due to the policy of these firms. This resulted in a total of 208 fully usable surveys. The responses were from coastal, central, and western regions in China.

Construct operationalization

Whenever possible, standard and validated instruments from the literature were used or adapted. In the absence of an existing scale, new items were created based on the literature and refined by our pilot test. Questionnaire items, unless stated otherwise, were measured using a seven-point scale in which “1” represented “low degree” and “7” represented “high degree.”

Supplier selection strategies We listed the six most frequently used strategies of supplier selection (in China) in the questionnaire (Zhou et al., 2003). The respondents were asked to evaluate the importance of each strategy listed in their supplier selection activities in the past three years. Then, we executed a factor analysis with principal component method and classified the six types into two groups. The first group, which was identified as the relationship-focused strategy, includes (1) potential suppliers recommended by our friends or partners, (2) potential suppliers recommended by government or institutions, and (3) potential suppliers recommended by current suppliers (Cronbach’s alpha = .714). The second group, which was identified as the market-focused selection strategy, includes (1) media, (2) advertisement, and (3) open trade information (Cronbach’s alpha = .753).

Uncertainties Three dimensions of market uncertainties—demand uncertainty, competition intensity, and technology uncertainty—are our focus. Following Chen and Paulraj (2004), we used a three-item scale to measure the construct: (1) our demand fluctuates drastically from week to week; (2) our supply requirements vary drastically from week to week; and (3) the volume and/or composition of demand is difficult to predict (Cronbach’s alpha = .751).

Competition intensity was captured with four items (Jaworski & Kohli, 1993): (1) there is frequent promotion competition in the market; (2) there is frequent price competition in the market; (3) one hears of a new competitive move almost every day; and (4) in general, market competition our firm faces is cutthroat. (Cronbach’s alpha = .829).

The four-item scale used to measure technology uncertainty was also adopted from Chen and Paulraj (2004): (1) our industry is characterized by rapidly changing technology; (2) if we don’t keep up with changes in technology, it will be difficult for us to remain competitive; (3) the rate of process obsolescence is high in our industry; and (4) the production technology changes frequently and sufficiently (Cronbach’s alpha = .826).

For institutional uncertainty, we used a four-item scale based on Child and Möllering (2003): (1) we are not fully confident about the current legal system; (2) we are not fully confident about the national and local legislative process; (3) we are not full confident about the work of the local law enforcement agency; and (4) in general, the government officials we met are still arbitrary (Cronbach’s alpha = .900).

Internal resources Two constructs were used to assess the level and abilities of internal resources of the focal firm. For the construct of financial assets, five items were developed that asked the respondent to evaluate to what extent he or she agrees that, relative to major competitors, (1) our firm has a more positive net cash flows; (2) lower asset-liability ratio; (3) higher return on equity; (4) higher return on sale; and (5) richer financial assets (Cronbach's alpha = .865).

The four items for technological capabilities were adopted from Song et al. (2005): relative to major competitors, (1) our firm has better technology development capabilities; (2) better manufacturing processes and skills; (3) better new product development capabilities; and (4) higher investment in technology (Cronbach's alpha = .853).

Supplier performance For the construct supplier performance, we followed Chen and Paulraj (2004) to ask the respondent to evaluate the following statements: (1) our suppliers' operation performance is satisfactory; (2) our suppliers are satisfying in on-time delivery; (3) our suppliers are satisfying in delivery reliability/consistency; (4) taking one with another, the parts provided by our suppliers are of good quality; and (5) taking one with another, our suppliers provide low-cost advantage to us. (Cronbach's alpha = .878).

Control variables Three widely used control variables were selected: (1) firm age, (2) firm size, and (3) firm location. We controlled for firm age, which is the number of years elapsed since founding. Based on the official government classification of firm size, we controlled firm size using a three-point ordinal scale: 1 = large (a firm with over 2,000 employees), 2 = medium (300–2,000 employees), and 3 = small (fewer than 300 employees). We used a three-point ordinal scale to measure the location: 1 = coastal area; 2 = central area; and 3 = western area.

Common method assessment

Because the same informant is used to collect information on the independent and dependent variables, a common method bias would occur. We examined the risk of common method bias via Harman's one-factor test for all variables in the study (Podsakoff & Organ, 1986). If there is one general factor accounting for the majority of covariance in the variables, common method bias would be a concern. For our data, a factor analysis reveals a solution that accounts for 71.03 % of the total variance, and the first factor accounting for only 22.55 % of the variance. Thus, common method variance is unlikely to be a serious threat to the findings of this study.

Validation of measures

Basic statistics are shown in Table 1. Confirmatory factor analysis (CFA) was used to validate the measures. We found the ratio of χ^2 to degrees of freedom was 1.358 ($\chi^2 = 711.56$, $d.f. = 524$). A value of less than 3 for the ratio indicates a good fit (Hair,

Table 1 Means, standardized deviations, and correlations

	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	1											
2. Size	.44***	1										
3. Location	.13	.03	1									
4. Competition intensity	.03	-.05	-.12	1								
5. Demand uncertainty	-.01	-.13	-.08	.40***	1							
6. Technology uncertainty	.09	.11	.03	.31***	.23**	1						
7. Institutional uncertainty	.09	.15*	-.15*	.01	.02	.27***	1					
8. Financial assets	-.05	-.03	-.26***	.12	.25***	.19**	.33***	1				
9. Technological capabilities	-.01	-.01	-.07	.16*	.10	.46**	.38***	.47***	1			
1. Market-focused selection	-.01	.07	-.14	.29***	.26***	.26***	.06	.21**	.26**	1		
11. Relationship-focused selection	.02	.06	-.11	.17*	.34***	.14*	-.01	.22**	.15*	.42***	1	
12. Supplier performance	.07	.05	-.16*	.04	.12	.19**	.35***	.41**	.25**	.23**	.082	1
Mean	17.10	1.62	1.20	5.30	3.11	5.07	1.36	5.35	5.49	4.29	1.33	5.66
Std. Dev	14.25	.68	.45	1.17	1.15	1.18	1.02	.96	.97	4.01	1.19	.71

* $p < .05$, ** $p < .01$, *** $p < .001$.

Black, Babin, Anderson, & Tatham, 2006). Additionally, root mean square error of approximation value (RMSEA) of the model was .042 and lower than .08, which showed the reasonable fitness of the model (Hair et al., 2006). All the factors loadings were large and significant ($p < .001$). As Table 2 shows, the composite reliability (CR) and average variance extracted (AVE) for all constructs met Fornell and Larcker's (1981) recommended thresholds. Cronbach's alpha of each construct was also higher than .70, which is the benchmark suggested by Nunnally and Bernstein (1994). Table 2 shows the results of CFA.

To test for discriminant validity, we ran a series of χ^2 difference tests for all the constructs in pairs to determine whether the restricted model in which correlation specified as equal to one was significantly worse than the freely estimated model (correlation estimated freely). All χ^2 differences were highly significant (e.g., the test for marked-focused selection and relationship-focused selection yields a $\Delta\chi^2 [1] = 26.44, p < .001$). Following Hair et al. (2006), we also executed an exploratory factor analysis of constructs, including demand uncertainty, technology uncertainty, competition intensity, institutional uncertainty, financial assets, technological capabilities, supplier performance, and market-focused and relationship-focused selection. We found that all the indicators loaded significantly on their hypothesized factors ($p < .001$). There were no serious loading or cross-loading problems. Overall, the results suggest acceptable validity and reliability.

Analytic method

In this study, we propose that external uncertainties and internal resources would influence the adoption of supplier selection strategies, and further argue that supplier selection strategy adoption will influence supplier performance. Thus, market-focused and relationship-focused selection strategies are both independent and endogenous variables. In order to perform the data analysis efficiently, we use the structural equation modeling (SEM) method because of its ability to estimate a series of dependence relationships, wherein one dependent variable becomes the explanatory variable in subsequent relationships. It also allows researchers to assess the impact of explanatory variables on two or more dependent variables at the same time (Hair et al., 2006). The data analyses were performed using Amos software.

In order to explore the interactive influence of two types of supplier selection strategies on supplier performance, we needed to test the interaction effect between latent variables (i.e., market-focused and relationship-focused selection strategies) with the SEM method. Kenny and Judd (1984) recommended using products of indicators to specify the interaction construct in a structural equation model to test for the interaction effect. We adopted this approach and added an interaction construct in the testing model. The indicators of the interaction construct are the product of the indicators of market-focused and relationship-focused selection strategies. The path coefficient between the latent construct and supplier performance reflects how these two strategies interact with each other (Hair et al., 2006). Similarly, to test the proposed inverted U-shaped influence of relationship-focused selection on supplier performance, we also added a construct in the testing model. The indicators of the construct are the squared values of the indicators of relationship-focused

Table 2 Confirmatory factors analysis results

Constructs	Item	Loading	Average Variance Extracted (AVE)	Composite Reliability (CR)
Technological uncertainty	1	.80	65.7 %	.88
	2	.81		
	3	.84		
	4	.79		
Competition intensity	1	.71	6.5 %	.86
	2	.71		
	3	.91		
	4	.77		
Demand uncertainty	1	.71	53.1 %	.77
	2	.86		
	3	.59		
Institutional uncertainty	1	.86	78.4 %	.87
	2	.94		
	3	.93		
	4	.81		
Relationship-focused selection	1	.72	53.3 %	.77
	2	.87		
	3	.58		
Market-focused selection	1	.82	62.8 %	.83
	2	.93		
	3	.60		
Technological capabilities	1	.81	68.0 %	.89
	2	.87		
	3	.78		
	4	.84		
Financial assets	1	.79	68.8 %	.92
	2	.80		
	3	.93		
	4	.80		
	5	.82		
Supplier performance	1	.82	68.2 %	.91
	2	.93		
	3	.60		
	4	.82		
	5	.93		

selection strategies. The path coefficient between the latent construct and supplier performance shows whether curvilinearity exists (Hair et al., 2006).

In Hypotheses 1 and 2, we predicted that a specific type of uncertainty or internal resource drives the adoption of one strategy over the other. Thus, we need to test

whether there is a significant difference between two path coefficients. The SEM method provides a convenient way to test whether there is a significant difference between two path coefficients. This χ^2 difference test consists of three steps: (1) setting the two path coefficients as equal and running the model; (2) removing the restriction and running the model again; (3) examining whether the value of χ^2 of the restricted model (two path coefficients set as equal) was significantly higher than that of the freely estimated model (path coefficient estimated freely). If so, there is a significant difference between two path coefficients.

Results

The goodness of fit indices were the ratio between chi-square and degrees of freedom (*d.f.*) = 1.35 ($\chi^2 = 1002.78$, *d.f.* = 743), RMSEA = 0.041, TLI = 0.925, and CFI = 0.941. According to the suggestions from Hair et al. (2006) in evaluating the fitness of the model, our model is accepted. Table 3 shows the SEM analysis results.

H1 suggests that various types of uncertainties will influence the adoption of supplier selection strategy. H1a argues that firms that face a higher level of demand uncertainty are likely to adopt relationship-focused selection rather than market-focused selection. The results show that demand uncertainty exerts a positive and

Table 3 Structural equation modeling analysis results

	Dependent variables		
	Market-focused selection	Relationship-focused selection	Supplier performance
Control			
Age	-.032 (.007)	-.063 (.005)	.062 (.004)
Size	.165 (.134)	.116 (.096)	.059 (.065)
Location	-.014 (.217)	.040 (.180)	-.128 (.109)
Main effects			
Demand uncertainty (H1a)	.268 (.070)**	.224 (.075)*	
Competition intensity (H1b)	.356 (.135)**	.113 (.080)	
Technological uncertainty (H1c)	.322 (.097)**	.057 (.062)	
Institutional uncertainty (H1d)	-.023 (.101)	.207 (.088)**	
Financial assets (H2a)	.146 (.187)	.474 (.183)**	
Technological capabilities (H2b)	.236 (.138)**	-.157 (.114)	
Market-focused selection (H3)			.571 (.074)***
Relationship-focused selection (H4)			-.430 (.084)**
Squared relationship-focused selection (H4)			-.012 (.071)
Interaction between market-focused and relationship-focused selection (H5)			.321 (.319)*

The entries in the table are standardized path coefficients (β) with standard errors in parentheses.

* $p < .05$, ** $p < .01$, *** $p < .001$.

significant influence on relationship-focused selection ($\beta = .224, p < .05$). However, demand uncertainty also exerts a positive and significant influence on market-focused selection ($\beta = .268, p < .01$). The further χ^2 difference test indicates there is no significant difference between these two path coefficients. Thus, H1a is not supported.

H1b suggests that firms that face a higher level of competition intensity are more likely to adopt market-focused selection rather than relationship-focused selection. The result indicates that the relationship between competition intensity and market-focused selection is positive and significant ($\beta = .356, p < .01$). However, the relationship between competition intensity and relationship-focused selection is not significant ($\beta = .113, p > .05$). We further ran the chi-square difference test. The results show that the χ^2 value of restricted model is significant higher than that of free estimated model ($\Delta\chi^2 = 5.60, p < .05$). As a result, H1b is supported.

In H1c, we argue that firms that face a higher level of technology uncertainty are more likely to adopt market-focused selection than relationship-focused selection. The results indicate that the path coefficient between technology uncertainty and market-focused selection is positive and significant ($\beta = .322, p < .01$). At the same time, the path coefficient between technology uncertainty and relationship-focused selection is not significant ($\beta = .057, p > .05$). The χ^2 difference test also shows a significant difference between two path coefficients ($\Delta\chi^2 = 7.78, p < .01$). Thus, H1c is supported.

In H1d, we argue that firms that face a higher level of institutional uncertainty are more likely to use relationship-focused selection. The results show that the impact of institutional uncertainty on relationship-focused selection is positive and significant ($\beta = .207, p < .01$). However, institutional uncertainty does not appear to influence market-focused selection ($\beta = -.023, p > .05$). The χ^2 difference test further indicates a significant difference between two path coefficients ($\Delta\chi^2 = 4.22, p < .05$). Therefore, H1d is supported.

H2a suggests that firms having superior financial assets and technological capabilities are more likely to use relationship-focused selection. The results show that the influence of financial assets on relationship-focused selection is positive and significant ($\beta = .474, p < .01$). However, the influence of financial assets on market-focused selection is insignificant ($\beta = .146, p > .05$). The $\Delta\chi^2$ is 4.09 and significant at $p < .05$ level. As a result, H2a is supported.

H2b argues that firms having superior technological capabilities tend to adopt a market-focused selection strategy rather than a relationship-focused selection strategy. The results shows that the influence of technological capabilities on market-focused selection is positive and significant ($\beta = .236, p < .01$), while its influence on relationship-focused selection is not significant ($\beta = -.157, p > .05$). The χ^2 difference is 9.141 and significant at $p < .01$ level. Thus, H2b is supported.

Concerning the impact of supplier selection strategy on supplier performance, H3 suggests that there is a positive relationship between market-focused selection and supplier performance. The results support H3 ($\beta = .571, p < .001$). H4 argues that there is an inverted U-shaped relationship between the adoption of relationship-focused selection and supplier performance. From Table 3, we find that the relationship-focused selection squared parameter is not significant ($\beta = -.012, p > .05$). Thus, H4 is not supported. However, we find the linear influence of relationship-

focused selection on supplier performance is negative and significant ($\beta = .430, p < .01$). We further tested whether the influences of market-focused selection is significantly stronger than that of relationship-focused selection. The result supports the view by showing $\Delta\chi^2$ is 19.44 and significant at $p < .001$ level. H5 suggests that market-focused and relationship-focused selection strategies interact positively in influencing supplier performance. The results show that the interaction parameter is significant ($\beta = .321, p < .05$). Therefore, H5 is supported.

Discussion

Contributions

This article has addressed two crucial questions on the antecedents and outcome of supplier selection strategy adoption. Four contributions emerge. First, we address the first question on antecedents by articulating that external uncertainties a firm faces and internal resources it possesses have a bearing on the adoption of a supplier selection strategy. Our arguments highlight the explanatory and predictive power of the uncertainty-based and resource-based views in examining the antecedents of supplier selection strategy. Confronting the second question, we advance the theoretical argument that the effect of market-focused selection on supplier performance is positive, but that of relationship-focused selection is shaped like an inverted U. Further, market-focused and relationship-focused selection strategies interact positively in influencing supplier performance.

Second, this article underscores the important role that uncertainty plays in influencing firms' adoption of supplier selection strategy during transitions in an emerging economy. One the one hand, we find that three primary dimensions of market uncertainty—namely, demand uncertainty, competition intensity, and technology uncertainty—exert different influences on supplier selection strategy: (1) competition intensity and technology uncertainty boost the use of market-focused selection over relationship-focused selection; and (2) demand uncertainty drives the simultaneous use of market-focused and relationship-focused selection. Much research has suggested that higher levels of market uncertainty will drive a firm to reinforce current external ties by selecting exchange partners (Beckman et al., 2004; Meuleman et al., 2010). By focusing on supplier selection in China, we find that market uncertainty will not necessarily lead to a simple and consistent preference pattern of firms for market- and relationship-focused selection strategies. On the other hand, our results show that institutional uncertainty will boost the use of relationship-focused selection over market-focused selection. This study provides evidence for the claim that in a weak institutional environment, relying on social relationships is a preferred approach when initiating interfirm exchanges (Peng & Luo, 2000; Zhou & Peng, 2010).

Third, this study shows that a firm's internal resources influence the adoption of supplier selection strategies. As we predicted, firms having superior financial assets tend to adopt relationship-focused selection, while firms with superior technological capabilities are more likely to adopt market-focused selection than relationship-focused selection. The findings highlight the different roles of the buyer firm's

financial assets and technological capabilities in supplier selection decision in emerging economies. On the one hand, financial assets enable a buyer firm to establish and maintain adequate social relationships, and hence support the use of relationship-focused selection. On the other hand, superior technological capabilities enable the buyer firm to identify and value novel knowledge from suppliers being selected through a market-focused strategy.

This study represents a novel way toward applying the RBV in the study of supplier selection. According to the view, achieving *fit* between partners in resource profiles is a critical driver of supplier selection decision (Hitt et al., 2000; McIvor, 2009; Shah & Swaminathan, 2008). Thus, not only the resource profile of potential partners, but also that of the focal firm should be taken into account in partner selection (Song, Song, & Di Benedetto, 2011). However, existing research largely focuses on the characteristics of suppliers' resource profile (Choi & Hartley, 1996; Prahinski & Benton, 2004) while overlooking that of the buyer firm. We have limited knowledge on whether and how the buyer firm's internal resources affect supplier selection decisions. By examining the influences of the buyer firms' financial assets and technological capabilities on the adoption of supplier selection strategy, this study advances the implications of the RBV on supplier selection research in a unique context (i.e., China's emerging economy).

Finally, this study provides insights into the effectiveness of market-focused and relationship-focused selection strategy in a major emerging economy. We find that market-focused selection correlates positively with supplier performance. Although we anticipated an inverted U-shaped influence of relationship-focused selection on supplier performance, our results indicate that the influence is negative and linear. A plausible explanation is that in China's emerging economy, the extent of firms relying on social relationships in supplier selection is much higher than that in mature economies (Lovett et al., 1999). In this context, the "darkside" of relationship-focused strategy would outweigh its advantages in facilitating cooperation and depressing potential opportunisms of supplier in exchanges. This study also reveals that combining market-focused and relationship-focused selection strategies improves supplier performance in the context of emerging economies. The result is consistent with those from Uzzi (1999) who argued that relying on arm's-length and embedded ties simultaneously in partner selection will benefit the focal firm.

There is a debate on market-focused versus relationship-focused strategies both in mature economies (Anderson & Jap, 2005; Dyer, 1997; Uzzi, 1997) and in emerging economies (Peng, 2003; Peng & Luo, 2000). Some scholars believe that adopting a market-focused selection strategy result in superior supplier performance because it optimizes the bargaining power of the buyer firm against suppliers (Krause, Scannell, & Calantone, 2000; Williamson, 1985), while others contend that embedded ties stemming from relationship-focused strategy will outperform arms'-length ties from market-focused strategy (Uzzi, 1999). Joining the debate from an emerging economy, our study provides empirical evidence suggesting that market-focused selection does correlate positively with supplier performance, while insisting on a relationship-focused strategy in supplier selection may eventually impair supplier performance.

Limitations and future research directions

Both theoretical and empirical limitations suggest a variety of future research directions. Theoretically, we have adopted uncertainty-based and resource-based views to examine the antecedents of supplier selection. It would be valuable to further integrate these two views to examine whether external uncertainties and internal resources interact with each other in influencing the adoption of supplier selection strategy. In addition, other perspectives, such as transaction cost economics and social capital theory, can be invoked. It may be useful for future researchers to assess the relative weight of these different theoretical factors.

Empirically, limiting our study to China leaves open the question of how generalizable our findings are in other countries. Since China itself is undergoing rapid transitions, its legal framework, although still primitive by Western standards, has improved significantly, thus facilitating a great deal more market-based transactions (Peng, 2003). It remains to be seen whether our China-based findings can be supported in other emerging economies or in China itself several years down the road using longitudinal methods.

Conclusion

This article has examined the antecedents and outcomes of supplier selection strategy in China's emerging economy. Both external uncertainties and internal resources drive the adoption of supplier selection strategies. The influence of a market-focused selection on supplier performance is positive and significant, while that of relationship-focused strategy is negative. Further, we find that the interaction between two types of supplier selection strategies will improve supplier performance.

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