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Reexamining the relationship between control mechanisms and international joint venture performance: The mediating roles of perceived value gap and information asymmetry

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ABSTRACT

According to transaction cost theory, the risk of opportunism is a major obstacle to cooperative relationships, such that multinational corporations need to exert control over their international joint ventures (IJVs). However, inconsistent findings indicate that the control–performance linkage is complex and poorly understood. This study develops a mediating framework and suggests that perceived value gap and information asymmetry have a direct effect on IJV performance. Perceived value gap and information asymmetry can also mediate the relationship between control mechanisms (e.g., centralization, formalization, and socialization) and IJV performance. A sample of 152 Taiwanese IJVs in China showed that the direct effects of formalization and socialization on IJV performance satisfaction were significant. The empirical results showed that information asymmetry and perceived value gap mediated the formalization–performance and socialization–performance relationships. However, neither the direct effect of centralization nor the indirect effect through information asymmetry mediation on IJV performance was significant.

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1. Introduction

The formation of an international joint venture (IJV) is an important market entry strategy that has been adopted by many multinational corporations (MNCs) in the course of their global expansions (Gong, Shenkar, Luo, & Nyaw, 2007; Makino, Chan, Isobe, & Beamish, 2007). To realize the potential for joint value creation, partners must exchange information, share knowledge, and make investments. Due to the possibility of opportunism, however, investing valuable assets and sharing proprietary knowledge with the other partner(s) may expose each party to a certain degree of risk (Parkhe, 1993; Zeng & Chen, 2003). Luo (2007a) defined opportunism in the context of IJVs as acts or patterns of behavior performed by specific parties from specific countries to obtain unilateral gains to the substantial detriment of

other parties from other countries. When entering into a voluntary interorganizational arrangement such as an IJV, assets are located overseas, a focal parent becomes vulnerable to the actions of the other partner, and the risk of expropriation or opportunism is greater than it would be in a domestic context (Ertug, Cuypers, Noorderhaven, & Bensaou, 2013; Pangarkar & Klein, 2004). There is therefore a need for control mechanisms, which can be classified as centralization, formalization, and socialization according to their objective of control over actions, results, and personnel/culture (Li, Tang, Okano, & Gao, 2013). There is also a need to reduce transaction costs and enhance parent satisfaction by decreasing the likelihood of opportunism (Deitz, Tokman, Richey, & Morgan, 2010; Fryxell, Dooley, & Vryza, 2002; Luo, Shenkar, & Nyaw, 2001; Mesquita & Brush, 2008; Pangarkar & Klein, 2004). The purpose of control is to protect an MNC's own interests while simultaneously trying to overcome a partner's opportunistic behavior (Calantone & Zhao, 2000; Ren, Gray, & Kim, 2009), which can be considered as an antecedent of IJV performance (Christoffersen, 2013; Reus & Rottig, 2009; Selekler-Gökşen & Uysal-Tezölmez, 2007). IJV control is very important to explaining IJV performance and to IJV success (Liu, Vredenburg, & Steel, 2014).

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There are many studies of—and numerous efforts to explore—the relationships between control mechanisms and IJV outcomes that enhance our understanding and knowledge of international alliances, the causes and consequences of the MNC–subsidiary relationship, and the organizational design of international business. However, the theoretical arguments and empirical findings remain incongruent. For example, Newburry, Zeira, and Yeheskel (2003) showed that IJVs located in China with authority are more effective in the formulation and implementation of strategic plans. Zhang and Li (2001) indicated that autonomy and success are related to IJV performance. However, Lu and Lee (2005) reported that the impact of centralization on IJV performance satisfaction is insignificant. The meta-analysis of Reus and Rottig (2009) indicated that hierarchical control may theoretically have positive or negative effects on performance. In mainland China, Calantone and Zhao (2000) indicated that the control–performance relationship is insignificant for Japanese IJVs in China; however, for Korea and the USA IJVs, it is positive. Reus and Rottig (2009) report that hierarchical control has an insignificant direct effect on performance in the Chinese sample but a significant effect in the non-Chinese sample. Some studies indicate that formal control mechanisms can enhance IJV performance (Gong et al., 2007; Perrone, Zaheer, & McEvily, 2003), while other studies report inconsistent results (Fryxell et al., 2002; Inkpen & Currall, 2004; Nohria & Ghoshal, 1994). Luo and Park (2004) confirm the positive relationship between socialization and IJV performance. However, the empirical results of Fryxell et al. (2002) show only a marginally significant positive relationship between socialization and IJV performance. These studies provide important insights and syntheses, but they do not provide conclusive evidence of control–performance relationship (Liu et al., 2014). These inconsistent findings indicate that the control–performance linkage is complex and poorly understood. The relationship between control mechanisms and IJV performance remains unclear (Pangarkar & Klein, 2004). We still have only a limited understanding of the process by which specific control mechanisms function.

Through a careful review of the literature, this study identifies three research gaps. First, opportunism is a critical assumption of human behavior in transaction cost theory, and the potential for opportunism plays an important role in IJV success (Geringer & Hebert, 1989). Opportunism creates a need for *ex ante* and *ex post* safeguarding, including formal and social governance structure (Nakos & Brouthers, 2008; Subramani & Venkatrman, 2003). However, potentially opportunistic partners do not necessarily behave opportunistically. This observation raises the question of why opportunistic behavior occurs. We contend that the *perceived value gap* and *information asymmetry* are two critical conditions that may induce opportunistic behaviors (Williamson, 1985). Seetoo and Hsiung (2004) refer to the perceived value gap as the extent to which common goals or shared values diverge among partners, and they identify information asymmetry as the level of information distribution asymmetry throughout the alliance. Control mechanisms must overcome these two antecedents to prevent opportunistic behavior. Little systematic empirical research has been conducted to test the effects of control mechanisms on the perceived value gaps and information asymmetry. Second, many studies assume that if a value gap and information asymmetry exist among partners, control mechanisms will have direct positive effects on IJV performance. The indirect effects of control mechanisms on an IJV's outcome through a reduction in the value gap and information asymmetry are treated as given and ignored. Therefore, few studies have precisely measured the extent of value gap incongruence and information asymmetry or clarified the way in which the control–performance relationship of an IJV is affected by the value gap and information asymmetry among partners. Given

the importance of control mechanisms in IJVs, how they function should be addressed systematically. However, there is little research on how control mechanisms have been executed in practice (Li et al., 2013). Finally, the definitions of control mechanisms differ such that the empirical results are difficult to compare. Ren et al. (2009) suggested that making distinctions among control mechanisms and understanding the impact of each mechanism on IJV performance to enrich our understanding could be necessary for future studies.

To answer the question of how MNCs can effectively coordinate and control IJVs, we suggest that the underlying reasons for opportunism should be taken into account. Based on transaction cost theory and the information process perspective, this study proposes a conceptual model to examine whether parent companies' control mechanisms could enhance the performance of an IJV by reducing the perceived value gap and information asymmetry among partners. In our view, information asymmetry and the perceived value gap have a significant mediating effect on the relationship between control mechanisms and IJV performance. The IJV approach is particularly prevalent among MNCs in the Chinese market (Chan, Luk, & Wang, 2005; Li et al., 2013). A sample of 152 IJVs in China involving a Taiwanese parent company confirmed the mediating effects of a perceived value gap and information asymmetry on the relationships between control mechanisms and IJV performance. This paper proposes a theoretical model and contributes to the literature on the control–performance relationship of IJVs in the following ways: (1) testing the effects of control mechanisms on value gap and information asymmetry reduction, which allowed us to address the issues of opportunistic behavior and IJV management; (2) clarifying the direct and indirect relationships between control mechanisms and IJV performance through this theoretical framework to enhance our understanding of the control–performance link.

The remainder of this paper is organized as follows. In the next section, we review the relevant literature, discuss the main study concepts, and explain the theoretical basis for the hypothesized relationships. In the methodology section, we describe the sample, the measures used, and the statistical methods. In the results section, we present the statistical relationships that were observed among the control mechanisms, perceived value gap, information asymmetry, and IJV performance. Finally, we present the conclusions, explain the theoretical implications, and discuss the practical implications of our findings.

2. Theoretical background and hypotheses

2.1. Facilitating conditions of opportunistic behavior

Transaction cost theory defines opportunism as seeking self-interest with guile (Williamson, 1985), with decision-makers showing a tendency to exploit their positions to advance their own self-interest (Das & Rahman, 2010; Rindfleisch & Heide, 1997; Tsang, 2006). This phenomenon provides a foundation for IJV control theory (Deitz et al., 2010). The potential for opportunism arises when one party is vulnerable to the actions of another, whose behavior is not under its control (Parkhe, 1993). The formation of a joint venture naturally gives rise to many opportunities for opportunism (Morris & Cadogan, 2001). While opportunism is the cause and antecedent of a partner's opportunistic behavior (Rindfleisch & Heide, 1997), opportunism *per se* is not a sufficient condition for opportunistic behavior. Certain critical conditions or facilitators should exist for the actual occurrence of this behavior. Opportunistic behavior is most likely to appear in two situations. The first such situation occurs when the partners lack common objectives or shared values. The larger a partner perceives a value

gap in the difference among partners regarding common goals and shared values (Seetoo & Hsiung, 2004), the higher the perceived value gap and the likelihood of opportunism will be. The second situation occurs when there is information asymmetry among partners. Williamson (1985) noted that opportunism results from the incomplete disclosure of information. Information asymmetry creates an opportunity for a party to engage in opportunistic behavior, which may not be sensed by the other parties. Therefore, the possibility of opportunistic behavior rises in accordance with any increase in the perceived value gap and information asymmetry.

2.1.1. Information asymmetry

Bounded rationality is the assumption that decision makers face constraints to their information-processing and communication abilities, which limit their rationality (Rindfleisch & Heide, 1997). The exchange of information may reinforce the connection between the parent and the subsidiary and improve cooperation, but incomplete or misleading information may cause opportunistic behavior to occur more frequently (Williamson, 1985). Deliberately withholding information in a joint venture relationship is an unhealthy behavior that usually causes misunderstandings, incorrect expectations, and dysfunctional conflict among partners that increase coordination costs and reduce the decision-making quality (Bennet & Cadogan, 2001; Kwon, 2008; Morris & Cadogan, 2001).

Information is generally not symmetrically distributed among all of the parties to a transaction (Mishra, Heide, & Cort, 1998). Information asymmetries exist in all exchange relationships and are accentuated in and IJV as each parent brings very different perspectives, priorities, and quality of resources to decision making (Yan & Child, 2004). In a transactional or cooperative relationship, if the parties are not equally familiar with the details of a situation, the flow of information is likely to be blocked. In strategic alliances, the lack of sufficient information may make it difficult for one party to predict and respond to the other party's self-interest seeking action (Glaister, Husan, & Buckley, 2003a). Hence, transaction cost theory treats information asymmetry as a primary cause of opportunistic behavior (Williamson, 1985). Information asymmetry makes it difficult for one party to detect the other party's opportunism, which results in an increase in monitoring costs (Wathne & Heide, 2000). The increasing need for monitoring and coordination results in higher transaction costs and inhibits joint venture success. Therefore, we propose that information asymmetry will have detrimental effects on the performance of an IJV.

H₁: Ceteris paribus, information asymmetry is negatively related to IJV performance.

2.1.2. Perceived value gap

The operation of IJVs is strongly affected by the partners' values, practices, and management systems (Danis & Parkhe, 2002). Because each partner may have unique interests and goals for the IJV, differences in values are very common. For instance, the Chinese partners in US-Sino joint ventures are often interested in acquiring management know-how and advanced technology, but the foreign partners are often more interested in obtaining access to the Chinese domestic market and cheap labor (Chan et al., 2005). Ouchi (1980) noted that common values and beliefs can provide the type of harmony of interests that eliminates the possibility of opportunistic behavior. A set of shared values and non-legal sanctions in the form of relational norms encourages partners to commit to their exchange relationship, restricts the partner firms from acting opportunistically (Huang, Cheng, & Tseng, 2014), and facilitates partner cooperation (Zeng & Chen, 2003). To avoid

opportunistic behavior, the IJV management process requires participating partners to establish a clearly shared strategic vision (Glaister et al., 2003a). The absence of shared values signifies the existence of a value gap among partners and may breed opportunistic motives (Seetoo & Hsiung, 2004).

In IJVs, the behavior of the collaborating partners usually affects collaborative performance and satisfaction. In the presence of opportunistic tendencies and competitive threats, it is difficult for partners to develop collaboration (Park & Ungson, 2001). To avoid opportunistic behaviors and alliance failures, it is quite important for the partners to reduce goal divergence and to build shared values (Ouchi, 1980). Shared values represent the collective goals and aspirations of organizational members. The establishment of shared values in the form of relational norms represents a value gap that is less perceived among IJV partners. If partners have shared values, each partner is less likely to sacrifice the other party's interests in pursuit of its own separate goals or ambitions.

When organization members share common perceptions about the way they should interact with one another, they can avoid potential misunderstandings and gain more opportunities for the free exchange of ideas or resources (Tsai & Ghoshal, 1998). In contrast, if partners have major differences in terms of their strategic goals and management styles, their negotiation costs and transaction costs may increase (Fryxell et al., 2002; Seetoo & Hsiung, 2004), and the IJV performance may be impaired (Pangarkar and Klein, 2004). The establishment of shared values in the form of relational norms, which lessen perceived value gaps, encourages partners to commit to their exchange relationship and prevents partner firms from acting opportunistically (Das & Teng, 2001; Liu, Luo, & Liu, 2009; Tangpong, Hung, & Ro, 2010). Therefore, according to transaction cost theory, we expect there to be a negative relationship between the perceived value gap and IJV performance.

H₂: Ceteris paribus, the perceived value gap is negatively related to IJV performance.

2.2. The mediating role of the perceived value gap and information asymmetry

How to handle the problem of opportunism is a crucial concern for organizations with a hybrid governance structure (Luo, 2005). To a greater or lesser extent, the parent companies of an IJV must implement certain control mechanisms. These are either organizational or structural arrangements or processes by which a party can influence the behavior and output of another party through the use of power, authority, and a wide range of bureaucratic, cultural, and informal mechanisms (Calantone & Zhao, 2000; Fryxell et al., 2002; Geringer & Hebert, 1989; Pangarkar & Klein, 2004) as safeguards to reduce transaction costs and protect their interests against opportunism (Mesquita & Brush, 2008). Control involves the monitoring process and consists of formal control (bureaucratic control) and informal control (culture control) (Baliga & Jaeger, 1984). Drawing on the relevant research, we selected three types of control mechanisms (namely, centralization, formalization, and socialization) as our independent variables (Fryxell et al., 2002; Geringer & Hebert, 1989; Li et al., 2013; Nobel & Birkinshaw, 1998; Sundaram & Black, 1992). Adequate control mechanisms may have several important functions, such as increasing the transparency of partners' behavior (Parkhe, 1993), preventing cheating and moral hazards (Rindfleisch & Heide, 1997), achieving expected objectives, and ensuring that the IJV can faithfully pursue strategies that conform to the interests of the parent companies (Pangarkar & Klein, 2004). We predicted that these types of controls could enhance IJV performance by reducing the perceived value gap and information asymmetry.

2.2.1. Centralization and information asymmetry

The allocation of decision rights is a means of safeguarding (Schepker, Oh, Martynov, & Poppo, 2014). Centralization refers to the amount of decision-making power each parent company exercises with regard to the venture's daily operations (Yan & Gray, 2001). Centralization means that middle and lower-level managers have relatively limited authority or freedom to make strategic and operational decisions independently of the parent companies (Baliga & Jaeger, 1984; Glaister, Husan, & Buckley, 2003b; Newbury et al., 2003; Nobel & Birkinshaw, 1998; Reus & Rottig, 2009). Through centralization, an MNC can determine the manner in which IJV activities are performed so that the IJV is in line with its own objectives (Reus & Rottig, 2009; Yan & Gray, 2001) and positively related to parent-subsidiary integration (Newbury et al., 2003).

Control rights may also include monitoring provisions to provide behavioral control (Schepker et al., 2014). Centralization is therefore a crucial dimension in the structural design of MNCs, which can affect the capacity and capability of information processing (Tushman & Nadler, 1978). For an MNC to make strategic decisions and maintain adequate control, it is important to gather sufficient information about the IJV and its partners from subsidiaries. However, some scholars have indicated that centralization might reduce the autonomy or freedom of an IJV subsidiary, thus adversely affecting the performance (Newbury et al., 2003). However, we believe that through effective communication and efficient information systems, the potential side effects of centralization can be overcome.

To increase the awareness of strategic development and enhance the understanding of foreign business operations, an MNC needs to build an effective information reporting system that can capture key information from its IJV subsidiaries and partners (Yan & Child, 2004). The complete information-processing system of MNCs involves the gathering, interpretation, synthesis, and storage of information within the headquarters and in the subsidiaries (Egelhoff, 1982; Tushman & Nadler, 1978). Structural features are the sources of organizational information-processing capability in terms of information acquisition, analysis, and interpretation (Carson, Madhok, Varman, & John, 2003). MNCs can communicate their expectations to IJV managers and partners through the planning and budgeting process as well as through the particularly important business plan agreed upon through the board (Glaister et al., 2003b). IJV managers provide necessary information through the board, and they act in the way expected of them (Glaister et al., 2003b). Centralization is likely to lead to a clear understanding between the elements of the IJV system and decrease the information gap among partners.

Information processing can be conducted more easily in a centralized organization than in one that is decentralized. Furthermore, a regular, frequent, and compulsory flow of information between the parent company and the subsidiary helps to reduce information asymmetry that results in minimizing the possibility of hiding and cheating among MNCs and its partners. Thus, higher degrees of parent control are associated with greater performance (Quer, Claver, & Rienda, 2007). *Ceteris paribus*, MNCs that are centralized may possess more information about the policies, operations, and decision-making processes of their IJVs, and they can grasp their partners' intentions and behaviors more effectively (Chang & Taylor, 1999) and thus increase performance satisfaction. Hence, we propose the following hypothesis.

H₃: Through the mediation of information asymmetry among IJV partners, centralization has a positive association with IJV performance.

2.2.2. Formalization, perceived value gap and information asymmetry

Baliga and Jaeger (1984) treat formalization as a type of bureaucratic control that consists of using limits and an explicit set of rules and regulations to delineate the desired performance in terms of output and/or behavior. Formalization emphasizes these matters through contracts, formal written procedures, policies, and individual performance appraisals (Wang & Fulop, 2007). Formal control mechanisms provide a justification for a parent company to trace its subsidiaries' moves or actions. Formalization provides an opportunity and a channel for MNCs to communicate with their partners and share critical information. Formalization focuses on the information of a firm's operation process and uses objectives to measure the accuracy and completeness of business activities (Liu et al., 2014). Establishing a formal reporting system facilitates the flow of information feedback between parent companies and their IJV subsidiaries, and it also helps a parent company to monitor and coordinate the activities of its IJV partners. Thus, frequent communication through formal mechanisms enhances the transparency of partner actions (Chalos & O'Connor, 2004), which may result in lower information asymmetry.

Control rights can include monitoring provisions to provide behavioral control (Schepker et al., 2014). The concept of formalization focuses on monitoring and reporting the operational process of business activities to increase information transparency and decrease the misunderstanding among MNCs, IJVs, and other partners. Therefore, formalization provides a communication tool to enhance information-processing capabilities for the transmission of information from one party to another (Camén, Gottfridsson, & Rundh, 2011). Formalization facilitates key information capturing and affects an MNC's ability to monitor, coordinate, and integrate activities within the context of an IJV (Yan & Child, 2004). Information asymmetry among partners can be decreased through formalization and monitoring (Seetoo & Hsiung, 2004).

When deliberate control and information-gathering procedures are in place, the partners' tendency toward opportunism can be identified more easily, such that the likelihood of opportunistic behavior is reduced (Fryxell et al., 2002). Hence, effective formal control mechanisms can enhance IJV strategy implementation and strategic competitiveness (Yan & Child, 2004). Because formalization increases the information-processing capability of MNCs, we suggest that the exercise of formal control mechanisms can reduce information asymmetry among partners and enhance the effectiveness of management control. Accordingly, we propose the following hypothesis:

H₄: Through the mediation of information asymmetry among IJV partners, formalization has a positive association with IJV performance.

The formalization mechanism involves optimizing decision making by relying on formal records and procedures (Sundaram & Black, 1992). Regarding the role and consequences of formalization in IJV management, there are two opposing perspectives in the existing literature.

On one hand, some studies tend to support the view that formalization negatively influences the perceived value gap. First, formalization involves the development of clear and well-documented policies, procedures, and operating rules (Martinez & Jarillo, 1997), which help to clarify the exchange partner roles and expectations and provides clarity regarding the terms, remedies and conflict resolution procedures (Tangpong et al., 2010). Therefore, formalization also promotes communications among partners, which reveals an openness and willingness to rely on the

other partners (Costa e Silva, Bradley, & Sousa, 2012). Formalization enhances institutionalized practices and routines for dealing with a partner organization, creating a stable context within which interorganizational and interpersonal trust can be developed (Zaheer, McEvily, & Perrone, 1998). This type of trust is beneficial to the development of common goals and shared values. Furthermore, in the process of documentation or institutionalization, IJV partners must communicate and clarify their specific needs and objectives. The communication and clarification process can push IJV partners to achieve consensus on strategic goals and to specify the behavior that is required in the form of rules or an explicit program (Nobel & Birkinshaw, 1998). Trust enhances the belief that a partner will perform actions that will result in positive outcomes and will not perform unexpected actions that will result in negative outcomes (Kwon, 2008). Once trust, shared values, and a relational norm are established, which means a lower perceived value gap, partners may be reluctant to behave opportunistically (Liu et al., 2009). Formalization as a control mechanism would carry a cost to build, which would increase its monitoring cost. Through the development of shared value, relational norms, and trust, which operate as self-enforcement safeguards and a less costly governance alternative (Poppo & Zenger, 2002), partners can cooperate to offset the weaknesses of formalization (Liu et al., 2009). Therefore, we propose that formalization can decrease the value gap among IJV partners, which lowers the likelihood of opportunism. IJV performance can be enhanced by formalization through a reduction of the value gap.

H_{5a}: Through the mediation of the perceived value gap among IJV partners, formalization has a positive association with IJV performance.

On the other hand, some studies do not support the notion that formalization helps to reduce the value gap. Formalization causes decision-making to be routinized through rules and procedures (Nobel & Birkinshaw, 1998). Although *ex ante* and *ex post* safeguarding can mitigate opportunism, several researchers (Inkpen & Currall, 2004; Nohria & Ghoshal, 1994) argued that formalization does not necessarily contribute to the development of shared values. Inkpen and Currall (2004) noted the fact that trust develops more slowly in the context of extensive formal control. Luo and Park (2004) argued that formalized control is often exercised because of a lack of trust. Furthermore, the troublesome processes of formalization and institutionalization may reduce participants' intentions to engage in repeated renegotiation to accommodate the changing expectations of their partners (Fryxell et al., 2002). Relying on formal control may also cause partners to neglect the importance of creating a compatible, harmonious, and considerate cultural environment. The likelihood of opportunism is unlikely to be decreased when an MNC exerts formal control over its IJV. Thus, we provide a competing hypothesis as follows.

H_{5b}: Through the mediation of the perceived value gap among IJV partners, formalization has a negative association with IJV performance.

2.2.3. Socialization, the perceived value gap, and information asymmetry

Social control mechanisms usually have positive effects on information sharing and two-way communication among partners (Ertug et al., 2013). For example, transferring and rotating managers between the headquarters and subsidiaries can create verbal information channels (Baliga & Jaeger, 1984; Edström & Galbraith, 1977). Frequent meetings and planned visits between IJV

managers and headquarters personnel can enhance information sharing and collaboration (Chalos & O'Connor, 2004). Furthermore, expatriates and boundary spanners with good socialization training can develop shared norms and a collective culture. These practices and interactions help IJV partners communicate more openly and honestly, thus ensuring that they will be willing to share more sensitive information.

Ahuja and Galvin (2003) observed that applying social control mechanisms can improve performance and members' ability to communicate. Good communication results from consistently and clearly informing the partner about information that is relevant to cooperation (Glaister et al., 2003a). Frequent communication can increase the transparency of partners' actions (Chalos & O'Connor, 2004) and improve each partner's ability to understand and predict the behavior of the opposite party (Das & Teng, 1998). In summary, by creating an open and cordial atmosphere, social control mechanisms help to improve trust and lower both the cost of information sharing and the level of information asymmetry among partners (Luo, 2007b) as well as mitigate potential concerns of opportunism and reduce transaction costs to improve IJV performance satisfaction. Accordingly, we propose the following hypothesis.

H₆: Through the mediation of information asymmetry among IJV partners, socialization has a positive association with IJV performance.

Socialization is associated with the development of shared norms and a collective culture. Through socialization, JV managers learn to share common attitudes and knowledge of the organization (Chalos & O'Connor, 2004). In the context of IJVs, socialization in a subsidiary can be achieved in a variety of ways, such as through instruction in the parent company's rules and procedures (Gupta & Govindarajan, 1991), structured personnel interactions (Fryxell et al., 2002), and the rotation of personnel in key managerial positions between the parent company and the subsidiaries (Chalos & O'Connor, 2004; Edström & Galbraith, 1977; Selekler-Gökşen & Uysal-Tezölmez, 2007). Strong supportive personal relationships between senior managers lead to partners' understanding and commitment to the IJV (Glaister et al., 2003a). The appointment of key personnel by MNCs may act as boundary spanners for transferring MNCs' culture and policies to align their objectives with IJVs and other partners (Selekler-Gökşen & Uysal-Tezölmez, 2007). Underlying the use of expatriate staffing as a culture control mechanism is evidence that this leads to a better transmission of common values and goals between foreign and local partners (Chalos & O'Connor, 2004). Through its *Hamburger University*, McDonald's delivers its business skill and promotes its corporate philosophy (Wathne & Heide, 2000). Socialization in a partnership can also be achieved through reciprocal business skill training, mutual technical development, frequent managerial contacts, and exercises involving relational behavior (Dong, Tse, & Cavusgil, 2008; Yilmaz, Sezen, & Ozdemir, 2005).

The aim of socialization is to encourage the alignment of partner values and interests (Chalos & O'Connor, 2004), which reduces the likelihood of opportunism and enhances IJV performance. The existing literature provides cues and evidence to explain the positive link between socialization and shared values among partners. First, a number of studies have found that socialization can help partners create convergent goals and avoid opportunism (Dong et al., 2008). Through socialization, personal familiarity, problem solving, norms, identity, and cohesion can be created (Ahuja & Galvin, 2003; Şengün & Wasti, 2009), and members can become more committed to their organization and share views that strongly influence their behaviors (Das & Teng, 2001). Second, the

personal and social relationships among the managers of cooperative partners are crucial to resolving disputes and reducing goal discrepancy (Glaister et al., 2003a; Wathne & Heide, 2000). Third, cultural values and mindsets relating to specific issues can be disseminated among partners through the repeated interactions of their personnel over time and can thus become systematized and shared (Baliga & Jaeger, 1984; Hult, Ketchen, & Slater, 2004). Accordingly, we propose the following hypothesis.

H₇: Through the mediation of the perceived value gap among IJV partners, socialization has a positive association with IJV performance.

3. Method

3.1. Data collection

The sampling frame of this study came from the 2005 *Approved Foreign Investment* list published by the Investment Commission, Ministry of Economic Affairs, Taiwan. To control cultural or contextual factors, we selected only IJVs that were set up in China. For each of these IJVs, one of the parent companies was a Taiwanese MNC. Some previous studies suggest that if the ownership of any parent is below 20% or over 80%, a partnership cannot be treated as an IJV (Choi & Beamish, 2004). Based on this criterion, we eliminated certain IJVs from the sample and were left with 692 IJVs. The data collection comprised two stages. In the first stage, each IJV was contacted via fax and telephone. Owing to problems such as incorrect telephone numbers and addresses or the IJV business having closed, only 652 IJVs were contacted. Of these IJVs, 357 companies promised to participate in this study, representing a participation rate of 54.8%. In the second stage, 357 questionnaires were sent to these companies. Informants were asked to select an important IJV as reference to answer our questionnaire. A total of 152 complete responses were received after several follow-ups, representing a response rate of 42.6%.

Among the 152 participating IJVs, 12 are involved in chemistry, 12 in food, 11 in machinery, seven in textile and clothing, 31 in other manufacturing, 59 are the electrical and electronics industry, six in medical science and biotechnology, and six are involved in the service industry. To test for nonresponse bias, a *t* test was adopted to check the difference between early respondents and late respondents, as suggested by Armstrong and Overton (1977). We followed the recommendation of Weiss and Heide (1993): early responses were defined as the first 75% and the last 25% were considered as late responses. In this test, we collected data from the *Taiwan Stock Market Observation Post System* and compared the *size of investment* (which is measured as the cumulative foreign direct investment) and *ownership structure* (which is measured as equity owned by the Taiwanese MNCs) between these two groups of respondents. The results of *t* tests showed insignificant differences between these two groups of firms with respect to either cumulative foreign direct investment ($F = 1.292, p > 0.05$) or the ownership structure of IJVs ($F = 0.902, p > 0.05$), mitigating the concern for nonresponse bias (Armstrong & Overton, 1977).

We relied on the managers of the Taiwanese parent companies to respond to the surveys. In accordance with the common practice in IJV research, this study relied on data provided by one partner. However, collecting data from a single source may result in the problem of common method variance. Therefore, we conducted a Harman's one-factor test as suggested by Podsakoff and Organ (1986) to evaluate how serious this problem might be for our study. The results of this test revealed that a six-factor structure was the best solution, and the measurement items of our six variables did not load heavily on one factor. It thus

appears that the problem of common method variance was insignificant.

3.2. Measures

The research variables of this study include centralization, formalization, socialization, perceived value gap, information asymmetry, and IJV performance. The measures of these variables were adopted from existing scales that had been used in previous studies, or they were developed from concepts that are discussed in the existing literature. All survey items were measured on a seven-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

3.2.1. Dependent variable

IJV performance can be assessed using objective or subjective measures. Because some studies have demonstrated that subjective and objective measures of IJV performance are highly correlated (Ariño, 2003; Geringer & Hebert, 1989; Mohr, 2006), several researchers suggest that a subjective measure of joint venture performance is appropriate (Gong et al., 2007; Pangarkar & Klein, 2004). This study adopted perceptual measures to assess the satisfaction of the parent company in the following three areas: (1) strategic goal achievement; (2) cooperative relationship with IJV partners; and (3) willingness to continue this cooperative relationship. These measures have been proven to be reliable when evaluating IJV performance in previous studies (Choi & Beamish, 2004; Luo & Park, 2004; Yan & Gray, 2001). The α reliability in the present study was 0.90.

3.2.2. Mediators

Information asymmetry. Information asymmetry describes a situation in which one party possesses more information than the other party regarding the object of an exchange (Mishra et al., 1998). In relationships characterized by information asymmetry, it is possible for a party to act opportunistically without being detected (Wathne & Heide, 2000). To assess information asymmetry, we measured the level of the parent company's understanding of its IJV partner's actions. Respondents were asked to evaluate how well they knew their partners in terms of actions, strategic change, and the degree of mutual understanding. The higher the level of the respondents' knowledge about their partners, the lower the level of information asymmetry would be. The α reliability for this scale was 0.87.

Perceived value gap. Seetoo and Hsiung (2004) defined the perceived value gap as the perceived differences among partners in goals, strategic directions, and organizational values. Following this perspective, this study asked respondents to evaluate how they differed from their partners in strategic vision, goals, and expectations of how goals can be achieved (Newbury et al., 2003). The α reliability for this scale was 0.74.

3.2.3. Independent variables

Centralization. To measure the degree of centralization, this study first assessed the degree of autonomy the IJV had in decision-making. A low degree of decision-making autonomy for IJV subsidiaries would imply a high degree of centralization by the parent companies (Geringer & Hebert, 1989; Glaister et al., 2003a; Newbury et al., 2003). This study asked respondents to indicate the degree of decision-making autonomy held by the IJV in relation to five operational (functional) activities, including research and development strategy, finance strategy, marketing strategy, manufacturing strategy, and human resource management strategy (Choi & Beamish, 2004; Luo et al., 2001; Yu, Wong, & Chiao, 2006). The α reliability for this scale was 0.94.

Formalization. Formalization refers to the extent to which the parent company adopts written regulations, objectives, processes, rules, and duties to define the expected behavior and the standards of output or quality (Poppo & Zenger, 2002; Wang & Fulop, 2007). Respondents in this study were asked to evaluate the degree of formalization in quality control procedures, cost control procedures, and operation performance reporting (Baliga & Jaeger, 1984; Jaussaud & Schaaper, 2006). The α reliability for this scale was 0.80.

Socialization. In the present study, socialization refers to the extent to which the parent company creates shared norms and values and controls the behavior and decision making of its IJV through social interactions (Chalos & O'Connor, 2004; Nohria & Ghoshal, 1994). To measure socialization, three items were used: (1) the frequency of the local partner's employees visiting the MNC headquarters; (2) the frequency of group communication among partners (Chalos & O'Connor, 2004; Glaister et al., 2003a); and (3) the frequency of the local partner's employees being invited to join training activities hosted by the MNC headquarters (Glaister et al., 2003a; Jaussaud & Schaaper, 2006). The α reliability of this scale was 0.80.

3.2.4. Control variables

Several *control variables* were included in this study. While we provided no formal hypotheses for these factors, we controlled for their impacts in our model. These control variables were industry, IJV age, size, and ownership. Two dummy variables were used to code the industry. The *industry* effect of the high technology sector, which included the electrical and electronics industry, medical science and the biotechnology sector, was coded 1; for other sectors, it was coded 0. The *industry* effect of the service sector was coded 1; for other sectors, it was coded 0. *IJV age* was computed by taking the difference (in years) between the year 2011, when the data were collected, and the year when the IJV's establishment was initially reported to the Taiwanese government. *IJV size* was

measured by capital and by looking at the records of IJVs' average annual sales over the past 3 years. *Ownership* was measured as the percentage of IJV equity controlled by an MNC.

3.3. Reliability and validity

Although our scales were adopted or developed from previous studies on related issues, we interviewed four CEOs of IJVs and asked for their feedback to confirm the validity of the measures. The Cronbach α of the six scales all exceeded 0.70, indicating good reliabilities. To evaluate the construct validity of the measures, we conducted confirmatory factor analysis using structural equation modeling with the maximum likelihood method. The confirmatory factor analysis results demonstrated that our six-factor measurement model had a satisfactory fit ($\chi^2 = 229.42$, $df = 155$, $\chi^2/df = 1.48$, goodness of fit index = 0.87, normed fit index = 0.95, comparative fit index = 0.98, root mean square error of approximation = 0.06). Although the goodness of fit index value was slightly below the recommended threshold of 0.90, the values of both normed fit index and comparative fit index exceeded 0.90. These findings indicate that the measurement model has a good model-to-data fit. Furthermore, the ratio of chi-square to the degree of freedom was 1.48 (any value below 2 for this ratio indicates a good fit). Table 1 presents the values of composite reliability, the squared multiple correlation, and the average variance extracted (AVE). The composite reliability values of our study variables were all above 0.70, the squared multiple correlation values were all above 0.40, and the AVE values were all above 0.50. These results indicate that our measures had good internal consistency and convergent validity (Bagozzi and Yi, 1988).

To assess discriminant validity, Fornell and Larcker (1981) suggested that the square root of AVE should be greater than the correlation coefficient in the corresponding columns and rows. Table 2 shows the means, standard deviations, and correlation coefficients of the study variables. This table reveals that the square root of each

Table 1
The values of squared multiple correlation (SMC), composite reliability (CR), and average variance extracted (AVE) for main research variables.

Variable	Mean (SD)	Estimate (SE)	t value	SMC	CR	AVE
Centralization						
Marketing strategy of subsidiary	3.64 (1.78)	0.91 (0.06)	14.30**	0.82	0.94	0.76
Capital investment of subsidiary	3.67 (1.53)	0.79 (0.07)	11.54**	0.63		
Manufacturing strategy of subsidiary	3.48 (1.75)	0.92 (0.06)	14.80**	0.85		
Human resource strategy of subsidiary	3.45 (1.76)	0.87 (0.07)	13.32**	0.75		
Research and development strategy of subsidiary	3.53 (1.77)	0.87 (0.07)	13.30**	0.75		
Formalization						
Formal quality control procedure	5.75 (1.00)	0.69 (0.08)	8.90**	0.58	0.81	0.59
Formal cost control procedure	5.86 (0.89)	0.81 (0.08)	10.70**	0.65		
Formal operation performance report	6.07 (0.83)	0.81 (0.08)	10.69**	0.65		
Socialization						
The frequency of the local partner's employees visiting the MNC headquarters	5.10 (1.47)	0.77 (0.07)	10.55**	0.60	0.82	0.60
The frequency of group communication among partners	5.37 (1.12)	0.79 (0.07)	10.93**	0.63		
The frequency of the local partner's employees being invited to join training activities hosted by the MNC headquarters	4.75 (1.56)	0.77 (0.07)	10.50**	0.59		
Perceived Value Gap						
Same vision among partners	5.28 (1.01)	0.72 (0.08)	9.41**	0.51	0.75	0.51
Same strategic goals among partners	5.13 (1.13)	0.75 (0.08)	9.97**	0.56		
Parent company can achieve its strategic goals through this IJV	5.39 (0.87)	0.66 (0.08)	8.38**	0.53		
Information Asymmetry						
There exist sufficient information about partner's actions	5.33 (1.01)	0.85 (0.07)	12.69**	0.72	0.86	0.68
There exist some channels to understand partner's strategic change	5.16 (1.10)	0.69 (0.07)	9.48**	0.48		
There are numerous effort to foster mutual understanding	5.23 (1.05)	0.92 (0.06)	14.41**	0.85		
IJV performance						
Strategic goal achievement	5.18 (1.08)	0.89 (0.07)	13.75**	0.80	0.90	0.75
Cooperative relationship with IJV's partners	5.36 (0.97)	0.91 (0.06)	14.07**	0.82		
Willingness to continue this cooperative relationship	5.51 (1.00)	0.80 (0.07)	11.62**	0.64		

$n = 152$; * $p < 0.05$; ** $p < 0.01$; t values are in parentheses.

IJV = international joint venture; MNC = multinational corporations; SD = standard deviation; SE = standard error.

Table 2
Means, standard deviations (SD), and correlations of variables.

Variable	Mean	SD	a.	b.	c.	d.	e.	f.	g.	h.	i.
a. Centralization	3.68	2.32	0.87								
b. Formalization	5.89	0.77	-0.13*	0.77							
c. Socialization	5.07	1.18	-0.01	0.15	0.77						
d. Perceived value gap	2.73	0.82	-0.11	-0.25**	-0.34**	0.71					
e. Information asymmetry	2.76	0.94	-0.15	-0.18*	-0.66**	0.59**	0.82				
f. IJV performance	5.35	0.93	0.04	0.33**	0.37**	-0.68**	-0.53**	0.87			
g. IJV age	16.31	11.84	0.12	0.02	0.02	-0.00	-0.04	-0.13			
h. Ownership	0.56	0.19	0.33**	-0.12	-0.08	0.06	0.00	-0.10	0.15		
i. Capital (log)	18.84	1.93	0.13	0.05	0.17*	-0.03	-0.11	0.09	0.23**	0.09	
j. Sales (log)	19.49	1.82	0.09	0.16	0.06	0.00	-0.03	0.02	0.25**	0.05	0.59**

Diagonal terms are square roots of the average variance extracted. * $p < 0.05$; ** $p < 0.01$.
IJV = international joint venture.

AVE exceeds the correlation coefficients in the corresponding columns and rows, indicating that these measures have good discriminant validity.

4. Results

Our theoretical model and hypothesized relationships were tested using a hierarchical regression method. This survey followed the procedures that Baron and Kenny (1986) suggested to test the mediating role of information asymmetry and value gap (Table 3). Model 1 was shown to be statistically insignificant ($F = 0.65$, $p > 0.05$), indicating that the control variables did not explain the variances in information asymmetry. The model fit of Model 2 was significant ($F = 13.49$, $p < 0.001$); centralization ($\beta = -0.07$, $p < 0.1$), formalization ($\beta = -0.14$, $p < 0.05$), and socialization ($\beta = -0.51$, $p < 0.001$) had a negative effective on information asymmetry. Although the model fit of model 3 was significant ($F = 2.43$, $p < 0.05$), the effect of control variables were insignificant on perceived value gap. Model 4 showed that formalization ($\beta = -0.21$, $p < 0.05$) and socialization ($\beta = -0.19$, $p < 0.001$) had negative effects on perceived value gap. Model 5 was shown to be statistically insignificant ($F = 1.45$, $p > 0.05$), indicating that the control variables lacked significant effects on IJV performance. Model 6 indicated that centralization ($\beta = -0.04$, $p > 0.05$) did not have a significant effect on IJV performance; however, both formalization ($\beta = 0.32$, $p < 0.001$) and socialization ($\beta = 0.26$, $p < 0.001$) showed a positive impact on IJV performance, respectively. Model 7 showed that the influence of centralization remained insignificant, that the direct effects of formalization ($\beta = 0.25$, $p < 0.01$) were reduced, and that socialization ($\beta = 0.01$, $p > 0.05$) was insignificant when we added mediator information asymmetry into the regression model and revealed a negative impact on IJV performance ($\beta = -0.48$, $p < 0.001$). Therefore, H_1 , which predicated that information asymmetry had negative impact on IJV performance, was supported. Although H_3 predicated the mediating role of information asymmetry on the relationship between centralization and IJV performance was not supported, our analysis supported the notion that information asymmetry mediated the centralization performance, as well as the socialization–performance relationship in the IJV context. Thus, H_4 and H_6 were supported.

Model 8 reported that formalization ($\beta = 0.34$, $p < 0.001$) and socialization ($\beta = 0.25$, $p < 0.001$) had direct effects on IJV performance. Model 9 showed that the perceived value gap had a direct impact on IJV performance, thus, H_2 was supported. The direct effects of formalization ($\beta = 0.21$, $p < 0.01$) and socialization ($\beta = 0.13$, $p < 0.05$) remained significant but were lower than the effects in Model 8, which indicated that the perceived value gap partially mediated the formalization–performance and

socialization–performance relationships such that H_{5a} and H_7 were supported.

To further confirm the mediating role of information asymmetry and perceived value gap, this investigation employed a Sobel test (Sobel, 1982) to examine the indirect effects of formalization and socialization on IJV performance. The results showed that through mediation of the perceived value gap and information asymmetry, formalization had significant and positive indirect effects on IJV performance ($z = 3.01$, $p < 0.01$; $z = 2.20$, $p < 0.05$); through mediation of the perceived value gap and information asymmetry, socialization had significant and positive indirect effects on IJV performance ($z = 5.24$, $p < 0.001$; $z = 6.54$, $p < 0.001$).

In summary, the above tests revealed the importance of mediating variables in our theoretical framework. Both the perceived value gap and information asymmetry played important mediating roles in the relationship between formalization and IJV performance, as well as in the relationship between socialization and IJV performance.

5. Discussion and conclusions

IJVs have recently attracted considerable research interest, with scholars being especially keen to understand the influence of parental control over JV management on JV performance. A consensus has not yet been formed in the literature regarding this subject, and the relationship between control mechanisms and IJV performance has continuously puzzled management researchers over the past 2 decades. Therefore, based on transaction cost theory and an information-processing perspective, we proposed a theoretical model that describes how parent companies could exercise control mechanisms to influence the performance of their IJVs through the mediation effects of the perceived value gap and information asymmetry. Our empirical findings demonstrated that centralization, formalization, and socialization can enhance IJV performance by reducing the perceived value gap and information asymmetry.

5.1. Theoretical contributions

This study extends the knowledge of transaction cost theory by investigating the nature of opportunism in IJVs and by understanding the relationship between control mechanisms and IJV performance. First, our framework examines the impact of the perceived value gap and information asymmetry, which are the antecedents of the opportunism assumption and contribute to the utilization of transaction cost theory to govern interorganizational relationships. Based on the assumption of self-interest, the costs of safeguarding and coordination are core concerns of transaction cost theory. Opportunistic partners do not necessarily behave opportunistically, however

Table 3
Results of hierarchical regression analysis.

	IJV performance								
	Information asymmetry			Model 2			Model 3		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Intercept	3.55*** (3.61)	6.09*** (7.19)	2.96*** (3.52)	4.67*** (5.22)	4.50*** (4.73)	2.02* (2.01)	4.92*** (4.71)	1.94** (2.00)	4.90 (5.68)
International joint venture age	-0.00 (-0.32)	-0.00 (-0.24)	-0.00 (-0.36)	-0.00 (-0.35)	-0.01 (-1.56)	-0.01* (-1.72)	-0.01* (-1.99)	-0.01* (-1.78)	-0.01* (-2.44)
Ownership	0.00 (0.20)	-0.00 (-0.29)	0.00 (0.93)	0.00 (0.34)	-0.00 (-1.01)	-0.00 (-0.11)	0.00 (-0.25)	-0.00 (-0.34)	-0.00 (-0.17)
Capital (log)	-0.06 (-1.27)	0.00 (0.09)	-0.02 (-0.49)	-0.00 (-0.00)	0.07 (1.35)	0.04 (0.92)	0.04 (1.05)	0.04 (0.91)	0.04 (1.10)
Sales (log)	0.02 (0.41)	0.02 (0.50)	-0.00 (-0.05)	0.00 (0.21)	0.00 (0.02)	-0.02 (-0.36)	-0.01 (-0.16)	-0.02 (-0.41)	-0.01 (-0.35)
High tech.	-0.11 (-0.06)	-0.12 (-0.90)	-0.03 (-0.20)	-0.03 (-0.22)	-0.02 (0.15)	0.04 (0.27)	-0.02 (-0.11)	0.02 (0.10)	-0.00 (-0.04)
Service	0.24 (0.86)	0.02 (0.11)	-0.03 (-0.20)	0.72** (3.12)	-0.42 (-1.56)	-0.32 (-1.30)	-0.32 (-1.37)	-0.31 (-1.28)	0.14 (0.70)
Centralization		-0.07* (-1.91)		-0.21* (-2.54)		-0.04 (-1.51)			
Formalization		-0.14* (-2.00)		-0.19*** (-3.57)		0.32*** (3.39)			
Socialization		-0.51*** (-9.85)				0.26*** (4.29)			
Information asymmetry									
Perceived value gap									
F value	0.65	13.49***	2.43*	4.83***	1.46	5.41***	8.74***	6.08***	-0.633*** (-8.56)
R ²	0.03	0.46	0.09	0.21	0.06	0.26	0.38	0.25	16.34***
Adj. R ²	0.01	0.43	0.05	0.17	0.02	0.21	0.34	0.21	0.51
ΔR ²		0.45		0.12		0.20	0.13	0.20	0.48
ΔF		38.18***		11.03		12.69***	28.80***	18.86***	73.70***

n = 152; † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001; t values are in parentheses.

(Rindfleisch & Heide, 1997; Tsang, 2006). This study proposed that the perceived value gap and information asymmetry are two major facilitators of opportunistic behavior. When partners have incongruous goals and different norms, at least one party may perceive the existence of a value gap. A lack of common values or goals may motivate partners to act opportunistically for their own separate advantage. Furthermore, without sufficient information and adequate monitoring, it may be difficult for one party to detect the other party's opportunistic behavior (Rindfleisch & Heide, 1997; Wathne & Heide, 2000). Therefore, a value gap and information asymmetry may undermine the performance of an IJV. As suggested by one tenet of transaction cost theory, one reason why parent companies exercise control mechanisms over IJVs is to prevent opportunistic behaviors or actions that are excessively motivated by the partners' self-interest (Yan & Gray, 2001). Therefore, to deter opportunistic behavior, control mechanisms should be exercised in a way that emphasizes their effects in reducing the value gap and information asymmetry.

Second, this study advances our knowledge of relationship governance and its outcome by showing the mediating role of the perceived value gap and information asymmetry. The relationship between control and performance is one of the most important issues in research relating to IJV management (Inkpen & Currall, 2004). Previous studies have generally focused on the direct relationship between control and performance (Mjoen & Tallman, 1997; Pangarkar & Klein, 2004; Yan & Gray, 2001). Several studies have assumed that control mechanisms differ from one another in the process by which they exert influence (Fryxell et al., 2002). However, the findings of these earlier studies have not resulted in a consensus. Hence, a second contribution of this study is the proposed theoretical model that can be used to re-examine the inconsistent results that have emerged from earlier studies regarding the relationship between control mechanisms and IJV performance. The empirical results presented in this study demonstrate that the perceived value gap and information asymmetry are two important mediators that can help to clarify the causal link between control mechanisms and IJV performance.

Third, our results show that formalization could reduce the perceived value gap among partners. This finding supports the positive function of formalization and thus constitutes a third contribution of this study. Previous studies provide inconsistent findings that we face a somewhat contradictory situation with respect to the relationships between formalization on the one hand and shared values among partners on the other. Some empirical works advocate that formalization provides a stable and predictable environment that could promote the development of common norms and cultural values and that it has a positive effect on the development of shared values among partners (Fryxell et al., 2002; Nohria & Ghoshal, 1994). However, some scholars argue that formalization reduces the need to develop shared values and that rigid routines inhibit the flow of thoughts and ideas, which may have a negative effect on the development of shared values (Perrone et al., 2003; Zaheer et al., 1998). In addition, one study suggests that formalization would not necessarily be associated with shared values (Inkpen & Currall, 2004). Considering the diversity of viewpoints and evidence, we proposed a set of competing hypotheses to clarify further the relationship between formalization and shared values (or the value gap). Therefore, we suggest that partners should still try to build standard rules and procedures to facilitate the operation of an IJV enterprise.

5.2. Practical implications

MNCs may not be able to predict in advance whether their local partner will behave opportunistically. While there are numerous types of opportunistic behaviors, partners undoubtedly have to

share a certain amount of business knowledge or research and development knowledge to maintain or build the competitive advantages of their IJVs (Yan & Child, 2004). The empirical results presented in this study provide practical implications for firms already operating IJVs with partners from different countries. Partners may not be familiar with each other during the initial stage of IJV formation. When a large value gap is perceived among partners, certain control mechanisms should be established to overcome this value gap immediately. Formal control mechanisms consist of clear limits and an explicit set of rules and regulations that delineate the desired performance in terms of output and/or behavior (Baliga & Jaeger, 1984). Regardless of the quality of the relationship between IJV partners, detailed contracts specifying the rights and responsibilities of both parties are needed to coordinate activities, resolve future potential conflicts, plan for future transactions, and provide legal protections to participating parties (Liu, Li, & Zhang, 2010). These formal rules can help to narrow the value gap.

Socialization, including partner visits, group communication, and joint training programs may also facilitate mutual understanding and the development of shared values and norms (Fryxell et al., 2002). Social capital can be accumulated through socialization. Verbal communication channels can also be established via repeated episodes of social interaction. This type of nonformal social relationship can enhance the efficiency and effectiveness of resource exchanges. Zaheer et al. (1998) noted that individuals who play the role of boundary spanners significantly influence exchange relations. Partners tend to be more open and honest if trust can be developed through intensive interaction with boundary spanners. Furthermore, frequent formal and informal social interactions should be encouraged among top management teams to establish verbal communication channels and to enhance the congruence of the partners' strategic objectives. These interactions in turn could help partners compromise with regard to their specific objectives to achieve mutually satisfactory win–win solutions.

5.3. Research limitations and future research directions

While this study helps to refine our understanding of the relationship between IJV control mechanisms and their consequences, it has several limitations. First, this study did not address the potential interactions among control mechanisms. Baliga and Jaeger (1984) note that control by socialization may reduce the emphasis on formalization. However, Nohria and Ghoshal (1994) contend that the cultivation of shared values to help govern subsidiaries does not mean that an MNC does not need to employ hierarchical or bureaucratic elements. While several studies have attempted to explore the relationships among control mechanisms (Das & Teng, 1998; Jaussaud & Schaaper, 2006; Mesquita & Brush, 2008), the empirical results remain mixed. Therefore, there is a need for follow-up studies that continue to explore the interactions among control mechanisms and examine the effects of these interactions on IJV performance.

Second, the IJV companies in our sample were all located in one host country—China. The institutional environment is one of the important factors that influence the selection of control mechanisms. In China, the local environment is characterized by unpredictability and a lack of bureaucratic transparency. These conditions create difficulties in IJV management (Chalos & O'Connor, 2004). The empirical data of this study are limited to IJVs that are located in China and have a Taiwanese firm as one of their parent companies. Although China is the most important location of foreign direct investment for Taiwanese firms, future studies that attempt to replicate this study in a different location

will help to confirm the external validity of this study such that the findings can be generalized.

Third, this study did not collect data from all of the partners of the IJVs, but instead relied primarily on the responses of the representatives from Taiwanese parent companies. Mohr (2006) found that IJV partners usually have notably different expectations about IJV performance. For example, the acquisition of new technologies and knowledge seems very important to Chinese partners but not to German partners. These differing expectations undoubtedly influence the partners' assessment of IJV performance. To evaluate thoroughly an IJV's performance, we suggest that future researchers try to collect data from all partners and control for more variables such as the number of partners and the nationality of the parent company. Although it might be difficult, examining perspectives from multiple parties or multiple sides would be worthwhile and could undoubtedly enrich the understanding of IJV management.

Finally, previous studies suggest that some constructs that derive from transaction cost theory such as transaction specific investment and environmental uncertainty may play the roles of antecedents (Baliga & Jaeger, 1984; Chalos & O'Connor, 2004; Egelhoff, 1982; Yan & Child, 2004) or contingent variables (Fryxell et al., 2002; Luo et al., 2001) to influence the relationship between control mechanisms and performance. Future research can include these structural and environmental conditions and explore the mediating-moderating effect of uncertainty and specific investments on the control-performance relationship to extend the contributions of transaction cost theory.

Conflicts of interest

All contributing authors declare no conflicts of interest.

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