

**THE INFLUENCE OF FOREIGN PARTNERS' DISSEMINATIVE  
CAPACITIES ON KNOWLEDGE TRANSFERS TO INTERNATIONAL JOINT  
VENTURES**

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**THE INFLUENCE OF FOREIGN PARTNERS' DISSEMINATIVE CAPACITIES  
ON KNOWLEDGE TRANSFERS TO INTERNATIONAL JOINT VENTURES**

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## **Abstract**

This paper attempts to fill this gap in the literature by focusing on the influence of knowledge senders' willingness to share knowledge, their disseminative capacities and the knowledge-transfer opportunities they create on the effectiveness of knowledge transfer. We develop a theoretical framework that examines the impacts of key knowledge-senders' abilities and behaviors on the knowledge-transfer process. We test our theory using survey data collected from 199 South Korean IJVs. We find that the willingness of foreign parent firms to share knowledge is manifested in their efforts to increase their abilities to articulate and codify knowledge, and to apply those skills to the codification of knowledge relevant to their IJVs. A willingness to share knowledge also plays a role in increasing the opportunities for two-way interactions, especially face-to-face interactions between the parents and their IJVs. The impact of the abilities of foreign parent firms to articulate and codify knowledge for transfer is mediated by the efficacy of their organizational communication systems. We also find that the opportunities created for the transfer of explicit knowledge have a significant impact on such transfers. However, opportunities for transfer of tacit knowledge only have an impact when senders and receivers have similar products and technologies.

**Key words:** Disseminative capacity, Knowledge Transfer, International Joint Venture, South Korea

**JEL codes:** M16, M12, M10



## INTRODUCTION

For the past two decades, knowledge has been identified as one of the most important factors in firms' competitive advantages (Grant 1996; Kogut and Zander 1996; Nonaka 1994). Evidence suggests that joint ventures provide an optimal organizational governance structure for inter-firm knowledge transfers (Kogut 1988; Makino and Beamish 1998). Knowledge transfers to international joint ventures (IJVs) are seen as essential not only for the survival of IJVs in a competitive market but also to ensure that IJVs can actively help their parent companies achieve their strategic goals (Hennart 1991; Inkpen and Beamish 1997; Lane et al. 2001).

Inter-firm knowledge transfer is not an easy process, especially in cross-border collaborations. Of the explanations for the prevalence of ineffective knowledge transfers across organizational and national boundaries, a lack of sufficient absorptive capacities among knowledge recipients is given primacy in the literature (Cohen and Levinthal 1990; Dyer and Singh 1998; Lane and Lubatkin 1998; Lucas 2006; Mowery et al. 1996). Minbaeva and Michailova (2004, p. 666) argued that efficient knowledge sharing demands a collaborative effort; it is dependent not only on recipients' absorptive capacity but also on their attitudes and behaviors, as well as their abilities to communicate knowledge in a way that the receiver can understand. In their operationalization of the disseminative capacity concept, Minbaeva and Michailova (2004) introduce the abilities and motivation of knowledge senders as key elements of the concept and argue that both need to be present to achieve a higher degree of knowledge transfer. They apply the concept of disseminative capacity in their study of the behavior of expatriates in knowledge transfers between MNCs' headquarters and their subsidiaries, and among the subsidiaries themselves.

To date, research on disseminative capacity has been largely theoretical and case based. Indeed, despite the attractiveness of the concept, it is seldom used in empirical research on inter-firm knowledge transfer. Some empirical researchers have argued for disseminative capacity as one determinant of knowledge transfer, but they have been unable to find much empirical support (Szulanski 1996; Gupta and Govindarajan 2000; Simonin 1999). It is hardly surprising that these empirical studies come to no conclusion, as no consensus has been reached on the appropriate definition and measurement of the concept. We observe two main shortcomings. First, we argue that this is partly due to the weak operationalization of the disseminative capacity concept. Specifically, Minbaeva and Michailova (2004) overlook another important role of senders in the inter-firm knowledge-transfer process – the creation and use of opportunities for inter-firm transfers. In this regard, extant research on knowledge transfer recognizes opportunity as an antecedent of knowledge processes (e.g., Argote et al. 2003; Chang et al. 2012; Hansen and Nohria 2004; Siemsen et al. 2008).

Second – and perhaps more disturbing – shortcoming of the extant work on disseminative capacity is the absence of theorizations about the potential interrelationships among elements of disseminative capacity, as well as the lack of related empirical evidence. Generally, the behavioral literature suggests that ability, motivation and opportunity are interrelated, and that interrelations among these elements may provide interesting insights. Indeed, in applying the concept of an interaction effect of ability and motivation to the issue of knowledge transfer, Minbaeva et al. (2003) argue that greater knowledge utilization can be achieved if knowledge receivers have both the ability and the motivation to absorb new external knowledge. Argote et al. (2003) argue that “ability and extra effort are even more valuable when coupled with opportunity

... to create, retain and transfer knowledge” (p. 575). Unfortunately, no study to date has simultaneously considered all three elements of disseminative capacity as well as the interaction effects among them.

To fill this gap, we develop a theoretical framework that clarifies the complex web of interrelationships among the sender’s motivation, the sender’s ability to share knowledge, and the sender’s propensity to create and use opportunities for knowledge transfer – all elements of disseminative capacity. We also examine the impact of these interrelationships on the degree of inter-firm knowledge transfer. We test the theoretical framework in the context of IJVs using data collected from 199 IJVs in South Korea.

The paper makes several contributions. The main contributions to theory include the articulation of the causal linkages among three key underlying mechanisms of knowledge transfer – ability, motivation and opportunity (Argote et al. 2003) – and their relationships to inter-firm knowledge transfer. In doing so, we highlight the sender’s perspective. We also contribute to theory development by extending the conceptual framework in two ways. First, we distinguish between two classes of knowledge exchange opportunities: 1) two-way/face-to-face interaction channels (which support transfers of tacit knowledge), and 2) accessible articulated and codified knowledge resources (which support transfers of explicit knowledge). Second, we clarify the symbiotic relationships that exist between articulation/codification ability and effective communication.

This study’s empirical contributions relate to its new context (inter-firm transfers) and to the comprehensiveness of the controls used to reduce confounding influences not related directly to the sender’s knowledge-transfer behavior. Specifically, we focus on cross-border transfers of



knowledge from foreign parent firms to IJVs, while prior studies dealing with the sender's perspective tend to focus on knowledge exchanges within MNCs and their subsidiary networks. More importantly, in order to evaluate the impacts of the sender's willingness and ability to share knowledge and the opportunities they create for knowledge sharing, we control for several key confounding influences. These included key recipient characteristics (e.g., size and age) and the characteristics of the relationships between the senders and receivers (e.g., dyadic relational capital, control relationships and cultural distance).

In the following section, we develop the theoretical framework and our hypotheses. The third section provides details of the methods used in this study, including the procedures used to reduce the risk of common method bias. That section is followed by a description of the results. We conclude with a discussion of the implications of our findings for theory and practice, as well as an examination of the limitations of the study and opportunities for future research.

## **THEORETICAL BACKGROUND**

“Knowledge transfer” is a dyadic exchange of organizational knowledge (Szulanski 1996). A knowledge transfer can be initiated by either the recipients (Cohen and Levinthal 1990; Lane et al. 2001) or the sources of knowledge (Minbaeva 2007; Minbaeva and Michailova 2004; Mu et al. 2010). Thus, knowledge transfer depends not only on the receiver's intent to learn and his or her absorptive capacity, but also on the sender's intent to provide access to the knowledge, the effort the sender is willing to make to disseminate the knowledge to the receiver, and the sender's capacity to articulate the knowledge and use the opportunities created for inter-organizational *and* intra-organizational knowledge transfer.

The theoretical foundations of our study are found in knowledge-transfer theory and communication theory (Oppat 2008), as well as in the organizational-learning and knowledge-management perspectives (e.g., Argote 1999; Cohen and Levinthal 1990; Cyert and March 1963; Levitt and March 1988; Nadler et al. 2003; Nonaka 1991). Knowledge-transfer theory views knowledge transfer as a complex process that takes multiple forms and uses different transfer mechanisms (Oppat 2008). The primary focus of the overarching theory is to describe how to effectively transfer information, data and knowledge from a sender to a receiver by selecting the optimal combination of an interactive process and a mode of transfer (Cummings and Teng 2003). Knowledge-transfer theory describes a two-sided process, recognizing that, in many situations, the absorptive capacity of the receiver is insufficient for successful knowledge transfer if the sender possesses no disseminative capacity to spread the knowledge (Tang et al. 2010).

In contrast, communication theory emphasizes the perspective of the sender. In this line of thinking, a key aspect of disseminative capacity is the ability of the knowledge sender to design an effective communication approach such that the knowledge is clearly transmitted and its content is understood in its intended form by the receiver. As a whole, communication theory views the process of transfer as involving a sender, a receiver, a message, a channel, encoding and decoding activities, a meaning, noise, feedback, and a communication effect (Krone et al. 1987). The process typically involves a sender first transmitting a message through the chosen channel, and a receiver interpreting the message and sending feedback to the original sender based on his or her understanding. The original sender receives the feedback message and can respond as needed (Oppat 2008). Communication theory emphasizes the abilities of knowledge

senders to effectively transform their knowledge into messages that can be accurately interpreted by the receivers, and to design and deploy appropriate channels relative to the type of knowledge to be transferred to ensure that the message reaches the receivers. These two theories are highly interrelated in that they both explore the sender's ability to effectively and accurately send knowledge.

Two other theoretical perspectives that inform our theoretical approach – organizational learning and knowledge management – provide important insights into cross-border, inter-firm knowledge transfers. These interdisciplinary perspectives derive most of their foundations from psychology (given its focus on cognition), economics (given its emphasis on incentives and competition), and sociology (given its orientation towards social structure and processes) (Argote, et al. 2003, p. 572). The insights derived from these theories about the determinants of inter-firm knowledge transfers relate to the effects of the characteristics of knowledge, the characteristics of senders and receivers, and the context of the transfer (Szulanski 1996; Minbaeva 2007).

### **DISSEMINATIVE CAPACITY IN INTER-FIRM KNOWLEDGE TRANSFER**

A focus on the characteristics of the sender is even more crucial in research on inter-firm knowledge transfer. Kogut and Zander (1996) view a company as “a social community specializing in the speed and efficiency of the creation and transfer of knowledge” (p. 503). An extension of this view to an IJV assumes that the IJV's partners form an extended social community in which the objective of knowledge transfer is a shared core norm. Therefore, the intent of the foreign parent to share knowledge with the IJV is an important condition for the effective, speedy transfer of knowledge to the IJV (Minbaeva and Pedersen 2010).

Further, knowledge protectiveness is borne of a complex mixture of fears, including concerns about the disruption of the status quo in a relationship, the shifting of bargaining power between the involved firms, the loss of ownership and the loss of a firm's relative position of privilege in a relationship (Hau and Evangelista 2007; Inkpen 2000).

In the context of the IJV, the intent of the foreign parent firm to cooperate is informed by the original motive for establishing the joint venture. When deciding to establish joint ventures, partners typically expect to enjoy complementary resources and improve their efficiency (Hau and Evangelista 2007). Access to complementary knowledge resources is often a prime motive for entering into a joint venture (Kogut 1988; Inkpen and Beamish 1997). Despite these potential benefits, however, parent firms may have weaker intentions to share their knowledge with the IJV when it is a direct or potential competitor (Inkpen 2000), as there is risk that the competitive value of knowledge transfer will erode in such situations.

In this paper, we focus on the impact of knowledge senders' willingness to share knowledge, and their abilities to articulate, codify and communicate knowledge. However, knowledge transfer cannot occur in the absence of an opportunity to transfer knowledge (Ghosal and Bartlett 1988). In other words, knowledge-transfer systems must be augmented with the active creation of concrete opportunities to transfer knowledge, such that both the physical and psychological distances between organizations shrink (Argote et al. 2003). This means that organizations must create opportunities for interaction. Therefore, we explicitly consider not only the capacities of the sending organization to articulate, codify and communicate knowledge, but also the opportunities that are created for the transfer of explicit and tacit knowledge.

In the next section, we develop a framework that theorizes about the interrelationships among the sender's motivation, the sender's ability to share knowledge, and the sender's propensity to create and use opportunities for knowledge transfer – all elements of disseminative capacity. We also develop hypotheses on the impact of these interrelationships on the degree of inter-firm knowledge transfer. Our framework is summarized in Figure 1.

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## **HYPOTHESES DEVELOPMENT**

### **Sender willingness**

As we argued in the previous section, the sender's willingness to transfer knowledge plays a crucial role in knowledge transfer in IJVs. Several attempts have been made to empirically study the effect of knowledge-sender motivation on knowledge transfer. For example, Szulanski (1996) assumes that certain characteristics of a knowledge source, such as a lack of motivation and being perceived as unreliable, are among the factors that restrict knowledge transfer. Szulanski's (1996) measure for the "source lacks motivation" construct consists of 13 items (Cronbach alpha 0.93). Szulanski asked respondents whether they saw a benefit in measuring their own performance, understanding their own practices, sharing their understanding with other units, assessing the feasibility of the transfer, communicating with the recipient, planning the transfer, documenting the practice for the transfer, implementing the recipient's support systems, training the recipient's personnel, helping the recipient troubleshoot, helping

resolve recipient's unexpected problems, and lending skilled personnel (Szulanski 1996, p. 42). He finds that although a sender's lack of motivation is one barrier to knowledge transfer, it is less important than other barriers, such as absorptive capacity, causal ambiguity, and the relationship between the senders and the receivers.

Similarly, Simonin (1999) finds that the willingness of external sources to fully cooperate in knowledge transfer (low partner protectiveness) has a non-significant effect on the outcomes of knowledge transfer. According to Simonin, this finding may be due to such elements as biased answers, difficulties in detecting or observing the phenomena, or partners' opportunistic behavior (p. 614-615).

Gupta and Govindarajan (2000) hypothesize that the motivational disposition of knowledge senders has a positive impact on the magnitude of knowledge inflow and outflow. They operationalize this construct in terms of the subsidiary versus corporate focus of the incentive system for the subsidiary president. However, their results do not provide much support for their prediction. According to Gupta and Govindarajan (2000), there are at least two possible explanations. First, the motivational disposition to share knowledge may depend on variables other than the CEO's incentive system. Second, they suggest that the receivers' motivation to acquire knowledge is more important than the motivation of the senders.

Clearly, the empirical studies have only had limited success in examining the impact of the knowledge sender's motivational disposition. However, there is a general consensus among theoretical and conceptual researchers that a strong willingness on behalf of knowledge senders to share their knowledge increases the likelihood of a successful knowledge transfer.

When partners are not interested in sharing their own knowledge as a result of knowledge protectiveness (despite their desire to acquire the other partner's knowledge), it follows that they will expend less effort, and devote less time and resources to ensuring the effective dissemination of knowledge. To avoid unintended knowledge spillovers, they may become relatively more guarded in their contacts with an IJV and thus reduce opportunities for the transfer of tacit knowledge.

In contrast, a strong desire to share knowledge should result in the firms investing in shared-access databases, developing effective communication systems, and generally increasing the frequency of formal and informal interactions and communications between foreign parents' employees and those of the IJVs. In sum:

*H1: The foreign parent's willingness to share knowledge with the IJV will have a positive impact on: a) the building and mobilizing of the parent's ability to articulate/codify and communicate in order to transfer knowledge to the IJV), and b) the parent's efforts to generate opportunities for the transfer of explicit and tacit knowledge.*

### **Articulation and codification**

Knowledge is often created and developed in a particular context and setting. To be accessible in other settings, it must first be detached from its original setting, and standardized or de-contextualized (Oppat, 2008). Knowledge must also be made relevant to the applications envisaged for it in the new setting. These transformation processes, which are known as the

articulation and codification processes, encompass the alienation of knowledge from its implicit knowledge source, and its transformation into an explicit form to be formally and systematically transmitted between firms (Kogut and Zander 1992; Nonaka 1994).

Knowledge senders tend to articulate knowledge of their field in an abstract way or in a way that reflects their own context, which makes it difficult for novice recipients to understand and apply the knowledge in practice (Carlile and Reberntsch 2003). Hence, to improve the effectiveness of knowledge transfer, knowledge senders must develop an ability to assess the needs of recipients. They must also be able to customize the articulation and codification processes using a language that the receivers can understand, so that they can interpret and match the knowledge to their specific needs and environment (Nonaka 1994; Reagans and McEvily 2003). We therefore argue that:

*H2: The ability of the foreign parent to effectively articulate and codify knowledge for use by recipients has a positive effect on the level of knowledge transfer to the IJV.*

### **Effective use of communication channels**

The effective use of communication channels is important for avoiding misinformation and for maintaining transparency, especially in long-distance relationships (Bresman et al. 1999). An effective communication system requires the availability of a comprehensive set of communication channels, and the appropriate selection and use of those channels that meet recipients' needs (Murray and Peyrefitte 2007). Bresman et al. (1999) argue that the availability



and choice of effective modes of communication are more important determinants of knowledge-transfer success than the frequency of interactions between the IJV and managers of the foreign parent firm. Indeed, a high frequency of interactions may be counterproductive to knowledge transfer if ineffective communication channels are used, as such interactions may increase noise and uncertainty, and reduce trust in the communication system as a whole and in the messages received through it. The effective use of diverse communication channels is especially important when the geographical distance is significant, there is a gap in the technological capabilities of senders and receivers, or when channels are not reliable. We therefore argue that:

***H3: An organizational capacity to effectively employ a diverse set of inter-firm communication channels positively affects the transfer of knowledge to the IJV.***

While a capacity to select and effectively use appropriate channels in inter-firm communications is likely to help bridge geographical distances, it may not remove other types of barriers (e.g., cultural distances and knowledge gaps) to effective knowledge transfer and absorption. An ability to customize knowledge articulation and codification to match the absorptive capacity and characteristics of the receiving organization can increase the effectiveness of the communication system in transferring knowledge. We therefore posit:

***H4: Articulation/codification abilities positively affect the effectiveness of the organizational communication of the foreign parent in transferring knowledge.***

## **Opportunities for knowledge transfer**

There are two major classes of opportunities for knowledge transfer. Explicit knowledge tends to flow from senders to receivers in a codified form through formal communication channels. This involves transfers of written manuals, guidelines, plans, etc. In this regard, the articulation and codification of the firm's knowledge resources creates opportunities for knowledge transfer. Tacit knowledge, in contrast, largely flows through interactive and generally informal channels (Polanyi 1966; Nonaka and Takeuchi 1995). Therefore, the development of platforms and programs to increase cross-firm interactions among employees creates opportunities for transfers of tacit knowledge (Smith 2001).

Interactive opportunities for the transfer of knowledge include two-way oral communication, as well as opportunities for receivers and senders to observe each other. A higher frequency of interactions provides more opportunities for senders to learn about receivers' needs and abilities. It also creates opportunities for informal feedback, which in turn allow senders to adjust, augment and customize their transfers of codified knowledge.

Frequent face-to-face interactions enable mutual observation (Nadler et al. 2003). Indeed, the transfer of tacit knowledge, in particular, requires learning through observation, intense interaction and effective communication (Szulanski 1996). More frequent face-to-face interactions between knowledge senders and knowledge receivers allows for questioning and adaptation, which are key to learning and knowledge transfer. Such interactions are often facilitated by inter-firm visits of managers and employees (Minbaeva and Michailova 2004), internships, joint training programs, and technical meetings (Bresman et al. 1999; Ghosal and Bartlett 1988). Furthermore, even short-term foreign visits and meetings enable expatriate

managers to enhance their teaching skills, competencies, language skills and abilities to communicate across cultures (Minbaeva and Michailova 2004). The exchange of employees between parent firms and IJVs creates greater openness and closer proximity among their employees, which in turn allows the IJV's employees to gain a greater awareness of "who knows what". Such exchanges also create informal opportunities for knowledge transfer through more personal and unstructured channels (Argote et al. 2003). In sum:

*H5a: Opportunities for interactions between employees of the IJV and the foreign parent positively affect the transfer of knowledge to the IJV.*

Explicit knowledge is codified. It is thus easy to store and can be accessed by the employees that the knowledge sender wishes to reach (Nonaka 1994; Winter 1987). Opportunities to transfer explicit knowledge are created by the codification of existing knowledge resources and the provision of access to that knowledge. The "people-to-documents" process of codifying knowledge, which emphasizes "reuse economics", allows the knowledge sender to efficiently transfer knowledge within his or her alliance, such that the knowledge is common to all partners. They are therefore able to play a more active role in the transfer process and increase its effectiveness (Hansen et al. 1999). Thus:

*H5b: The foreign parent's creation of codified knowledge resources that are then made accessible to the IJV positively affects the transfer of knowledge to the IJV.*

## **Relatedness**

Cohen and Levinthal (1990) argue that "prior related knowledge" expedites the acquisition of new knowledge because such knowledge is important for firms in their efforts to

identify and acquire new external knowledge. Knowledge receivers' level of familiarity and pre-existing awareness of cues and linkages related to the transferred knowledge make it easier for them to understand and use the knowledge (Bower and Hilgard 1981). IJVs that have technologies and products that are similar or related to those of their foreign parents are more likely to develop a prior knowledge base that is related to the knowledge possessed by their parents than IJVs that have unrelated technologies and products (Lane et al. 2001). When IJVs and foreign parents are in dissimilar and unrelated industries, the employees of the IJVs may face fundamental communication and perceptual challenges in terms of understanding and acquiring the transferred knowledge. In addition, they are less likely to understand the value and relevance of the knowledge to their businesses and make less effort to absorb it. Accordingly:

*H6: Opportunities for interactive knowledge transfer between foreign parents and IJVs with higher business relatedness are likely to have a greater positive influence on knowledge transfer.*

## **RESEARCH METHOD**

### **Research setting and sample selection**

After the 1997 Asian financial crisis, South Korea became more open to foreign direct investment (FDI). South Korea's growth opportunities attracted a large number of diverse multinational enterprises (Park et al. 2012), which entered the country through joint ventures with local firms. Given the importance and success of knowledge-transfer processes and the large number of diverse IJVs in South Korea, the country serves as an appropriate context for the investigation of the process of knowledge transfer from foreign parents to IJVs.

The sample frame for this study was developed from data available in the *Foreigner Investment Statistical Yearbook* (2008) published by the Ministry of Knowledge Economy of the Republic of Korea. We limited the target sample to IJVs that had been in operation for at least three years to avoid the inclusion of IJVs in various stages of development before becoming fully operational. We also included only IJVs that had between 30% and 70% of foreign equity in order to ensure that the foreign parents had a significant stake in the IJV but did not dominate it completely. Through this process a total of 2,094 firms met the sampling criteria.

### **Data collection**

A survey was used to collect the data. Pretesting provided a means of reducing ambiguity and bias in our measurements (Churchill 1979). We conducted face-to-face interviews and email-based pretests with 10 employees of South Korean multinationals in order to ensure that the survey items would be appropriate for and comprehensible to our target respondents. The survey instrument (a structured questionnaire) was also pretested with international business faculty members at several South Korean universities. Adjustments were made to reflect the feedback received. Where possible, the questionnaire was developed using validated multi-item scales from prior research. We followed a process of translation and back-translation to ensure conceptual equivalence of the alternative renditions (Brislin 1970).

The typical respondent was a company general manager or an IJV-related manager in South Korea in charge of international operations. All respondents had held their positions for at least one year. We received 220 replies, 21 of which were unusable. The response rate was thus 10.51 percent (220/2094). Table 1 presents the profiles of IJVs in our sample.

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## **MEASURES**

### **Dependent variable**

***Knowledge transfer.*** We used a seven-item scale to measure the acquisition of knowledge from foreign partners. Such knowledge included written technical knowledge, written management knowledge, procedural or technical manuals, new marketing expertise, knowledge about foreign cultures and tastes, knowledge about managerial techniques, and knowledge acquired through the demonstration of practices and the observation of working processes (Dhanaraj et al. 2004)

### **Independent Variables**

***Sender's willingness.*** The sender's willingness to share knowledge was operationalized using a seven-point Likert scale, which integrated the scales developed by Minbaeva and Michailova (2004), and Simonin (1999). Our integrated scale included the following dimensions of intent: 1) willingness, (2) protectiveness and (3) positive sharing.

***Articulation and codification ability.*** Articulation and codification ability was measured using five items indicating the ability of the foreign parent to: (1) identify and explain knowledge resources; (2) provide clear explanations of practices; (3) offer the IJV access to its employees when seeking help; (4) provide oral and written materials; and (5) provide additional information when needed to understand the knowledge transferred.

***Effective use of communication channels.*** We followed Murray and Peyrefitte (2007) in the measurement of the effectiveness of the communication systems. We assessed the availability and effective use of the following: teleconferencing, face-to-face meetings, access to foreign parent employees who could act as mentors, and clear communication platforms, such as lectures, presentations and seminars.

***Opportunities for knowledge transfer: Interactive and codified knowledge resources.*** We operationalized the construct of opportunity in terms of two mechanisms: interactive opportunity (e.g., visits and meetings, and formal integrative mechanisms) and the provision of accessible, codified resources for knowledge transfer (manuals, checklists, formal processes, routines and guidelines). In terms of interactive opportunities, respondents were asked to indicate how often people from the IJV visited the foreign parent and how often the IJV received visitors from the foreign parent (Bresman et al. 1999; Gupta and Govindarajan 2000). They were also asked to rate the extent to which liaison personnel and/or temporary joint task forces were used to coordinate decisions and actions between the foreign parent and the IJV. To assess the opportunities to access customized codified knowledge, respondents were asked to indicate how much of the knowledge they required was contained in manuals, checklists, formal processes, routines and guidelines that were developed and used by the foreign parent (Kale and Singh 2007).

### **Moderating variable**

***Relatedness.*** Relatedness was comprised of three items measuring the degree to which the IJV's business was similar to that of the foreign parent. We asked the respondents to indicate the extent to which the IJV was related to the foreign parent in the following areas: (1) technology, (2)

products and (3) technological skill base (see Barden et al. 2005). We divided the IJVs in our sample into three groups based on their relatedness scores. We then deleted the middle group in order to examine the moderating effect of relatedness. The remaining sample included 78 high-relatedness and 70 low-relatedness IJVs.

### **Control Variables**

To account for the impact of variables that may affect the transfer of knowledge other than those included in our theoretical framework, we included a number of control variables. First, the *age of the IJV* was included as a control variable, as more experience is associated with lower knowledge-transfer costs and a larger total stock of knowledge (Barkema and Bell 1996; Cohen and Levinthal 1990). IJV age (a proxy for accumulated experience) was measured as the number of years the IJV had operated in South Korea.

Second, *IJV size* is likely to affect knowledge transfer because it may contribute to its inertia and thus inhibit knowledge transfer (Lane et al. 2001). Larger South Korean partners may also seek to acquire less knowledge from foreign partners because they are able to generate more knowledge themselves (Minbaeva et al. 2003). We measured firm size as the logarithm of the number of employees.

Third, knowledge transfer may be influenced by *ownership structure*, as ownership structure is related to the strength of the strategic rationale for transferring (or blocking transfers of) knowledge and skills. To control for the effect of ownership structure, this factor was coded as a dummy variable (coded 1 for foreign majority ownership and 0 otherwise) (Lyles and Salk 1996).



Fourth, we controlled for the effects of *absorptive capacity* following Cohen and Levinthal's (1990) argument that the ability to recognize the value of knowledge, assimilate it and apply it to commercial ends is important for knowledge acquisition. Absorptive capacity was measured using three items that assess the degree of assimilation capacity in the IJV, and its investments in training and education.

Finally, we controlled for the effects of *relational capital*. Relational capital affects how IJV partners collaborate and work together, and it may have significant knowledge-transfer implications (Dhanaraj et al. 2004; Kale et al. 2000; Robson et al. 2006). Relational capital was measured using items that assess the perceived level of moral integrity, and the mutual willingness to trust and commit to the alliance.

### **Common method bias**

A risk of common method variance exists because this study relies on self-reported data from single informants (Podsakoff et al. 2003). Several studies recommend the use of both procedural and statistical methods to minimize bias (Cote and Buckley 1987; Lindell and Whitney 2001; Podsakoff and Organ 1986; Podsakoff et al. 2003).

To address this issue, we first conducted a Harman's one-factor test, where common methods bias is indicated by the emergence of a single factor that accounts for a large portion of the variance in factor analyses. However, no such single factor emerged. The first factor accounted for 10.5% of the 77.7% explained variance.

Second, we followed a procedure recommended by Cote and Buckley (1987) in which we estimated three models. Model 1 was a method-only model in which all items were loaded on

one factor ( $\chi^2(350) = 2387.43$ ,  $P = 0.000$ ; CFI = 0.48, TLI = 0.44; RMSEA = 0.171). Model 2 was a trait-only model in which each item was loaded on its respective scale ( $\chi^2(322) = 606.820$ ,  $P < 0.001$ ; CFI = 0.93, TLI = 0.90; RMSEA = 0.057). Model 3 was a trait and method model in which a common factor linking to all the measurement items was added to M2 ( $\chi^2(174) = 385.710$ ,  $P < 0.001$ ; CFI = 0.94, TLI = 0.93; RMSEA = 0.068). The results of this test indicated that M3 and M2 demonstrated much better fits with the data than M1, and that M3's fit was slightly better than that of M2. This indicates that common method bias does not pose a major threat in this study.

Third, we undertook a Lindell-Whitney marker variable test, which uses a theoretically unrelated marker variable to adjust the correlations among the principal constructs of the analysis (Lindell and Whitney 2001). In our research, we selected "camping experience" as our marker variable because it satisfied the marker variable criteria: we did not use this variable in our analysis, there seemed to be no theoretical reason to assume a relationship between this variable and any of our variables of interest, and the variable was measured in the same way as our other variables. We checked the partial correlations between all of our perceptual variables while controlling for camping experience and found that all of the significant correlations remained significant. Thus, the marker variable test suggests that common method variance is not a significant problem in our analyses.

## ANALYSIS AND RESULTS

### Measurement Model

We reviewed the measurement model to confirm that the latent variables were reliable and valid before we tested the hypotheses. Exploratory factor analysis (EFA) using the principal components method and Varimax rotation was used to identify potentially problematic items and to obtain preliminary indications of unidimensionality, and discriminant and convergent validity. The reliability of the independent and dependent constructs was evaluated using Cronbach's alpha. As in Kline (2005), we conducted a number of confirmatory factor analyses (CFAs) using the survey items noted as indicators for all measures to check the measures' convergent and discriminant validity.

As shown in Table 2, the CFA for the overall measurement model indicates an acceptable fit (Chi-square = 606.820; df = 322; CFI = 0.93; NFI = 0.86; RMSEA = 0.057). All factor loadings are statistically significant at the 5% level, and all of them exceed the recommended threshold of 0.5 (Fornell and Larcker 1981). These measures demonstrate adequate convergent validity. To assess discriminant validity, we used the methods suggested by Fornell and Larcker (1981). As shown in Table 3, the square root of the average variance extracted (AVE) is greater than all corresponding correlations, which indicates adequate discriminant validity.

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Insert Tables 2 and 3 here  
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## Structural model coefficients

With the acceptable measurement model established, we tested our hypotheses using structural equation modeling. The overall fit statistics indicate an adequate fit of the model to the data ( $\chi^2(615) = 1047.032$ , CFI = 0.907, RMSEA = 0.060). Given the moderate sample size, we relied on the CFI and RMSEA indicators to assess model fit (Hu and Bentler 1995). The CFI and RMSEA together suggest that the data fit the hypothesized model reasonably well. Figure 2 provides the coefficients for the hypothesized relationships and their statistical significance.

Hypothesis 1 predicts that the foreign parents' willingness to share knowledge will have a positive impact on their *ability to articulate/codify and communicate in order to transfer knowledge to the IJV*. The standardized regression coefficients for the links between the foreign parents' willingness to share knowledge and articulation/codification ability, and interactive and codified resource opportunities for knowledge transfer are 0.709, 0.361, and 0.944, respectively (all significant at  $p < 0.001$ ). However, the coefficient for the link between foreign parents' willingness to share knowledge and the effective use of communication channels is not statistically significant. We therefore find partial support for Hypothesis 1.

Hypothesis 2 postulates that the ability to codify and articulate knowledge has a positive effect on the acquisition of knowledge. As the standardized regression coefficient for the link between codification ability and knowledge transfer is not significant, Hypothesis 2 is not supported. The coefficient for the link between effective use of communication channels and knowledge transfer is positive and significant ( $\beta = 0.285$ ,  $p < 0.001$ ). Therefore, Hypothesis 3 is supported. Hypothesis 4 posits that articulation/codification activities increase the effectiveness

of communications in the transfer of knowledge. We find support for Hypothesis 4 ( $\beta = 0.51, p < 0.001$ ). As Hypothesis 2 was not supported, we tested whether the effects of articulation/codification capabilities on knowledge transfer are fully mediated by effective use of communication channels. To do so, we conducted a Sobel test (Baron and Kenny 1986). We also used the Arorian and Goodman versions of the test, and obtained almost identical results. The results (Sobel test statistic: 2.51,  $0.01 < P$ ; Arorian test statistic: 2.49,  $0.01 < P$ ; Goodman test statistic: 2.53,  $0.01 < P$ ) indicate full mediation. In other words, the influence of articulation/codification on the transfer of knowledge is mediated by the effective use of communication channels.

We hypothesized that opportunities for interaction have a direct effect on knowledge transfer. However, as the coefficient for the link between interactive opportunity and knowledge transfer is insignificant, Hypothesis 5a is not supported. Hypothesis 5b predicts that the opportunity is created by the codification of knowledge resources will have a positive impact on knowledge transfer. The standardized regression coefficient for the link between written opportunities and knowledge transfer is 0.554, which is significant at  $p < 0.001$ . We therefore find strong support for Hypothesis 5b.

Hypothesis 6 states that opportunities for interactive knowledge transfer from foreign parents to IJVs with higher business relatedness are likely to have a greater positive influence on knowledge transfer. The magnitude of change in the coefficients for the impact of interactive opportunity on knowledge transfer in IJVs with higher relatedness scores and those with lower scores is discernible. The significant chi-square difference ( $\Delta \chi^2 = 3.779, P = 0.05$ ) supports the

proposition that relatedness moderates the relationships between interactive transfer opportunities and knowledge transfer. The coefficient for the link between interactive opportunity and knowledge transfer is positive (0.185) and significant for high-relatedness IJVs, but insignificant and negative (-0.073) for low-relatedness IJVs. Thus, Hypothesis 6 is supported (see Table 4).

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Insert Figure 2 here  
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Insert Table 4 here  
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## **DISCUSSION AND CONCLUSION**

In this paper, we set out to undertake an exploratory investigation of the effects of the parent firms' disseminative capacities on the levels of knowledge they transfer to their IJVs. Following the lead of Cohen and Levinthal's (1990) seminal paper, the literature on knowledge transfer emphasizes the primary role of knowledge receivers' inadequate absorptive capacity in knowledge-transfer failures. In contrast, our paper argues that the transfer of knowledge from parent firms to IJVs is a collaborative process, and that the characteristics and behaviors of senders also play a crucial role.

Our empirical results confirm this assertion. We have shown that senders' disseminative capacities play critical roles in determining the amount of knowledge transferred. In particular, we found empirical support for the proposition that a sender's intent to share knowledge is

important for building and mobilizing articulation and codification capacities for inter-firm transfers of knowledge. This is consistent with Minbaeva and Michailova's (2004) and Minbaeva's (2007) findings that the willingness of the sender to share knowledge is an important driver of the process of knowledge transfer within an MNE.

A strong intent to share knowledge drives the sender to proactively and reactively invest in articulating and codifying knowledge in an effective manner. However, intent does not have a significant effect on the development of communication ability. The effective use of communication channels is a general business capability that is not necessarily affected by a willingness to share knowledge. Disseminative capacity in the transfer of knowledge between organizations is - among other factors - the product of two symbiotic capabilities: the ability to articulate and codify knowledge, and the effective use of communication channels. In this regard, our empirical results show that articulation and codification capabilities do not have a significant, direct impact on the transfer of knowledge. A comprehensive communication system that bridges geographical distance is needed when organizations collaborate at a distance. In turn, articulation and codification increase the effectiveness of a communication system. In particular, the articulation and codification of knowledge allow customization of the message to enhance its fit with recipient characteristics, thereby bridging knowledge gaps and cultural and institutional distances, and thus increasing related absorptive capacity.

Our study also highlights the importance of senders creating opportunities for inter-firm knowledge transfer. We find that opportunities for the transfer of explicit knowledge have a more general impact on transfer levels, while opportunities to transfer tacit knowledge require high levels of relatedness in terms of products, markets and business models between senders

and receivers. Furthermore, the knowledge articulation and codification process associated with the transfer of explicit knowledge provides senders with more control in transmitting the knowledge and, as a result, enables the unpacking and repackaging of transferred knowledge to improve communication and learning. Such transfers have a more universal reach.

In contrast, the interactive, informal nature of tacit knowledge-transfer opportunities and the embeddedness of tacit knowledge in organizational practices and routines present a greater challenge in the knowledge-transfer process. Our empirical findings show that interactive opportunities, which serve as the main platform for transfers of tacit knowledge, have a significant impact only when senders and receivers share a common prior knowledge base or, at least, a common framework for how they view their business. The transfer of tacit knowledge requires the sender's active involvement in the receiver's learning process (Winter 1987). In this regard, the sender must guide the receiver by highlighting opportunities to observe relevant practices and offering direct contacts with potential mentors (Becerra et al. 2008; Lane and Lubatkin 1998). Without a basic common framework that results from business or technological relatedness, and without recognition of the relevance and potential value of the parent's embedded tacit knowledge, interactive opportunities are less likely to result in learning or knowledge transfer.

The implications of our study for practice are clear. To achieve effective knowledge transfer, sending organizations must have or must develop a culture of active knowledge sharing. The willingness to share must transcend the passive stance of not objecting to knowledge sharing but doing little to facilitate it. It must evolve into a culture of active sharing. In such a culture, senders are committed to investing in improving disseminative capacities and actively creating



opportunities for knowledge transfer. Comprehensive communication systems and their effective use are critical for the active transfer of knowledge, but their efficacy must be enhanced by the appropriate articulation and codification of knowledge.

The creation of opportunities for interaction and observation should be targeted at transfers to organizations with related absorptive capacities. When relatedness is low, senders must play a more active role as teachers in the receivers' learning processes. This may involve partial articulation and codification of tacit knowledge in order to provide a sufficient prior knowledge base to enable absorption.

Our results have some important implications for future research on knowledge transfer. The vital role played by the willingness to share knowledge highlights the importance of relational capital – especially trust – to the removal of barriers to sharing. An examination of the interplay among trust, commitment to the IJV and the strength of the motivation to share would be an important and, most likely, a fruitful avenue of research. The examination of the economics of knowledge articulation and codification, especially those factors that affect the degree of customization, presents other theoretical and practical challenges for future research.

Perhaps the most challenging research question raised by our results concerns the conditions that are necessary for the creation of opportunities for tacit knowledge transfers. Our results indicate that some threshold levels of business relatedness are required to ensure effective creation of interactive opportunities for tacit knowledge transfer. Unsuccessful tacit knowledge transfer can result from barriers at different stages of knowledge absorption. The main bottlenecks in absorption may be knowledge identification and evaluation by senders, receivers or both. Alternatively, a key barrier may be the processing of knowledge and its integration with

prior knowledge. A refined research framework that investigates the impacts of specific modes of tacit knowledge transfer on different stages of the knowledge-absorption process may provide important insights into various opportunities to improve the effectiveness of tacit knowledge transfers when the relatedness between knowledge receivers and knowledge senders is low.

The willingness of senders to share knowledge, the development of disseminative capacities and the creation of opportunities for inter-firm knowledge transfer may depend on external environmental factors. An investigation of the impacts of national cultures, market structures (e.g., the degree of competition) and other institutional factors (e.g., the nature and quality of the legal systems) on senders' motivations and abilities to share knowledge will facilitate the development of a more comprehensive theory of knowledge transfer. The same is true for an examination of the effectiveness of the various modes of transferring knowledge under different environmental conditions.

Finally, we caution that our study is not without limitations. First, the data were collected in one country and, therefore, the results may not be valid internationally. A multi-country study would allow for an examination of the impact of external environments on the knowledge-transfer process. Second, the study's methodology does not provide sufficient data for capturing the specific mechanisms underlying our findings. In-depth case studies of inter-firm transfer processes can enrich our understanding of the influence of contextual variables, especially with respect to the mechanisms that promote or constrain tacit knowledge transfers. Third, the data used in this study are cross sectional. Therefore, no claims of causality can be validated. A longitudinal study may help resolve this problem.

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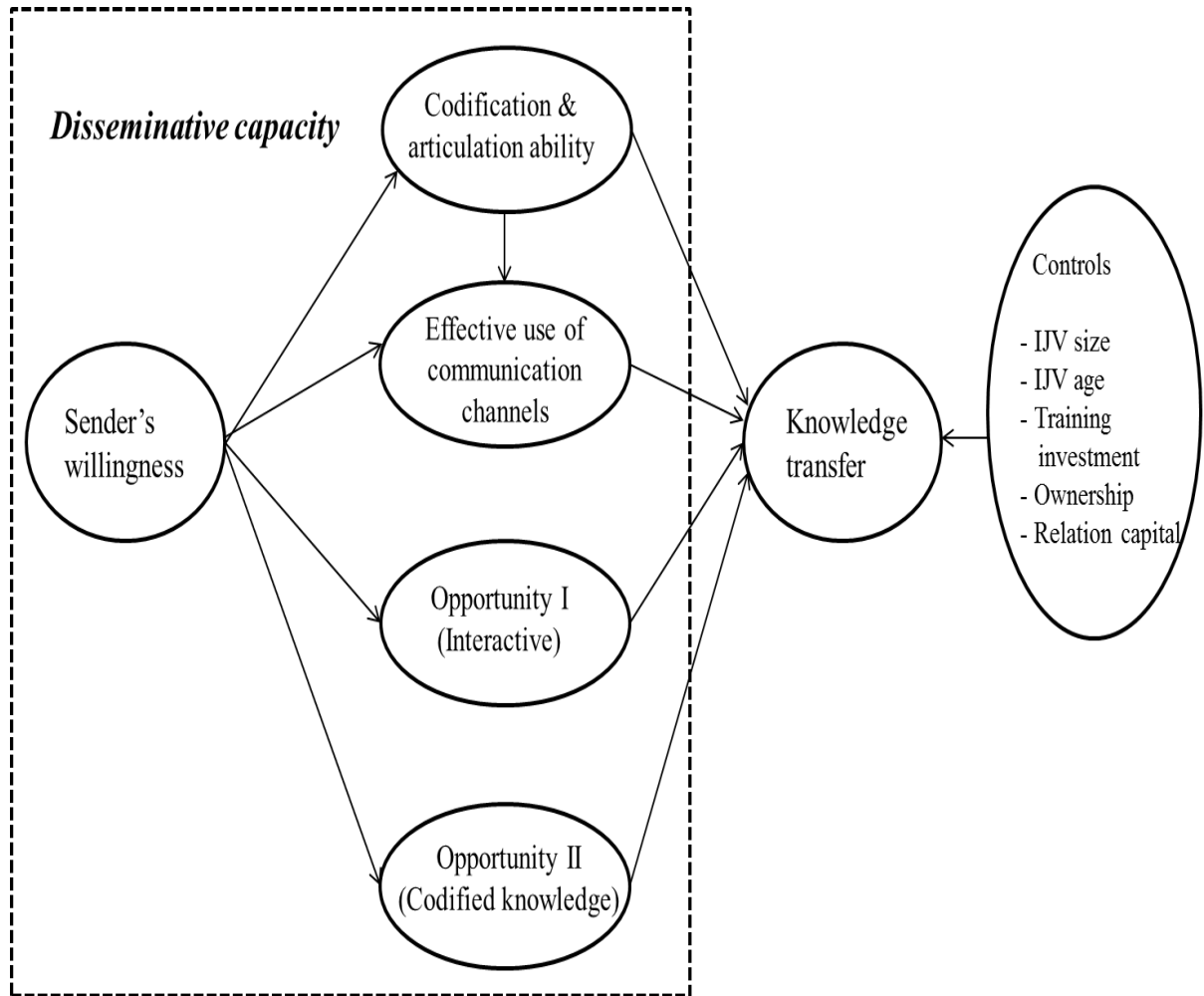
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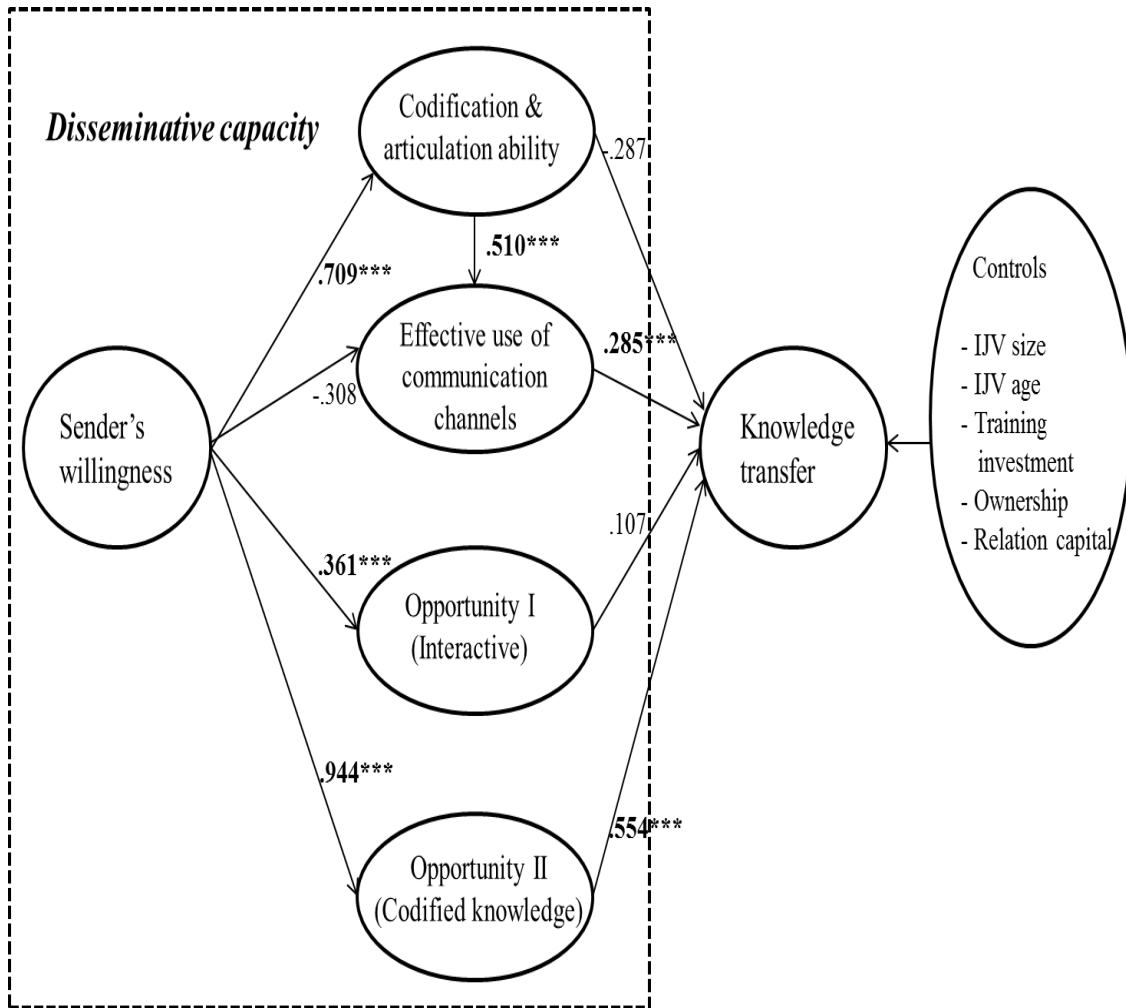


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**Figure 1. Conceptual framework**



**Figure 2. Results of analysis on hypothesized relationships**



**Controls**

Control Variables			Standardized estimate	SE	CR	P
Knowledge	←	Size	-.021	.075	-.281	.779
Knowledge	←	Age	-.057	.074	-.745	.456
Knowledge	←	Training Investment	.085	.327	1.202	.229
Knowledge	←	Ownership	-.105	.004	-1.745	*
Knowledge	←	Relational Capital	.005	.074	.086	.931

Note: \*p < 0.05; \*\*p < 0.01.; \*\*\*p < 0.001

**Table 1. Demographic characteristics of the respondents' firms (n=199)**

<b>Industry</b>	<b>Number of respondents</b>	<b>%</b>
Metal	14	7.0
Machinery	15	7.5
Retail & Distribution	35	17.6
Business services	13	6.5
Transportation	20	10.1
Logistics	19	9.5
Chemical	33	16.6
Electronics	26	13.1
Finance & Insurance	3	1.5
Others	21	10.6
<b>Age of IJV</b>	<b>Number of respondent</b>	<b>%</b>
3-5 years	13	7.0
6-10 years	61	30.5
11-15 years	31	15.5
16-20 years	25	12.5
21-25 years	36	18.0
More than 25 years	33	16.5
Average years	16.75	
<b>Number of employees</b>	<b>Number of respondents</b>	<b>%</b>
Less than 20	46	23.1
20-49	47	23.6
50-99	36	18.1
100-199	32	16.1
200-499	21	10.6
500-999	12	6.0
1000 and above	5	2.5
Average employees	153.2	

**Table 2. Measurement model: standardized parameter estimates**

	<i>Std. factor loadings</i>	<i>SE</i>	<i>Critical ratio</i>
<b><i>Sender's willingness (Cronbach's <math>\alpha = .815</math>)</i></b>			
1. The foreign parent is highly willing to transfer new processes and knowledge.	.841		
2. The foreign parent is very protective of its technology and	.712	.091	10.765

- process know-how.
3. Foreign parent managers and employees are generally positive about sharing technology and knowledge with the South Korean IJV. .827 .057 12.994

***Articulation & codification ability (Cronbach's  $\alpha = .881$ )***

1. Foreign parent employees can identify and clearly explain both orally and in writing what the South Korean IJV needs. .839
2. When the adoption of different practices of foreign parents is encouraged, foreign parent employees can clearly explain why the IJV should adopt such practices. .745 .076 11.903
3. It is easy for IJV employees to identify a foreign parent employee who can help them adapt the knowledge transfer. .788 .067 12.886
4. Oral and written materials (in the form of memos, notes or reports) provided by the foreign parent are relevant to improvement of IJV activities. .769 .071 12.429
5. It is easy for IJV employees to locate and extract the resources or additional information needed to understand the knowledge transferred. .728 .065 11.523

***Effective use of communication channels (Cronbach's  $\alpha = .876$ )***

1. The foreign parent effectively uses teleconferencing (e.g., telephone, video, etc.) to communicate with IJV managers. .810 .097 11.934
2. Foreign parent effectively uses (formal or informal) face-to-face meetings to communicate with IJV managers. .803 .091 11.808
3. If the South Korean IJV managers are looking for information, they can access a foreign parent employee who can act as a mentor. .783
4. The foreign parents has a clear communication system (e.g., lectures, presentations, seminars, etc.) to communicate with the South Korean IJV. .813 .079 11.987

***Opportunity 1 (interactive) (Cronbach's  $\alpha = .877$ )***

1. How often do IJV employees visit the foreign parent? .953 .046 23.082
2. How often do foreign parent employees visit the IJV? .957
3. How often do IJV employees visit the liaison, temporary task forces and permanent teams at the foreign parent to coordinate their decisions and actions? .623 .053 10.485

***Opportunity 2 (accessible codified knowledge) (Cronbach's***

$\alpha = .720$ )

- |  |      |      |       |
|--|------|------|-------|
| 1. Most of the knowledge that is needed from the foreign parent is contained in manuals, checklists, formal processes, routines and guidelines.  | .745 | .125 | 7.923 |
| 2. Resources, such as manuals (containing tools, templates, or frameworks), are developed and used by the foreign firm to assist the transfer of technical and other knowledge to the IJV. | .615 |      |       |

**Knowledge transfer** (Cronbach's  $\alpha = .932$ )

- |   |      |      |        |
|---|------|------|--------|
| 1. Written knowledge about the technology.  | .572 | .129 | 8.787  |
| 2. Procedural manuals or technical manuals.   | .925 | .072 | 17.807 |
| 3. Written knowledge about management techniques.   | .946 | .069 | 18.604 |
| 4. New marketing expertise.   | .836 |      |        |
| 5. Knowledge about foreign cultures and tastes.   | .837 | .071 | 14.930 |
| 6. Managerial techniques.   | .941 | .065 | 18.424 |
| 7. Knowledge acquired through the demonstration of practices and observation of working processes in the foreign company. | .896 | .060 | 16.802 |

**Table 3. Correlations of latent constructs and discriminant validity**

	Willingness	Articulation & codification	Communication channels	Oral I	Oral II	Knowledge transfer
Willingness	<b>.796</b>					
Articulation & codification	.568**	<b>.775</b>				
Communication channels	.356**	.647**	<b>.802</b>			
Oral I	.308**	.535**	.468**	<b>.858</b>		
Oral II	.609**	.596**	.432**	.302**	<b>.683</b>	
Knowledge transfer	.605**	.352**	.344**	.303**	.457**	<b>.859</b>

Note: Diagonal terms (in bold) are the AVE values (square root of the average variance extracted). Off-diagonal terms are the correlations of latent variables.

**Table 4. Multi-group path analysis of the moderating effects of knowledge relatedness**

From	To	High relatedness (N = 78)	Low relatedness (N = 70)	Univariate chi-square difference	p-value
		Estimate	Estimate		
Oral I (interactive)	Knowledge transfer	<b>0.185 **</b>	-0.073	3.779	<b>0.05</b>

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