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Knowledge Search and Governance Choice: International Joint Ventures in the People's Republic of China¹

Abstract

- This paper longitudinally examines knowledge search and governance choice in China-based international joint ventures from transaction costs and knowledge-based perspectives, complementing recent studies of IJV learning in other transitional economy contexts.
- The knowledge-governance link is tested from a local partner perspective in a transitional economy *from intention to formation*, using data on ninety IJVs over the 1988–1998 period.

Key Results

- Both the intentions to form equity ventures and their eventual formation are predicted by the Chinese firms' search for tacit knowledge, high knowledge base, and limited knowledge overlap with foreign partners. *Intentions* to form equity ventures are also predicted by a low knowledge base, producing a U-shaped effect that is not replicated at the formation stage. Implications for theory development are delineated.

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Introduction

The choice of mechanisms by which firms learn and accumulate new skills and capabilities is a fundamental issue in strategic management (Teece/Pisano/Shuen 1997). The knowledge-based theory of the firm focuses on knowledge as a key competitive asset and views the firm as a repository of specialized knowledge (Conner/Prahalad 1996, Kogut/Zander 1992). When knowledge is tacit and/or organizationally embedded, it is difficult to acquire and cannot be effectively transferred via markets or fully specified in a contractual fashion (Argote/Ingram 2000, Badaracco 1991).

Cooperative ventures differ in their ability to facilitate knowledge transfer across firm boundaries (Mowery/Oxley/Silverman 1996, Teece/Pisano 1994). The equity joint venture (EJV), legally and administratively independent from the parent firms, is considered superior to the non-equity joint venture (NEJV) as a vehicle for the transfer of tacit knowledge because of its ability to replicate the organization of the parent firms (Kogut 1988). In contrast, the more market-like NEJV, which includes contractual joint ventures and technology transfer agreements that do not involve equity sharing, does not accord an opportunity for organizational replication and hence does not facilitate tacit knowledge transfer (Osborn/Baughn 1990).

The nature of knowledge, however, is not the only determinant of governance choice in knowledge transfer (Pisano 1989, Lane/Salk/Lyles 2001). Knowledge search is also driven by the general or partner-specific absorptive capacity (Cohen/Levinthal 1990, Lane/Lubatkin 1998). From a knowledge-based perspective, the governance mode is chosen to facilitate knowledge absorption under these circumstances. From the transaction costs perspective, governance choice will reflect cost and hazard considerations, e.g., the potential for opportunism on the part of transacting parties (Williamson 1985).

In this paper, a model is developed to explain the choice of governance modes for international joint ventures (IJVs). Drawing on transaction costs and knowledge-based theories of the firm, hypotheses regarding modal choices for knowledge transfer are developed along three theory streams, namely, the nature of the knowledge, the knowledge base of the recipients, and the knowledge overlap between partners. Rather than following the customary use of formations as proxy for strategic intentions (Tallman/Shenkar 1994), this study longitudinally examines the 1988 preferences of Chinese firms and the China-based ventures they eventually formed with foreign partners up to 1998. While the IJV literature has generally treated the local partners as passive providers of relief from local customs and regulations (Yan/Gray 1994), we will examine Chinese partners as the focal firms in this study.

The study makes several contributions to the literature. First, it offers a test of knowledge-governance links from a local partner perspective in a transitional economy *from intention to formation*. To the best of our knowledge, it is the first longitudinal study of this kind in transitional economies and possibly in the IJV literature as a whole. The longitudinal nature of this study represents not only an empirical contribution, for the gaps revealed between intentions and formations offer key insights and hence venues for theory development which are now delineated in the paper. Second, the study combines transaction costs and knowledge-based perspectives on IJVs to develop the governance implications of learning and knowledge transfer in IJVs in China, thus complementing recent studies of IJV learning in other transitional economy contexts (e.g., Lane/Salk/Lyles 2001). Finally, this study has both theoretical (e.g., exploring the interface between transaction costs and absorptive capacity) and practical (e.g., understanding the preferences of local firms can help the MNE prepare for negotiations) repercussions.

Theory and Hypotheses

The nature of knowledge can be positioned along a continuum ranging from explicit to tacit. While explicit knowledge can be codified and programmed (Nonaka 1994), tacit knowledge is experiential and non-programmable, rooted in action and in an idiosyncratic context (Penrose 1959, Polanyi 1966, Nelson/Winter 1982). Embedded in a firm's context, tacit knowledge is unique and inimitable, and thus of greater strategic value (Barney 1991). Because it cannot be represented as a set of easily communicated rules and blueprints, tacit knowledge cannot be readily packaged and transmitted via contractual channels and is difficult to acquire, analyze, and disseminate (Dietrich 1994, Teece 1981). A virtual replication of the organization in which it is embedded is necessary if such knowledge is to be effectively transmitted (Kogut 1988, Conner/Prahalad 1996, p. 485).

More than other IJV modes, the EJV offers a reliable vehicle for tacit and embedded knowledge transfer between partners. From a transaction costs perspective, the hierarchical nature of the EJV permits the handling of contingencies which are likely to arise when such knowledge is transferred and implemented (Teece 1986). The EJV also tends to create synergetic effects leading to "common benefits" (Davies 1977, Khanna/Gulati/Nohria 1998). From a learning perspective, prolonged co-habitation of managerial and technical personnel from the foreign and local firms creates interactive learning opportunities within a mentoring context (Gulati 1995). The cohabitation permits behavioral processes that are conducive to knowledge transfer, e.g., continuous observation allowing

for vicarious learning and symbolic storage of appropriate behavior underlying the acquisition of complex knowledge (Wood/Bandura 1989).

In transitional economies, the knowledge learned from foreign parents tends to relate to skills in management, marketing, and decision-making (Lane/Salk/Lyles 2001, Shenkar/Li 1999). In a post hoc analysis, Lane et al. (2001) examined the content of knowledge learned by the Hungarian-based JVs between 1993 and 1996. They found a significant increase in the learning of the more tacit forms of knowledge such as managerial techniques and marketing expertise over the study period. Shenkar and Li (1999) used similar categories for learning in another transitional economy (China) and suggested that learning management skills entails highly tacit, socially embedded knowledge. The more tacit the knowledge, the more difficult it is to transfer and to assimilate it because of its social nature and causal ambiguity. This is especially true in transitional economies where learning new managerial skills requires cognitive and behavioral change (Child/Markoczy 1993, Shenkar/Li 1999, Lane/Salk/Lyles 2001). Therefore,

Hypothesis 1. When seeking knowledge transfer from IJV partners, local firms in transitional economies are more likely to choose an EJV over a NEJV when the knowledge is tacit.

From a knowledge perspective, a firm's knowledge base represents its "absorptive capacity", namely its ability to recognize the value of new external information, assimilate it, and apply it to commercial ends (Cohen/Levinthal 1990, p. 128, Lane/Salk/Lyles 2001). It is what makes the firm an effective "repository of embedded knowledge" (Badaracco 1991). From this perspective, having a limited knowledge base will curtail the absorptive capacity of the recipient company, triggering difficulties in absorbing knowledge from others (Ellis 1965). This includes the knowledge to be absorbed from IJV partners, which may well be the primary reason for forming the venture in the first place (e.g., Kogut 1988). In this logic, a firm with a substantial knowledge base will opt for an EJV because it is convinced that it will be in a position to benefit from the learning opportunities embedded in this mode.

From a transaction costs perspective, the argument is more complex. Broadly speaking, the absorptive capacity argument is focused on the perspective of the knowledge recipient in an IJV setting and hence is mostly concerned with how to develop knowledge resources via effective transfer. In contrast, transaction costs theory is more concerned with how to defend existing knowledge resources from the opportunism of others, in this case, the potential partners. Such defenses are not logically triggered unless the focal firm has become a nontrivial knowledge owner, by accumulating a substantial knowledge base. As the knowledge owner, local firms will opt for an EJV as a way of providing "mutual hostage" protection of rights that would be otherwise difficult to defend (Williamson 1975). Superior

monitoring and creation of incentives for the partners to support common rather than individual benefit add to the advantage of an EJV for a knowledge owner (Hennart 1988, Khanna/Gulati/Nohria 1998).

In transitional economies, the knowledge contributed by local partners tends to be embedded in the local environment (e.g., knowing how to adapt the technology to local conditions) (Inkpen/Beamish 1997, Luo/Shenkar/Nyaw 2001). Under an EJV, local partners can protect some of this embedded knowledge while learning from the foreign parent (see *Hypothesis 3* on low knowledge overlap). Also, because of incentives provided to EJVs in China, this mode accords better access to government sources of knowledge (e.g., research centers).

IJVs within transitional economies are not well represented by Hamel's (1991) "learning race" metaphor, rather, they are collaborations which foster competitive advantages by using the joint venture organization to create, store, and apply knowledge (Grant/Baden-Fuller 1995, Lane/Salk/Lyles 2001). Transferring knowledge between organizations is always difficult (Szulanski 1996), but differences between firms in developed and transitional economies add to the challenge. Understanding and assimilating complex organizational knowledge requires the active engagement of both parties as well as certain structural and cognitive preconditions. Theory suggests that forming a separate equity-based IJV organization will facilitate learning by providing the expectation of a stable, long-term relationship which allows trust and knowledge sharing to develop (Beamish/Banks 1987, Lane/Salk/Lyles 2001). Therefore,

Hypothesis 2. When seeking knowledge transfer from IJV partners, local firms in transitional economies are more likely to choose an EJV over a NEJV when they have a high knowledge base.

Learning from a partner in an IJV setting is a dyadic property pertaining to the development of relation-specific assets (Lane/Lubatkin 1998). The ability of a recipient firm to untangle and assimilate knowledge is a function of whether or not it has overlapping knowledge bases with its "teacher". The relationship between overlapping knowledge and partner-specific absorptive capacity is explicitly argued by Dyer and Singh (1998). Overlapping knowledge base allows collaborating firms to systematically identify valuable know-how in each other and transfer it across organizational boundaries, via inter-firm routines and social interactions.

Several empirical studies confirmed that knowledge overlap between partners facilitates partner learning and knowledge transfer (Lane/Salk/Lyles 2001, Mowery/Oxley/Silverman 1996, Szulanski 1996). However, previous studies have not examined the impact of knowledge overlap between the partners regarding governance choice. From a knowledge perspective, limited overlap between a local/recipient firm and its partner shifts the learning burden to the governance

form. The interactive learning and cohabitation provided by an EJV structure can compensate for the limited inter-party exchange by creating internal overlap within the venture's boundaries, establishing the interface necessary for knowledge transfer. An EJV is hence preferred from this perspective. From a transaction costs perspective, a low level of knowledge overlap increases uncertainty regarding partner behavior because the firm is less likely to be able to decipher the partner's actions (Williamson 1975). Uncertainty favors an EJV because it pre-empts the incorporation of contingencies into a contract. It also necessitates more protection for the transacting parties in the form of monitoring and access to independent financial information. Furthermore, the local partner is likely to prefer an EJV under low overlap because the embedded nature of its own knowledge requires multiple channels for diffusion. Therefore,

Hypothesis 3. When seeking knowledge transfer from IJV partners, local firms in transitional economies are more likely to choose an EJV over a NEJV when the knowledge overlap between partners is low.

Research Setting and Method

Research Site, Sample and Procedure

Explosive growth in the number of IJVs in China – from five in 1979 to hundreds of thousands today – presents a challenging opportunity for the study of IJVs in transitional economies (Pearson 1991). It is typical of such economies that local firms seek new technology, capital, and management and marketing skills from foreign partners. Lagging behind developed country standards, such firms nevertheless possess reasonable capabilities in using intermediate technologies, enjoying modest success in manufacturing some export-quality goods and benefiting from superior understanding of local markets and their institutions (Child 1994, Simon 1988).

The study was conducted in Shanghai, China's leading manufacturing base and home to almost 10 percent of all China-based IJVs in 1988 (*China Statistical Yearbook* 1998). The study was conducted in two phases. Phase I utilized a survey data set first collected in March 1988 from 90 proposed IJV projects seeking foreign partners. In Phase II, an event-history data set was developed in 1998, tracking the actual formation and governance mode of the 90 proposed IJV projects over the 1988–98 period. This paper reports the results of analysis based on both phases.

Phase I: Project Solicitations

Survey data were obtained from project listings of local firms seeking foreign partners, published by the Foreign Investment Development Agency (FIDA) in Shanghai (1988). Information on ninety IJV projects initiated by eighty firms was made available to prospective foreign partners seeking China-based IJVs. FIDA designed the questionnaire, which it passed on to the industrial bureaus in the city for distribution to individual firms. The questionnaires were filled out by the Managing Director (or his/her designee) of each firm that expressed interest in promoting its capabilities and requirements to prospective foreign investors. The senior author conducted site visits in 1994–95, in which he interviewed FIDA officials, the representatives of the Chemical Industries and the Electric and Electronics Industries Bureaus, and executives of about 1/3 of the firms. The visit confirmed that the firms provided genuine disclosure of their preferred IJV governance mode and a realistic assessment of their contributions to the proposed IJV.

The questionnaire covered the following items: (a) the nature of the proposed IJV project; (b) the IJV mode preferred by the local firm, i.e. an EJV or one of several NEJV forms; (c) the types of knowledge to be transferred from the foreign partner, i.e. management, marketing and/or technological know-how; (d) the contributions the local partners could make in those three areas; (e) the estimated number of employees for the IJV; and (f) whether the local parent was a state-owned firm or a collective/township enterprise. Preferences regarding foreign partner origin were not solicited in the original survey.

Phase II: Actual Formations

A follow-up survey was conducted in 1998 to develop event-histories of actual IJV formation and governance choice of the proposed IJVs over the 1988–98 period. We tracked the 90 proposed projects with secondary data sources such as directories of Shanghai-based IJVs, phone directories, and information from our 1994–95 field interview records of 30 firms. We then conducted telephone interviews with all sample firms to confirm the status of the proposed IJV project, the governance mode adopted, nationality of the foreign partners, and the types of knowledge transferred. Of the original 90 projects, 10 projects had been solicited by firms that were no longer in existence (four went bankrupt and six were closed during the study period). Interviews with their supervising government bureaus confirmed that their closure was the result of state restructuring or poor operations, and was not IJV related. Of the remaining 80, phone interviews were conducted with the General Manager or other senior managers having information regarding the related projects. Among those, 34 (43 percent) project soli-

citations resulted in actual IJV formations, including 29 EJVs and 5 NEJVs.² The remaining 46 solicitations did not yield an IJV throughout the study period and were treated as right-censored. The 80 projects form the sample for the event-history analysis.

Models and Dependent Variables

Phase I: Logistic Models on EJV Preferences

Among the 90 proposed IJV projects, 53 (59 percent) indicated seeking EJVs only, 11 (12 percent) indicated seeking NEJVs only, 26 IJVs (29 percent, from 22 firms) did not indicate preference for an EJV or a NEJV. The dependent variable, the preferred governance mode of an IJV, was coded as an ordinal response variable, with $JV = 3$ if the local partner preferred an EJV, $JV = 2$ if no preference in JV structure, and $JV = 1$ for a NEJV.

An ordinal logistic regression model was used to examine the propensity of local firms to seek an EJV rather than a NEJV. The model was estimated with the maximum likelihood method:

$$P[JV] = 1 / \left[1 + \exp \left(- \sum_{j=1}^k B_j X_j \right) \right].$$

Where $P[JV]$ is the probability that an EJV is sought and X_j is the vector of explanatory variables in this study, including the nature of knowledge to be transferred, the knowledge base of the local partner, the knowledge overlap between partners, and control variables such as IJV size, local parent firm size, state ownership, and an industry dummy variable.

Phase II: Event-history Analysis of Actual Formations

An ordinal logistic regression model was also used to examine the actual selection of EJV governance mode upon IJV formation.³ The dependent variable for the actual formation sample was coded as an ordinal response variable, with $JV = 3$ if the local partner selected an EJV mode, $JV = 2$ if there was no JV formation during the study period, and $JV = 1$ for a NEJV formation.

Independent and Control Variables

Nature of Knowledge

In the absence of a continuous measure, three binary variables were used to indicate whether a local firm was seeking the transfer of management, marketing, or technology know-how from a foreign partner. For example, binary variable Management is coded as "1" if a local firm was seeking the transfer of management skills from a foreign partner, and "0" otherwise. Following Lane et al. (2001) and Shenkar and Li (1999), management and marketing skills were taken to represent tacit or embedded knowledge. In contrast, technology can be typically codified and is less imprinted in organizational idiosyncrasies and routines than are marketing and especially management. This is particularly true for Chinese firms, which tend to have a narrower view of technology than Western companies (Pearson 1991).

Knowledge Base

Two recent empirical studies have examined the types of knowledge and learning in IJVs in transitional economies (Lane/Salk/Lyles 2001, Luo 1999). Lane et al. (2001) use a survey questionnaire to measure knowledge transfer from foreign parents for Hungary-based IJVs in five areas: managerial techniques; marketing expertise; technological expertise; product development; and manufacturing process. In another study, Luo (1999) examines knowledge of foreign parents in four areas including organizational capabilities, marketing knowledge, technological skills, and environmental familiarity for IJVs in China.

Consistent with these empirical studies, we use the contributions of local partners in three areas (i.e., management, marketing, and technology) as a proxy for the knowledge base of the local partners. The local partners' contributions to the IJV were measured as binary variables, namely whether or not local firms were able to contribute their knowledge, in each of the areas above, to the venture. Those contributions were summed up to create a 0 to 3 index (3 = highest), taken to represent the local partner's knowledge base. While our measure of local partner knowledge base is constrained by the data, it can, nonetheless, serve as an indicator of the general absorptive capacity of the local partners (e.g., Luo 1999). Future research is clearly needed in collecting more fine-grained measures of the local partner knowledge base.

Knowledge Overlap

Drawing on the partner-specific absorptive capacity argument, we examine the knowledge overlap between local and foreign partners as a predictor of IJV governance form. Knowledge overlap is measured by inter-partner similarities in each of the three knowledge realms we discussed above.

An overlap was judged when a local partner sought knowledge transfer in an area in which it already possessed knowledge. For instance, the overlap was coded as "1" if a local firm sought the transfer of marketing skills from the foreign partner when it already possessed marketing knowledge and "0", otherwise. The three overlaps were then aggregated to form a knowledge overlap index ranging from 0 to 3. A score of 3 indicates that the local firm has knowledge overlaps in all three areas with a potential partner. For the IJVs, assimilating foreign parent knowledge is a sense making process whereby the IJV connects the new knowledge to its existing knowledge. Therefore, the relevance of the student firm's basic knowledge to the teacher firm's knowledge base will be positively associated with the interorganizational learning (Luo/Shenkar/Nyaw 2001).

Control Variables

Based on theory and literature review, five control variables have been added to the models: IJV size, local parent firm size, state ownership, single or multiple ventures, and an industry dummy variable. Penrose (1959) as well as Osborn and Baughn (1990) suggest that the size of the IJV and the size of parent firms are important determinants of the governance structure of alliances. IJV and local parent firm size were measured by the number of employees (in thousands).

The ownership structure of local partners, such as state ownership, may affect the choice of the IJV structure because state-owned firms face different institutional pressures from non-state firms (Child 1994). State-ownership is coded as "1" for state-owned firms, and "0" for non-state (e.g., collective, township) firms. Multiple alliances increase the relative scope of inter-firm cooperation and could affect the tendency to extract common versus private benefits (Khanna et al. 1998). There is also evidence that repeated alliances between two partners are less likely to be equity-based as a result of emerging inter-firm trust (Gulati 1995).⁴ The variable is coded as "1" if the local firm was seeking multiple IJVs and as "0" for a single IJV.

Finally, given that industry conditions may alter the preferences for IJV mode (Harrigan 1988, Hitt/Ireland/Goryunov 1988), it is prudent to control for potential industry level effects. The previous studies show that foreign firms are more likely to internalize their operations in the overseas markets in industries with high advertising intensity (e.g., Gatignon/Anderson 1988, Pan/Tse 2000). The

rationale is that firms need to protect their brands, which are the outcomes of their investment in brand building through advertising (Osborn/Baughn 1990, Pan/Tse 2000). Thus, firms in industries with high advertising intensity, such as consumer industries, are more likely to adopt an EJV mode. Therefore, we coded dummy variables for two sectors: consumer goods and industrial goods (Osborn/Baughn 1990). Other industry level analyses were pre-empted by sample size.

Results

Table 1 reports the descriptive statistics and correlation matrix for all variables for intention data. Among the 90 proposed IJVs, the majority was seeking EJVs. About one third sought the transfer of management skills, and over half sought the transfer of marketing skills or technology, respectively. The majority of local partners were able to contribute to the IJV in at least one knowledge area, thus possessing a basic level of general absorptive capacity. In about half of the cases, local partners overlapped with foreign partners in the areas where they sought knowledge transfer. Seventy four percent of the sample firms were state-owned, and 23 percent of the IJVs were from local firms seeking multiple ventures simultaneously. About two-thirds of the IJV projects were in consumer industries.

Table 2 reports the descriptive statistics for the sample of 80 IJV projects where event-history data on actual IJV formation were available. Of these 80 proposed ventures, 34 formed IJVs and the remaining 46 did not form IJVs during the study period. The majority of local firms were able to contribute to the IJV in at least one knowledge area. In 40 percent of the cases, local partners overlapped with foreign partners in the areas where they sought knowledge transfer.

Table 1. Descriptive Statistics and Correlation Matrix: Intentions

Variables	Means	s.d.	Mini- mum	Maxi- mum	1	2	3	4	5	6	7	8	9	10
1. Joint venture	2.48	0.69	1	3	1.0									
2. Seek management	0.33	0.47	0	1	0.16	1.0								
3. Seek marketing	0.54	0.50	0	1	0.11	0.50*	1.0							
4. Seek technology	0.58	0.50	0	1	-0.07	0.56*	0.80*	1.0						
5. Knowledge overlap	0.98	1.27	0	3	-0.01	0.73*	0.67*	0.64*	1.0					
6. Knowledge base	1.36	1.35	0	3	-0.02	0.51*	0.59*	0.53*	0.84*	1.0				
7. IJV size	0.27	0.25	0.009	1.8	-0.06	0.08	-0.04	-0.02	0.06	0.06	1.0			
8. State-ownership	0.74	0.44	0	1	-0.22*	0.25*	-0.08	0.12	0.19	0.08	0.10	1.0		
9. Multiple venture	0.23	0.43	0	1	-0.47*	0.11	0.19	0.26*	0.07	0.03	-0.13	0.32*	1.0	
10. Consumer goods	0.69	0.47	0	1	0.26*	-0.03	-0.18	-0.14	-0.09	-0.09	0.01	-0.06	-0.25*	1.0
11. Local parent size	1.95	4.89	0.04	35	0.02	0.02	-0.04	0.13	-0.07	-0.12	-0.01	0.19	-0.02	0.12

Note: * $p < 0.05$; $N = 90$

Table 2. Descriptive Statistics and Correlation Matrix: Actual Formation

Variables	Means	s.d.	Mini- mum	Maxi- mum	1	2	3	4	5	6	7	8	9	10
1. Equity joint venture	2.30	0.58	1	3	1.0									
2. Seek management	0.36	0.48	0	1	0.15	1.0								
3. Seek marketing	0.55	0.50	0	1	-0.05	0.53*	1.0							
4. Seek technology	0.56	0.50	0	1	-0.02	0.61*	0.87*	1.0						
5. Knowledge overlap	1.03	1.29	0	3	-0.09	0.73*	0.68*	0.71*	1.0					
6. Knowledge base	1.36	1.36	0	3	-0.10	0.53*	0.58*	0.61*	0.86*	1.0				
7. IJV size	0.27	0.26	0.009	1.8	0.12	0.07	-0.04	-0.01	0.07	0.07	1.0			
8. State-ownership	0.78	0.42	0	1	0.07	0.22	-0.01	0.13	0.20	0.12	0.07	1.0		
9. Multiple venture	0.24	0.43	0	1	-0.14	0.13	0.27*	0.26*	0.10	0.09	-0.16	0.30*	1.0	
10. Consumer goods	0.69	0.47	0	1	0.12	0.00	-0.18	-0.16	-0.05	-0.06	0.01	-0.04	-0.26*	1.0
11. Local parent size	1.99	5.16	0.08	35	0.23*	0.01	-0.03	0.12	-0.07	-0.11	-0.02	0.17	-0.05	0.14

Note: * $p < 0.05$; $N = 80$

Table 3 reports the results of the data analysis.⁵ Models 1–4 report the logistic regression estimates where the dependent variable was the preference of an EJV mode for the IJV. Models 5–7 report the results of logistic regression estimates for the actual formation sample, where the dependent variable was the selection of EJV structure selection upon formation. Overall, the models were fairly robust, as indicated by their -2 log likelihood(s) and associated chi-squares.

For the logistic regression analysis of EJV modal intentions, several interesting results emerge. First, the EJV was the preferred mode for local firms seeking transfer of tacit knowledge (i.e., marketing and management skills), supporting the first *Hypothesis 1*. The NEJV was preferred when seeking the transfer of technology, shown by the negative effect of technology transfer on the preference of EJV in Models 1–4 in Table 3. Second, *Hypothesis 2* is supported with a high knowledge base predicting an EJV. However, a low knowledge base also predicts an EJV choice. In other words, a local partner’s knowledge base shows a curvilinear effect on its preference for EJV structure: a negative first-order but a positive second-order effect on EJV structure preference (Model 4). The inflection point for knowledge base is 1.29, well within the observed data range (just below the mean of 1.36). Finally, the intention results show that a limited knowledge overlap between partners increases the propensity of local firms to seek an EJV, supporting the *hypothesis* on partner-specific absorptive capacity (*Hypothesis 3*).

The findings of the event-history analysis of EJV formation over the 1988–1998 period are reported in Models 5–7. The results show that tacit knowledge (e.g., management) has a positive effect on the actual selection of EJV mode, confirming H1. A local partner’s knowledge base has a positive effect on the selection of the EJV mode upon formation, confirming *Hypothesis 2*. In a departure from the intention results, actual formations show no curvilinear effect.



Table 3. Selection of Equity Joint Ventures

Variables	Preferences for Equity JV (1988) Logistic Regression Estimation			Propensity to Form Equity JV (1988-98) Logistic Regression Estimation			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Intercept 1	3.84*** (1.0)	3.74*** (1.02)	3.74*** (1.03)	3.35*** (1.03)	2.43*** (0.92)	2.24** (0.93)	2.41** (0.96)
Intercept 2	1.18 (0.86)	0.74 (0.84)	0.74 (0.86)	0.18 (0.87)	-1.40* (0.85)	-1.62* (0.85)	-1.47* (0.87)
IJV size	-1.30 (0.94)	-1.19 (0.95)	-1.19 (0.95)	-1.29 (0.97)	0.93 (0.96)	0.90 (0.95)	0.97 (0.95)
Local parent size	0.07 (0.08)	0.04 (0.07)	0.04 (0.08)	0.05 (0.07)	0.48* (0.25)	0.50* (0.26)	0.50** (0.25)
State-ownership	-1.13 (0.78)	-0.72 (0.76)	-0.72 (0.76)	-0.02 (0.81)	0.08 (0.72)	0.13 (0.73)	-0.10 (0.77)
Multiple venture	-2.15*** (0.65)	-2.55*** (0.71)	-2.55*** (0.71)	-3.16*** (0.79)	-1.06 (0.70)	-1.10 (0.71)	-0.95 (0.73)
Consumer goods	1.11** (0.55)	1.19** (0.56)	1.19** (0.57)	1.46** (0.60)	-0.12 (0.56)	-0.15 (0.57)	-0.21 (0.57)
<u>Knowledge sought</u>							
Management	1.49** (0.68)	2.65*** (0.89)	2.65*** (0.93)	2.13** (0.98)	2.71*** (0.93)	2.98** (0.99)	3.25*** (1.03)
Marketing	2.44** (1.09)	3.72*** (1.26)	3.72*** (1.26)	5.40*** (1.54)	0.64 (1.13)	0.83 (1.16)	0.60 (1.20)
Technology	-2.82*** (1.09)	-2.89** (1.14)	-2.89** (1.14)	-2.98** (1.20)	-0.30 (1.16)	-0.49 (1.19)	-0.68 (1.23)
Knowledge overlap		-0.93** (0.40)	-0.93** (0.56)	-1.72** (0.72)	-1.03*** (0.38)	-1.43*** (0.56)	-1.26** (0.59)
Knowledge base			0.001 (0.37)	-2.84** (1.24)		0.36* (0.20)	1.33 (1.10)
Knowledge base ²			1.10** (0.46)	1.10** (0.46)			-0.37 (0.42)
-2 log likelihood	112.1	105.9	105.9	99.8	110.3	109.3	108.5
Chi-square	42.6***	48.8***	48.8***	54.9***	39.8***	42.1***	43.7***

Note: *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$; Standard errors are in parentheses.

Similar to intention data results, formation data supports *Hypothesis 3*, with low knowledge overlap predicting an EJV.

The results also show the effects of several control variables. Local firms prefer an EJV for projects in consumer industries and a NEJV when searching for multiple ventures. For actually established IJVs, large parent firms increase the likelihood of opting for an EJV. IJV size, however, does not show effects in all models.

Discussion

A central assumption in the IJV literature is that the EJV is the vehicle of choice for the transfer of tacit knowledge (*Hypothesis 1*). This assumption, consistent with both transaction costs and knowledge-based views of the firm, is supported in this study for both the intention and the actual IJV formation data. To our best knowledge, this is the first time that this assumption is confirmed not only for actual formations but also at the level of strategic intentions, solidifying support for the relationship between knowledge type and governance.

Also supportive across both intentions and formations are the results for *Hypothesis 3*. In line with the original hypothesis, limited knowledge overlap among the partners predicts an EJV. The fact that the results from intentions and formations are similar suggests, from a transaction costs perspective, that foreign partners share the preferences of Chinese firms and opt for an EJV as a way of protection from the uncertainty entailed in the operation of a party with different skills. From a knowledge-based perspective, the formation results may reflect a belief on the part of the foreign partner that it is more capable of developing relation-specific assets which will allow it to beat its partner in the "race to learn" (Dyer/Singh 1998, Hamel 1991, Williamson 1985).

Most interesting are the divergent results obtained for intentions and formations in testing *Hypothesis 2*. The intention results show a U-shaped effect of knowledge base that is not replicated for formation models. For local partners, an EJV is desirable not only when one has a significant knowledge base (as initially hypothesized), but also when it lacks such a base altogether. This latter finding can be explained in that the local firm who lacks a knowledge base is seeking an EJV in the hope that it will compensate for its own knowledge deficiency. These local firms, not IJV experienced and not knowledgeable about the manufacturing process and the product, apparently believed that the co-habitation with a foreign firm would be sufficient to generate knowledge diffusion. In contrast, local firms with some knowledge base were more realistic about their ability to absorb knowledge by virtue of governance alone.

By the time the IJV is formed, a low knowledge base is no longer an EJV predictor however. Assuming that the intention-to-formation change is the result of a foreign partner bargaining for its preferences, this implies that the foreign partner is less interested in establishing an EJV when the local partner has little to offer in terms of its own knowledge. This partner is typically viewed to sustain rents from its knowledge and is regarded as only being interested in the local partner's government contacts, understanding of the local market, and so forth. The results in this study suggest that the foreign firm may be looking for a local partner with sufficient professional skills to enable effective learning. This implies that local partner learning may not be viewed by the foreign parent so much as a threat, but rather as a prerequisite for the IJV's efficient operations without which the interests of the foreign investor may be seriously harmed. This seems to support an organizational learning approach which emphasizes the positive aspects of learning, largely taking on a knowledge recipient perspective, over a transaction costs perspective which largely represents a knowledge owner perspective. However, other results in this paper suggest some convergence of the two perspectives.

The differences between intention and formation data on the control variables can largely be explained as a bargaining outcome (Yan/Gray 1994). As Barnett, Greve and Park (1994) argue, large size protects firms from the process of selection, in this case enabling the local partners to implement their desired governance mode. When seeking to form multiple IJVs, Chinese partners are likely to prefer NEJVs—a result consistent with previous studies (e.g., Gulati 1995). The result is also consistent with our field interviews with several companies seeking foreign partners for multiple ventures. The interviews suggested that the managers were concerned about the fact that forming multiple EJVs will drain the limited financial and managerial resources of the Chinese parent.

Finally, the focus on consumer (*vis-à-vis* industrial) goods has an impact on modal intentions but not on actual formations. One explanation is that consumer goods involve tacit market knowledge in the eyes of a recipient but not on the part of a sophisticated foreign player. Another explanation is that foreign parents command a clear advantage in the industrial sector, which includes capital goods with more complex technology, and their bargaining power could have counterbalanced the Chinese preference for EJVs. As previous studies have generally found that firms in industries of high advertising intensity favor an equity mode over a non-equity mode (e.g., Pan/Tse 2000), further studies are needed to clarify the industry effects.

Limitations and Future Research

Special circumstances pertaining to the present study affect but do not necessarily challenge the generalizability of the findings. For example, Koza and Lewin (1998) argue that absorptive capacity will have its greatest impact in alliances seeking explorative knowledge, suggesting generalizability of the argument to transitional economies. The sample's restriction to manufacturing actually provides a tougher test for the theory. In contrast to extractive industries, where the bargaining power of the host country is initially low but tends to increase with the rising cost of disengagement, in manufacturing industries the bargaining position of the host government is the greatest at the outset. This implies that the gap uncovered between intentions and formations regarding knowledge base might be even more pronounced in extractive industries.

In addition, while the Chinese government may have influenced IJV mode choice by expressing approval and offering incentives that favor EJVs, it did so precisely because it viewed the EJV mode as more effective for the transfer of tacit knowledge. And while China's market attractiveness increased between 1988 and 1998 that enhanced the government's bargaining power, the results suggest a considerable impact of foreign partner preferences. Taken as a whole, country-specific circumstances should be considered among other "externalities which influence the value of the strategic assets to the parties" (Kogut 1988, p. 321).

The present study provides an additional impetus to adopt longitudinal research design in IJV research. The different results obtained for intentions and for actual formations underline the dynamic nature of IJV systems. Extending longitudinal designs further into the IJV life cycle will allow for the testing of additional yet unproven predictions. For instance, Dymysza (1988) noted that in IJVs between developed and developing country partners, the latter's contribution is likely to become less important over time. Similarly, Mowery et al. (1996) suggests that partner-specific absorptive capacity among alliance partners may increase over the course of collaboration as a result of organizational learning and technology transfer within the venture.

Finally, while this study provides a glimpse of foreign partner intentions as extrapolated from the gap between local partner intentions and actual formations, a natural extension would be to collect data from foreign partners directly, preferably while controlling for nationality. Such expansion of research scope should complete the view of IJVs as the dynamic, multipartite systems.

Endnotes

- 1 We thank Tim Devinney, Anne Tsui, Steven White, and editors (Torben Pedersen and Volker Mahnke) and reviewers of the special issue for comments and suggestions, and Abbie Hui for research assistance. We gratefully acknowledge support from Hong Kong RGC Competitive Earmarked Grant (HKUST6198/98H) and Wei-Lun Foundation.
- 2 We have also collected information on the nationality of the foreign partners. The 29 EJVs include foreign partners from 10 countries: Hong Kong (9 EJVs), USA (7), Germany (4), Japan (3), Taiwan (3), and one each from Belgium, France and Thailand. The five NEJVs include two from Hong Kong, and one each from Japan, Taiwan, and USA. The IJV literature has shown that the nationality of foreign partners affects IJV governance mode choice (e.g., Pan/Tse 2000, Luo/Shenkar/Nyaw 2001). Our limited sample size, however, precludes the exploration of foreign partner nationality in the statistical analysis.
- 3 We have also run Cox (1972) proportional hazard regression models, with similar results as those for multinomial logistic regressions reported in Table 3.
- 4 Because we also examine the intentions, we cannot measure the repeated alliances between two partners. Therefore, we have included "seeking multiple jv" as a control variable.
- 5 To address the issue of high correlation between some variables and possible multicollinearity, we have run multiple models where we enter each of the variables separately into the models. The results are consistent with those reported in Table 3. The results of these additional regression models can be obtained from the authors.

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