
The authors develop a model to examine systematically the relationship among motivation, control, and performance of joint ventures in China. Motivations are categorized into three dimensions: efficiency, competition, and learning. Motivations determine the level of control in joint ventures, and that level affects the joint venture's performance. The authors collected data from Japanese, Korean, and U.S. partners of joint ventures in China. They use structural equation modeling to test the model and examine cross-national differences using a multi-group comparison method. The results suggest a complex relationship among motivation, control, and performance. More control over joint ventures in China is beneficial to foreign partners, but the ability to exert control is influenced by firms' strategic intentions and familiarity with the local culture and market. Foreign partners that have such familiarity can exert considerable control over joint ventures and still obtain local knowledge. Foreign partners that want to enhance competitiveness can apply their advanced skills and technology in research and development, production, and management to exert more control over these functional areas.

Over the past two decades, increasing numbers of firms have committed to global markets (Beamish 1993; Gray and Yan 1997). Joint ventures are the main form of entry for multinational firms in developing countries (Barkema and Vermeulen 1997; Vanhonacker and Pan 1997). Research in this field is of interest to both managers and academicians, because joint ventures enable firms to pool various forms of expertise in order to upgrade joint operating competencies (Beamish 1993; Buckley and Casson 1996, 1998; Makino and Delios 1996).

Despite many advances, the research on joint ventures is incomplete. First, reasons for the failure of and dissatisfaction with joint ventures are still major concerns for academicians and practitioners (Ding 1997; Gray and Yan 1997; Inkpen and Beamish 1997). The primary problems in managing joint ventures appear to stem from the disparate skills and objectives of the partners (Makino and Beamish 1998; Makino and Delios 1996). Given the potential for conflict, control issues are an important consideration for partners (Ding 1997). It is often difficult for parent firms to exercise control over joint

ABSTRACT

Roger J. Calantone and Yushan Sam Zhao

Submitted August 1999
Revised August 2000
© Journal of International Marketing
Vol. 9, No. 1, 2000, pp. 1–23
ISSN 1069-031X
ventures, however, because they cannot rely solely on their ownership positions to determine the behavior and management of the joint venture.

Second, contradictory results have been observed in the empirical testing of joint venture models (Yan and Gray 1994), but comparison of these studies is difficult because of differences in variable measurement. A valid comparison requires metric equivalence across countries. Many authors call for direct comparison of theoretical frameworks in different countries to advance the understanding of joint ventures (Yan and Gray 1994).

Several researchers have explored the issue of control in joint ventures (Ding 1997; Gray and Yan 1997; Lin, Yu, and Seetoo 1997). Some studies conceptualize control as the bridge between the strategic intentions and performance of parent firms. Control is considered the mechanism whereby parent firms implement strategies and protect their interests. Gontrol and Hebert (1988) find that the degree of parent control is determined by the firm's strategic intention, that is, its motivation. Ding (1997) and others have reported strong but inconsistent correlations between control and performance.

The issue of control is complicated in China because of the nation's special economic and political conditions (Beamish 1993; Ding 1997; Child, Yan, and Lu 1997; Osland 1994; Vanhonacker and Pan 1997). In Sino–foreign joint ventures, expertise in research and development (R&D), marketing, and finance is likely to be located in the foreign partner. Foreign partners that want to improve competitiveness or market power need to control these major functional areas. At the same time, local knowledge is likely to reside with Chinese partners. An unstable political and economic environment is perceived to influence the Chinese market, so many foreign investors rely on their Chinese partners to help reduce risk (Osland 1994). Also, to take advantage of local resources, foreign partners must rely on the Chinese partners to negotiate with local governments to provide access to local elite and manage local labor (Makino and Delios 1996; Osland 1994).

These considerations suggest that foreign partners' control over joint ventures is greatly influenced by their strategic intentions in developing countries such as China, which historically have institutionalized this kind of relationship in their own unique terms (Li 1998). It is instructive from both a theoretical and practical perspective to explore how strategic intention is related to control in Sino–foreign ventures. This study proposes a model that characterizes the relationships among firm-level strategic objectives (motivations), control, and performance.

Roger J. Calantone and Yushan Sam Zhao
We study Japanese, Korean, and U.S. partners in joint ventures in China. Japan is highly developed and is similar in culture to China. Korea is newly developed, is very close to China in terms of culture, and is relatively closer in terms of economic level. Compared with Korean partners, the Japanese partners face a more difficult situation in China for historical reasons. Finally, the United States is totally different from China in terms of social and economic systems. Testing the model with these three countries enables us to assess its generalizability.

We use structural equation modeling to test the model. We draw some general conclusions about the relationship among motivation, control, and performance on the basis of data collected from Japanese, Korean, and U.S. joint venture partners in China. We then perform a direct cross-national comparison using multigroup methods to explore any differences among the three.

The article is organized as follows: First, we review prior research on motivation, control, and performance of joint ventures. Second, we present the model and propose research hypotheses. Third, we discuss the methods, including data collection and analysis. We close with a discussion of empirical results, implications for international managers, and directions for further research.

A firm’s motivations are its strategic objectives (Lin, Yu, and Seetoo 1997). Research on joint venture formation has been conducted from a variety of perspectives (Lin, Yu, and Seetoo 1997). In his study of Japan, Hennart (1991) uses transaction cost theory and finds that firms are likely to form joint ventures when the partner provides intermediate input that is subject to high market transaction costs. For example, many joint ventures in China are attempts to obtain access to resources controlled by local firms. Makhija and Ganesh (1997) examine the formation of joint ventures from an organizational learning perspective and conclude that firms use joint ventures to acquire knowledge from partners to enhance their global competitiveness. Learning is particularly critical for entry into foreign markets, because a firm lacks knowledge of local conditions. Research based on game theory and resource dependence theory has found that firms are likely to form joint ventures if the partners have highly complementary skills and resources (Park and Ungson 1997). An optimal joint venture is one in which the assets, skills, and culture of the partners are complementary (Barkema and Vermeulen 1997). Studies also point out that a joint venture is an effective way of enhancing market power and firm competitiveness (Kogut 1988; Osland 1994).

The unique circumstances in China are another motivation for joint ventures. First, it has a state-dominated economy,
with strict government control over market operations. Teagarden (1990) finds that many Sino-foreign joint ventures are greatly influenced by government policy. For example, many were in an extremely difficult situation in the early 1990s because of Chinese adjustments in foreign and domestic policy after the 1989 Tiananmen event. Second, state-owned firms play a vital role in the Chinese economy, a cornerstone of which is public ownership. Even though the private sector has developed with the emergence of a free market, state-owned firms are still in a dominant position and are the most likely partners for foreign firms. The government can directly control these firms and influence their operations.

On the basis of a literature review and consistent with Lin, Yu, and Steetoo's (1997) work, we identified three dimensions of motivation: learning, efficiency, and competition. An efficiency-motivated foreign partner seeks mainly to improve operations and reduce its cost. A competition-motivated partner is mainly concerned with enhancing market power and competence. A learning-motivated partner mostly focuses on gaining the know-how of a local partner regarding the local market and culture.

Control can be defined as the process through which a parent company's interests are protected. According to Geringer and Hebert (1988), control refers to the process whereby one party influences, to different degrees, the behavior and output of another party through the use of power, authority, and a wide range of bureaucratic, cultural, and informal mechanisms. Through control, a partner influences the joint venture to behave in ways that lead to the attainment of the organization's objectives.

Control is a key issue in much joint venture research. These ventures are formed by two different firms, often with diverse objectives. The partners are usually independent but expect to make gains by forming the joint venture. Each needs the other to enhance its own interests, and this need can be a source of opportunism (Park and Ungson 1997; Parkhe 1993). The literature on strategic alliances stresses the importance of legally enforceable contracts in resolving opportunism (Parkhe 1993), but this approach is questionable in China. Its planned economy is characterized by a weak capital market structure, poorly specified property rights, and institutional instability (Li 1998; Xin and Pearce 1996). Formal contracts are not likely to be effective in this special environment. Also, China is politically sensitive, and economic activities are likely to be politicized (Li 1998). Managerial control is a substitute for reliable government and an established law, and it is extremely important in joint ventures in China.

Roger J. Calantone and Yushan Sam Zhao
Exercising effective control over a joint venture is often difficult for both sides. Each faces a conflict between the desire and the ability to exert control over joint ventures (Mjoen and Tallman 1997). Intuitively, most partners want a high level of control, which is consistent with the bargaining power perspective. Makhija and Ganesh (1997) use the concept of perceived bargaining power to explain the ability to control. They argue that variances in composition and distribution of power within an organization should influence the design and use of control mechanisms. A partner with greater bargaining power can affect the design and use of control mechanisms more than the partner with less power. In other words, the level of control by one party reflects its importance in the joint venture. A party whose need for the other's special resources is high has reduced bargaining power and cannot gain complete control over the joint venture. Almost by definition, each partner in a joint venture has resources that are crucial for the other. The resources are so embedded in their organizations that the market fails to transfer intermediate goods adequately and neither firm can afford to acquire all of the other. Therefore, foreign partners that want to take advantage of local resources (both human and natural) are likely to give part of the control to the local firm because of its local knowledge.

Various approaches have been employed to study control. Three dimensions identified in the literature are the scope of control, the extent or degree of control, and the mechanisms through which control is exercised (Geringer and Hebert 1988). The scope of control refers to the area of the joint venture operation over which control is exercised. The extent of control is the degree to which control is exercised. The mechanisms of control are the means by which control is exercised. In this study, the scope and the extent of control are emphasized.

Joint ventures are less likely to be maintained without superior performance. Many studies examine the influence of different variables on joint venture performance. Configuration of performance, however, has been a controversial topic in the organizational literature (for a review, see Lewin and Minton 1986). There are many ways to evaluate performance, and few indicators are widely accepted (Yan and Gray 1994).

The controversy mainly concerns two issues: (1) From whose perspective (one partner, the other, or both) is performance measured? and (2) What measures are used (ranging from subjective judgments to financial indicators) (for a review, see Yan and Gray 1994)? The lack of consensus makes cross-national comparison of and generalizations about joint venture performance particularly problematic. We adopt the foreign partner's perspective on financial performance for ease of cross-national comparison.

Joint Ventures in China
Cross-National Comparison

Most constructs related to joint ventures have been developed and tested in a single country (Beamish 1993). There are two limitations to such studies. The first involves metric equivalence of the constructs, and the second involves the generalizability of results.

Cross-national researchers stress that metric equivalence of constructs and relationships among the constructs must be established to ensure generalizability (Calantone, Schmidt, and Song 1997; Durvasula et al. 1993). In our study, many factors influence the validity of the five constructs: efficiency, competition, learning, control, and performance. For example, the motivation of Japanese partners in China is affected by historical hostility between the two countries. Consequently, their perceptions of control tend to differ from those of Korean and U.S. partners. Another example is learning, which is a key issue for U.S. firms first venturing into China because of the wide disparity in social and economic environments, whereas there is considerable cultural similarity between Japan or Korea and China. Therefore, we assess the cross-national applicability of the model before evaluating cross-cultural difference.

The generalizability of joint venture theories is a major concern (Inkpen 1995; Makino and Beamish 1998; Zeira, Newbury, and Yeheskel 1997). For example, fundamental differences appear to exist between the Japanese approach to joint ventures and other approaches. Although many scholars have called for an examination of the applicability of these theories (e.g., Zeira, Newbury, and Yeheskel 1997), research is lacking. Testing models cross-nationally is a necessity to determine the generalization of joint venture theories.

The theoretical framework in this study, shown in Figure 1, is based on the bargaining power literature. A firm's motivations represent its strategic intentions (Lorange and Roos 1990). These intentions emphasize the importance of certain firm resources (such as physical and financial assets, specialized information, and expertise), which in turn determine the level of control one party can exert over the joint venture. In Figure 1, strategic objectives (motivation) are the input to the joint venture system, control is the process of the system, and performance is the output. Motivations influence control, and control influences performance (see also Lin, Yu, and Seetoo 1997). A discussion of the general relationships in the model follows.

**Efficiency.** A foreign partner with an efficiency objective is mostly concerned with reducing risk and costs, using the partner's resources efficiently, and overcoming government restrictions (Contractor and Lorange 1988; Hu and Chen 1993). The literature suggests that foreign partners are likely

Roger J. Calantone and Yushan Sam Zhao
Motivation to rely on local partners to cope with pressures from government and trade barriers (Beamish 1993; Mjoen and Tallman 1997). Many U.S.–China joint ventures are founded to reduce risk associated with unfamiliar markets and overcome governmental restrictions (Contractor and Lorange 1988).

In China, local government plays an important role in joint venture activities (Beamish 1993; Brunner, Koh, and Lou 1992). Information about the local economy, politics, culture and business customs, consumer demands and tastes, the labor force, infrastructure, raw materials, and other factors required for the operation of joint ventures is likely to be delegated to the local partner (Makino and Delios 1996; Vanhonacker and Pan 1997). Foreign partners motivated by efficiency are likely to exercise less control over the joint venture because the resources important to them are held by the local partner. They need local partners, for example, to obtain favorable policies from local government (Makhija and Ganesh 1997; for reasoning on bargaining power, see Mjoen and Tallman 1997) and to provide access to resources. We propose the following:

\[ H_1: \text{The more the joint venture formation is motivated by efficiency, the less control the foreign partner will exercise (} \gamma_{21} < 0). \]

Competition. A joint venture motivated by competition is intended to reduce the market power of rivals or enhance the firm's own (Contractor and Lorange 1988; Kogut 1988). Foreign firms face pressure from other foreign competitors in the Chinese market. By forming a joint venture with local partners, foreign firms can blunt the penetration of other foreign firms into that market.

Foreign partners motivated by competition are likely to have relatively more control, because their purpose is to enhance market power (Baird et al. 1990). The factors critical for enhancing market power and reducing competition relate to
R&D and advanced management, which are the expertise of foreign firms. Foreign partners are more likely to have advanced technology or skills in administration, production, R&D, and marketing. Exercising control over these functions in joint ventures is an effective way to enhance competitive advantage.

\[ H_2: \text{The more the joint venture formation is motivated by competition, the more control the foreign partners will exercise} \ (\gamma_{22} > 0). \]

**Learning.** A joint venture with a learning objective is aimed at gaining knowledge of the foreign market and resources (Contractor and Lorange 1988). Makhija and Ganesh (1997) use a bargaining power perspective to study foreign entry and postulate that foreign partners are likely to acquire knowledge of local sites—including local culture, institutional characteristics, and other site-specific information—to ensure their success.

For many multinational enterprises, a joint venture in China is their first experience with a planned economy in a developing country. Local knowledge is likely to reside with the Chinese partner. It is difficult for foreign partners to acquire because it is specific to particular local partners (Lyles 1988; Makino and Delios 1996). Foreign partners motivated by learning are not likely to exercise much control over the joint venture, because they need to gain knowledge from the Chinese partner in the process of operation. Makino and Delios (1996) find that as the foreign firm's host country experience increases, the reliance on a local joint venture partner decreases. We propose the following:

\[ H_3: \text{The more the joint venture formation is motivated by learning, the less control the foreign partner will exercise} \ (\gamma_{23} < 0). \]

---

**Control and Performance**

A prominent theme in the literature is the relationship between joint venture control and performance (Ding 1997; Inkpen 1995; Killing 1983; Lee and Beamish 1995). Research in this area is briefly reviewed by Ding (1997). In general, studies have yielded mixed results. Killing (1983) suggests a positive relationship between control and performance by comparing dominant-partner and shared-partner control in joint ventures. He attributes this relationship to the low level of risk and conflict associated with a high level of control. On the basis of a sample of joint ventures in five developing Asian countries, Lecraw (1984) finds a positive, roughly linear association between control and performance, which is consistent with Killing's (1983) and Lee and Beamish's (1995) studies. Ding (1997) confirms this positive relationship in his most recent work on China.

Roger J. Calantone and Yushan Sam Zhao
Beamish (1985) finds a negative relationship between control by foreign partners and performance, but a negative relationship was not supported when he correlated local dominant-partner control with performance. Beamish suggests that the relationship may be moderated by the type of economy in which a joint venture operates. Lecraw (1984), however, believes that the host country’s economic condition is irrelevant to the control–performance relationship. Yan and Gray (1994) indicate that a shared management structure is better than a foreign-dominated structure, which shows a negative relationship between control and performance. Kogut (1988), however, detects no relationship between control and performance in his study of developed and developing countries.

Despite these conflicting results, Ding (1997) finds a positive influence of control on joint venture performance in China. The rationale is that Chinese partners are likely to have less expertise at improving efficiency in joint ventures compared with foreign partners. Performance is enhanced when foreign partners apply their advanced managerial skills and technology. Furthermore, operations can be greatly affected by an unstable political and economic environment (Brunner, Koh, and Lou 1992), and by controlling the major joint venture functions, foreign partners are likely to ensure their own profits (Beamish 1993) and high performance (Ding 1997). We propose the following:

\[ H_4: \text{Control and performance are positively related in joint ventures in China (} \beta_{12} > 0). \]

To test the model, we sent a mail survey to foreign executive managers of joint ventures in China. We focused on the foreign partner’s perspective to obtain homogeneous data, which is crucial for a cross-national comparison. We obtained a list of joint ventures from the statistics department of the Committee of Economy. From the list, we randomly selected 400 Japanese, 400 Korean, and 400 U.S. joint ventures. We contacted these firms to identify key informants (most of whom were chief executives) and survey their interest in participating. We then sent introductory letters and questionnaires. Three weeks after the initial mailing, we sent reminder cards and questionnaires to nonrespondents and used telephone calls and faxes when necessary. Anonymity was assured, and there is no reason to believe that the managers were under pressure to answer in a certain way. These procedures yielded 91 usable questionnaires from Sino–Japanese joint ventures, 112 from Sino–Korean joint ventures, and 109 from Sino–U.S. joint ventures. The average response rate was 26%.

A draft of the questionnaire in English was based on a review of the literature. We then conducted field interviews with managers of joint ventures in China, whom we asked to eval-

**Methodology**

**Data**

**Questionnaire Development and Pilot Study**

*Joint Ventures in China*
uate the face validity of the proposed model and operationalization of the constructs. We made modifications accordingly.

The questionnaire was pretested on six joint ventures. Managers were asked to assess the terminology, the clarity of instructions, and the response format. The instrument was modified and sent to another sample (n = 30) so that further problems with the measures and response format could be detected. No significant problems were revealed. The Japanese and Korean versions of the questionnaire were then prepared through a double-translation technique.

All measurements used in the questionnaire are based on the international business literature and field research. The measures reported in this study are those that survived a series of strict measurement unidimensionality and metric equivalence tests.

We measured performance by three items: return on investment, return on equity, and sales growth (Ding 1997; Luo and Chen 1997). We asked informants to indicate on a seven-point scale to what extent the joint venture met the expectations of foreign partners on these financial objectives.

Control is measured by six items. In this study, we concentrate on the scope and the extent of control. Four items assess the major functional areas of control. We asked respondents to evaluate on seven-point scales the degrees of influence exercised by the foreign partners over finance, administration/supervision, production planning, and pricing; these are crucial for joint ventures, according to the field research. Two items assess aspects of overall control: managerial majority control and veto rights over key decisions.

Three basic motivations for joint venture formation are examined: efficiency, competition, and learning. Efficiency is measured by four items that assess cost reduction, profit generation (Contractor and Lorange 1988), sufficient capital investment, and overcoming government restrictions. Competition is measured by three items: accessing Chinese markets, enhancing market power, and reducing competition (Contractor and Lorange 1988). Learning is measured by four items pertaining to the local partner's strategies and know-how related to local market, government relations, promotion skills, and human resources management (Hennart 1988; Kogut 1988).

Overall, analysis of the data followed procedures recommended by Gerbing and Anderson (1988). We used confirmatory factor analysis (CFA) to validate measures of constructs. We tested the proposed structural model after measurement unidimensionality and metric equivalence were satisfied. In
Table 1, we list the steps in our analysis. We examined the equivalence of the measure and the relationships among the constructs at a national and a multigroup level.

**Measure Validation.** The validity of measures was assessed by an initial CFA for each of the three groups, which is a more effective method for assessing unidimensionality than exploratory factor analysis, coefficient alpha, and item-to-total correlation. The purpose was to ensure unidimensionality of the multiple-item constructs and eliminate unreliable items (Bollen 1989). Items that loaded on multiple constructs or had low item-to-construct loadings were deleted from the model. The entire set of items was then subjected to multigroup CFA analysis, which is a more rigorous way to assess unidimensionality and cross-national equivalence of measures.

An unconstrained CFA was conducted that allowed factor structure to vary across samples. The results revealed a high level of consistency in model form and measurement across the three groups. Factor loading for each indicator to its respective construct was significant \( p < .01 \), and all loadings ranged from .42 to .94. Patterns of factor loadings across the three samples were similar, as can be seen in Table 2. The multigroup model exhibited a good fit. The ratio of \( \chi^2 \) to degrees of freedom (d.f.) was 1.49, the comparative fit index (CFI) was .92, and the incremental fit index (IFI) was .93.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Purpose</th>
<th>References</th>
</tr>
</thead>
</table>

Joint Ventures in China

Table 1. Steps in the Data Analysis
To test the equivalence of the measurement model across the Japanese, Korean, and U.S. samples, we conducted a constrained CFA. If the measurement properties are the same for the three samples, factor patterns and factor loadings should be equal. Therefore, we set the factor structure to be invariant in the constrained model. The results indicated identical factor patterns. Compared with the unconstrained model, the difference in $\chi^2$ value of 34.18 with d.f. of 30 suggests that

Table 2.
Results of CFA

<table>
<thead>
<tr>
<th>Constructs and Measurement Items&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Japanese Model (n = 91)</th>
<th>Korean Model (n = 112)</th>
<th>U.S. Model (n = 109)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance (Japan = .71, Korea = .76, United States = .89)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V1: Return on investment</td>
<td>.42</td>
<td>.69</td>
<td>.74</td>
</tr>
<tr>
<td>V2: Return on equity</td>
<td>.76</td>
<td>.82</td>
<td>.84</td>
</tr>
<tr>
<td>V3: Sales growth</td>
<td>.77</td>
<td>.70</td>
<td>.64</td>
</tr>
<tr>
<td>Control (Japan = .88, Korea = .76, United States = .82)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V4: Managerial majority control</td>
<td>.90</td>
<td>.91</td>
<td>.86</td>
</tr>
<tr>
<td>V5: Control of finance</td>
<td>.93</td>
<td>.94</td>
<td>.80</td>
</tr>
<tr>
<td>V6: Veto rights over key decisions</td>
<td>.81</td>
<td>.78</td>
<td>.87</td>
</tr>
<tr>
<td>V7: Control of administration/supervision</td>
<td>.74</td>
<td>.70</td>
<td>.74</td>
</tr>
<tr>
<td>V8: Superior power over production planning</td>
<td>.64</td>
<td>.58</td>
<td>.67</td>
</tr>
<tr>
<td>V9: Control of pricing</td>
<td>.88</td>
<td>.89</td>
<td>.88</td>
</tr>
<tr>
<td>Efficiency (Japan = .83; Korea = .76; United States = .72)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V10: Generate profits</td>
<td>.68</td>
<td>.66</td>
<td>.74</td>
</tr>
<tr>
<td>V11: Cost reduction</td>
<td>.56</td>
<td>.61</td>
<td>.52</td>
</tr>
<tr>
<td>V12: Obtain sufficient capital investment</td>
<td>.65</td>
<td>.66</td>
<td>.55</td>
</tr>
<tr>
<td>V13: Overcome government-imposed investment or trade barriers</td>
<td>.79</td>
<td>.79</td>
<td>.91</td>
</tr>
<tr>
<td>Competition (Japan = .78, Korea = .75, United States = .69)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V14: Reduce competition</td>
<td>.75</td>
<td>.71</td>
<td>.57</td>
</tr>
<tr>
<td>V15: Enhance market power</td>
<td>.64</td>
<td>.63</td>
<td>.58</td>
</tr>
<tr>
<td>V16: Better access to Chinese market</td>
<td>.75</td>
<td>.94</td>
<td>.84</td>
</tr>
<tr>
<td>Learning (Japan = .89, Korea = .70, United States = .74)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V17: Learning partner's know-how in promotion</td>
<td>.74</td>
<td>.82</td>
<td>.87</td>
</tr>
<tr>
<td>V18: Learning partner's know-how in government relationships</td>
<td>.83</td>
<td>.78</td>
<td>.80</td>
</tr>
<tr>
<td>V19: Learning partner's know-how in local market</td>
<td>.78</td>
<td>.77</td>
<td>.69</td>
</tr>
<tr>
<td>V20: Learning partner's know-how in human resource management</td>
<td>.56</td>
<td>.56</td>
<td>.63</td>
</tr>
</tbody>
</table>

Unconstrained model: $\chi^2 = 715.98$ (d.f. = 480), CFI = .92, IFI = .93.
Constrained model: $\chi^2 = 750.16$ (d.f. = 510), CFI = .92, IFI = .92.

<sup>a</sup>Cronbach's alphas are in parentheses.
<sup>b</sup>All loadings are significant at $p < .01$. 

Roger J. Calantone and Yushan Sam Zhao
factor structure was indifferent across samples. The constrained model also exhibited a good fit. The $\chi^2$ of the model was 750.16 with d.f. of 510, the ratio of $\chi^2$ to d.f. was 1.47, the CFI was .92, and the IFI was .92.

**Individual Structural Model.** When the measurement issues were satisfied, the structural model in Figure 1 was tested for each of the three groups. The Japanese model converged well. Three of the four paths were statistically significant, as shown in Table 3. The path from control to performance ($\beta_{12}$) was insignificant. The $\chi^2$ was 220.24 with d.f. of 163, the CFI was .93, and the IFI was .94. Tests showed that an additional path would not improve the model.

The Korean model converged well. As shown in Table 3, the four paths were statistically significant ($p < .05$ or better). All fit indices for the Korean model were at an acceptable level ($\chi^2 = 223.37$, d.f. = 163; CFI = .95; IFI = .95). Modification indexes showed that no additional path should be released.

The model for the U.S. sample converged well. All four paths were significant ($p < .1$ or better). All fit indices were in the acceptable range ($\chi^2 = 282.40$, d.f. = 163; CFI = .90; IFI = .90). This test indicated that no additional path would improve the model.

Examining the path coefficient across samples, we found significant differences. Path coefficients from efficiency to con-

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Japan</th>
<th>Korea</th>
<th>United States</th>
<th>Multi-group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Fit:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\chi^2$ (d.f. = 163)</td>
<td>220.24</td>
<td>223.37</td>
<td>282.40 (d.f. = 489)</td>
<td>726.01</td>
</tr>
<tr>
<td>CFI</td>
<td>.93</td>
<td>.95</td>
<td>.90</td>
<td>.92</td>
</tr>
<tr>
<td>IFI</td>
<td>.94</td>
<td>.95</td>
<td>.90</td>
<td>.92</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standardized path coefficient</th>
<th>$\gamma_{21}$: Efficiency-control</th>
<th>$\gamma_{22}$: Competition-control</th>
<th>$\gamma_{23}$: Learning-control</th>
<th>$\beta_{12}$: Control-performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\gamma_{21} &lt; 0$</td>
<td>$-26^*$</td>
<td>$-36^*$</td>
<td>$-46^*$</td>
<td></td>
</tr>
<tr>
<td>$p &lt; .05$</td>
<td>$(p &lt; .01)$</td>
<td>$(p &lt; .01)$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\gamma_{22} &gt; 0$</td>
<td>$0.29^*$</td>
<td>$-17$</td>
<td>$0.22^*$</td>
<td></td>
</tr>
<tr>
<td>$p &lt; .01$</td>
<td>$(p &lt; .05)$</td>
<td>$(p &lt; .05)$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\gamma_{23} &lt; 0$</td>
<td>$0.44$</td>
<td>$0.45$</td>
<td>$-0.18^*$</td>
<td></td>
</tr>
<tr>
<td>$p &lt; .01$</td>
<td>$(p &lt; .01)$</td>
<td>$(p &lt; .10)$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\beta_{12} &gt; 0$</td>
<td>$0.12$</td>
<td>$0.40^*$</td>
<td>$0.37^*$</td>
<td></td>
</tr>
<tr>
<td>(n.s.)</td>
<td>$(p &lt; .01)$</td>
<td>$(p &lt; .01)$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Hypotheses are supported.

Table 3. Results of Path Analysis of Individual Models
ontrol are -.26 for the Japanese model, -.36 for the Korean model, and -.46 for the U.S. model. Path coefficients from competition to control are .29, -.17, and .22, respectively. The path coefficients from learning to control are .44, .45, and -.18, respectively.

The path coefficient from control to performance is insignificant for the Japanese model but is statistically significant for the Korean and the U.S. models (β_{12} = .40 and .37, respectively).

**Multigroup Model.** Individual path models for Japanese, Korean, and U.S. joint ventures were different. We believe that the reason is differences in motivation and control of joint ventures. On the basis of CFA analysis and individual path model results, we performed a multigroup simultaneous path analysis to test for similarities and differences in the relationship among joint venture motivation, control, and performance across the three countries.

The objective of multigroup analysis was to determine whether the path coefficients were equal across the three groups. To test which paths were different, we used the multiple-group comparison method of LISREL. We first constrained one path to be equal across the three samples and then freely estimated this path. An insignificant difference in χ² between the constrained and unconstrained models with respect to the degrees of freedom would suggest an equal path coefficient across three groups. A significant difference would imply that at least one path coefficient is statistically different among the three. We then conducted a paired comparison to detect differences between any two countries. For example, for the efficiency–control path, the constrained model produced a χ² of 726.52 with 491 d.f., and the χ² of the unconstrained model was 726.01 with 489 d.f. The difference was .51 with 2 d.f. (not significant), which suggests that the path coefficient was equal across the three. For the learning–control path, the constrained model produced a χ² of 755.77 with 491 d.f. compared with 726.01 and 489 for the unconstrained model. The difference was 29.76 with 2 d.f. (significant at p < .01), which suggests that at least one country is different among the three. In the subsequent paired tests, we conducted three sets of two-group comparisons. These followed the same procedures as the three-group test. The results indicated that the learning–control path coefficient was greater in the Japanese and Korean samples than in the U.S. sample. This path coefficient was equal for the Japanese and Korean samples.

The results of the multigroup comparison are summarized in Table 4. The tests indicated that the path from efficiency to control was equal across the three groups, whereas the paths from competition to control, from learning to control, and from control to performance were different.
Table 4.
The Results of Multigroup Comparison

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Results of Multigroup Comparison</th>
<th>( \chi^2 ) Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \gamma_{21} ): Efficiency-control</td>
<td>Japan = Korea = United States</td>
<td>.51 (n.s.)</td>
</tr>
<tr>
<td>( \gamma_{22} ): Competition-control</td>
<td>Japan = United States</td>
<td>.54 (n.s.)</td>
</tr>
<tr>
<td></td>
<td>Japan &gt; Korea</td>
<td>17.31 (p &lt; .01)</td>
</tr>
<tr>
<td></td>
<td>United States &gt; Korea</td>
<td>17.55 (p &lt; .01)</td>
</tr>
<tr>
<td>( \gamma_{23} ): Learning-control</td>
<td>Japan &gt; United States</td>
<td>25.31 (p &lt; .01)</td>
</tr>
<tr>
<td></td>
<td>Korea &gt; United States</td>
<td>24.99 (p &lt; .01)</td>
</tr>
<tr>
<td></td>
<td>Korea = Japan</td>
<td>.88 (n.s.)</td>
</tr>
<tr>
<td>( \beta_{12} ): Control-performance</td>
<td>Japan &lt; United States</td>
<td>5.37 (p &lt; .01)</td>
</tr>
<tr>
<td></td>
<td>Japan &lt; Korea</td>
<td>5.69 (p &lt; .01)</td>
</tr>
<tr>
<td></td>
<td>Korea = United States</td>
<td>.43 (n.s.)</td>
</tr>
</tbody>
</table>

Notes: n.s. = not significant.

The results of the single-model tests and multigroup model comparison are given in Tables 3 and 4. We base our discussions about the general hypotheses (H1-H4) on the results of individual path models. The discussion of cross-country comparisons will be based on the multigroup model results.

According to H1, the more the joint venture is motivated by efficiency, the less control the foreign partner will exercise \((\gamma_{21} < 0)\). Single-model results show that \( \gamma_{21} = -.26 (p < .05) \) for the Japanese model, \( \gamma_{21} = -.36 (p < .01) \) for the Korean model, and \( \gamma_{21} = -.46 (p < .01) \) for the U.S. model. All the models support H1, which confirms our expectation that joint ventures are highly influenced by an unstable environment and frequent government interference under the planned system in China. Foreign firms usually rely on local partners to reduce risk or overcome governmental restrictions. Boisot and Child (1990) find that many foreign firms have a minority equity position in joint ventures in China, which is consistent with studies in other developing countries. Beamish (1993) has shown that foreign partners can achieve political advantage in China and tax advantages in both China and their home countries by taking a minority equity position. These firms are likely to be motivated by efficiency (reduce risk, take advantage of government policy, and generate profits). Minority equity implies that they sacrifice some control over joint ventures.

H2 states that the more the joint venture formation is motivated by competition, the more control the foreign partner will exercise \((\gamma_{22} < 0)\). In the Japanese model, \( \gamma_{22} = .29 (p < .01) \); in the U.S. model, \( \gamma_{22} = .22 (p < .05) \); and in the Korean model, \( \gamma_{22} = -.17 (p < .05) \). The Japanese and U.S. models support H2, but the Korean model does not.

It is noteworthy that Japanese and U.S. partners are likely to exercise more control if they want to enhance competitiveness. They are from highly developed countries with the

**Joint Ventures in China**
most advanced technology in all the functions of joint venture operation. They are likely to apply these skills and resources when competing with other foreign firms in the Chinese market, which implies more control over the major functions. For Korean partners, cooperating with or relying on local partners is the best way to compete with other firms.

According to H3, the more the joint venture formation is motivated by learning, the less control the foreign partner will exercise ($\gamma_{23} < 0$). In the U.S. model, $\gamma_{23} = -0.18$ ($p < .1$), which supports H3. In the Japanese model, $\gamma_{23} = 0.44$ ($p < .01$), and in the Korean model, $\gamma_{23} = 0.45$ ($p < .01$). Both these models contradict H3. We believe this is because U.S. partners tend to adopt a formal management style in joint ventures. Japanese and Korean partners have more knowledge of the Chinese market and culture, so learning is not their major concern. They are more likely to conduct effective learning by exercising control over joint ventures.

H4 states that control and performance are positively related ($\beta_{12} > 0$). In the Japanese model, $\beta_{12}$ is not significant. In the Korean model, $\beta_{12} = 0.40$ ($p < .01$), and in the U.S. model, $\beta_{12} = 0.37$ ($p < .01$). The Japanese model does not support H4, but both the Korean and the U.S. models do.

The results generally confirm previous research on U.S. joint ventures in developing countries. Although Kogut (1988) finds no correlation between control and performance in his examination of developed countries, Austin (1990), Shenkar (1990), Teagarden (1990), Lee and Beamish (1995), and Ding (1997) find a significant, positive relationship in their studies of developing countries. The results from our U.S. and Korean samples suggest that foreign partners tend to have high performance if they can have more control on joint ventures in an unstable market such as China. Beamish (1993) points out that Chinese partners lack the technology and administrative skills for joint venture management. Performance is likely to be enhanced if foreign partners can control the major functional areas by applying their advanced technology.

Coordination between partners entails significant costs that make many joint ventures transitional rather than stable arrangements. Reducing the risks associated with coordination can minimize transaction costs and stabilize joint ventures. Therefore, joint ventures with more single-partner control should perform better for foreign partners than less controlled joint ventures (Inkpen 1995).

Multigroup tests revealed significant differences among the three countries (refer to Table 4). A multigroup comparison test indicated that the path coefficient from efficiency to control ($\gamma_{21}$) was equal across the three samples (Japan = Korea =
Multigroup tests show that the path coefficient from competition to control ($\gamma_{22}$) is not equal across the three countries (Japan = United States, Japan and United States > Korea). In joint ventures, U.S. firms often transfer technology if they are motivated to gain market power in China, as do Japanese partners. When motivated by competition, foreign partners are more likely to exercise control over joint ventures to reduce risk, minimize conflict, gain market power, and improve competitiveness by applying their advanced production and management technology. Korean partners, however, are usually closer to the same level as Chinese partners in terms of skills and technology, so Korean firms are likely to cooperate with or rely on local partners if they want to enhance market power and competitiveness. This is consistent with the results of our field research, which revealed that Korean partners are less likely to be motivated to gain market power, and this may explain the insignificant relationship between competition and control for this group.

Multigroup comparison reveals that the path coefficient from learning to control ($\gamma_{23}$) is not equal across samples (Japanese = Korean, Japanese and Korean > U.S.). There is a positive relationship between learning and control for Japanese and Korean partners but a negative one for the U.S. sample. We believe this is because U.S. partners adopt a formal management style in joint ventures in unfamiliar markets. Because Japanese and Korean partners are more familiar with the Chinese market and culture, they can institute tighter and deeper control and still learn more effectively than U.S. firms. For U.S. partners, acquiring local knowledge is the most important issue when first venturing into the Chinese market. They tend to observe the local partner during the training process and must sacrifice some control. This is consistent with Salk's (1992) finding that in shared-management joint ventures, the strategic rationale of transferring knowledge and skills is stronger than in partner-dominated joint ventures.

The multigroup comparison shows that the path coefficient from control to performance ($\beta_{12}$) is insignificant in the Japan-
ese model, but $\beta_{12}$ is positively significant in the Korean and U.S. models (Korea = United States, Korea and United States > Japan). The Korean and U.S. results follow the normal logic of the control–performance relationship of joint ventures in developing countries. Control is important to Korean and U.S. partners, which are likely to exercise it if they want to ensure their profits. The Japanese results are consistent with the mixed conclusions reached in previous studies.

The relationship between control and performance is far more complex than it appears. Its insignificance in the Japanese sample suggests that more research emphasis should be given to this relationship. Previous work indicates that Japanese firms are effective at minimizing control mechanisms in their interorganizational arrangements (Beamish, Delios, and Lecraw 1997; Inkpen 1995). It is also possible that our measures failed to assess some aspects of Japanese control in joint ventures. An interesting research question would be to explore the dimensions of control by Japanese partners in joint ventures.

The results have clear implications for international managers. First, foreign firms that want to form joint ventures should design control mechanisms that are based on their strategic intentions or motivations. From a foreign firm’s perspective, more control over joint ventures in China appears to be beneficial, but the ability to exert control is influenced by the firm’s strategic intentions. These reflect the importance of resources, including the firm’s ability to access local resources, knowledge of the local culture and market, and innovation and management capability. On the one hand, foreign partners that need local resources and knowledge must sacrifice some control. On the other hand, as the Japanese and Korean results indicate, foreign partners familiar with the local environment can exert more control and still obtain local knowledge. Therefore, foreign managers should assess their familiarity with the local culture and market before they design control mechanisms. It is expected that foreign partners can adjust control mechanisms as they acquire more knowledge.

Second, foreign partners can apply more advanced skills and technology in R&D, production, and management to enhance their competitiveness by exerting more control over these main functions in joint ventures. The Korean results show that the extent of foreign control is limited by the foreign partner’s capability in these areas. Lacking sophisticated skills and technology in comparison with local partners, they must find other means to enhance their market power.

Third, the relationship between control and performance is complex. The U.S. and Korean results support a positive relationship, but the Japanese results suggest that giving up a
certain amount of control can still be beneficial. Joint ventures are formed by two parties with diverse objectives, different views about sharing power, differences in management styles, and so on. As Ding (1997) and Makhija and Ganesh (1997) recommend, the partners need to negotiate to structure a relationship in which both believe that collaboration is beneficial. Most conflicts arise over the control of functional areas, and mutual trust and commitment to the relationship play a vital role in dealing with these disagreements. Joint ventures are formed because firms are mutually dependent. Both partners must develop a long-term orientation in order to enhance mutual benefits.

Our study contributes to the joint venture literature in several ways. First, it points to the central role of control in joint ventures in China. Control is important for both implementing strategic objectives and achieving good performance. Foreign partners should assess their intended level of control in terms of their strategic intentions. For example, firms with advanced skills and resources can exercise more control over major functional areas to improve their market power. For firms venturing into an unfamiliar market, obtaining knowledge of the local environment should be a major concern.

Second, the comparison of the three groups of foreign partners is a valuable contribution. In general, the U.S. model supports the hypotheses, which are drawn from the literature. The anomalies found in the Japanese and Korean models indicate that current scholarship, which is built on the studies of Western developed countries, may not fully explain joint ventures in Asia. In particular, research on Korean firms as foreign partners is rare. In this newly industrialized country, firms may have their own strategies and styles for competing with highly developed countries in the global market. The differences among the Japanese, Korean, and U.S. models imply that more attention should be paid to investigating other factors that influence joint ventures. Along that line, our study systematically examines three types of motivation (efficiency, competition, and learning). Foreign partners motivated by efficiency tend to apply the same strategy, which is consistent with other studies of developing countries. Firms motivated by competition and learning are likely to use diverse strategies in applying their superior skills and resources. The finding of an insignificant relationship between control and performance in the Japanese model suggests the existence of other forms of control, which is an area for further research.

Third, we apply structural equation modeling to joint venture research. Multigroup comparison performs fairly well and enables us to explore systematically the similarities and differences among countries.

**CONCLUSIONS**
Finally, we provide insights into joint ventures in a planned economy. Most of the local partners are state-owned enterprises. They are controlled by the government, and this motivation differs from that of privately owned firms. Furthermore, many joint ventures in China are formed under government pressure. Also, local governments influence the whole process of joint venture operation.

The study has several limitations. Our focus on the foreign partner's perspective could lead to bias in the results, and further research should incorporate the opinions of both parties. We did not include other antecedents of control in the model, such as dependence and the contribution of partner firms; future studies should explore the influence of other variables on control. Also, as one reviewer indicated, the size of the investing firms may influence the motivations and control of joint ventures, and this variable should be controlled in future work. Finally, we use subjective measures of financial returns to measure joint venture performance. As many studies point out, however, other measures should be incorporated, such as the degree of satisfaction with or the survival of joint ventures.

Austin, James E. (1990), Managing in Developing Countries. New York: The Free Press.


Copyright of Journal of International Marketing is the property of American Marketing Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.