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by

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Abstract

This study examines North American firms that have international joint venture (IJV) relationships in China and Chinese firms who have IJV relationships in North America. Data was gathered from the North American partner (n=50) and from the Chinese partner (n=57) to test several hypotheses regarding the reliability and comparability of various general satisfaction measures and specific indicators of IJV performance.The findings of this comparative study provide confirmatory evidence for the importance of several indicators of IJV performance for the partners of IJVs from a developed and developing country perspective and the criteria that Sino-North American managers use to evaluate IJV performance. Another contribution of the findings of this study is that it provides insights from the assessment of multiple industry and product perspectives for the North American and Chinese partners as to the extent that the IJV achieved its strategic objectives as a measure of IJV performance.

Key words: international joint ventures; strategic alliances

INTRODUCTION

Many researchers [Franko 1971; Harrigan 1985; Beamish and Banks 1987; Hennart 1989; Agarwal and Ramaswami, 1992; Kim and Hwang 1992; Ohmae 1993] have found that the use of international joint ventures (IJVs) as a vehicle to enter international markets has exploded in recent years.[1] Research by Luo [1995] and Beamish [1993] shows that this trend is particularly true of the People's Republic of China (PRC) which is one of the fastest growing developing markets in the world with a population of over one billion and undersupplied markets. Since adopting the "Open Door"policy, the PRC has emphasized foreign investment in joint ventures as a means for PRC organizations to gain access to modern management techniques, advanced technology, and foreign capital without becoming dependent on outside sources [Beamish 1993]. Data compiled by Chinese government officials shows that the PRC approved 27,890 joint ventures worth $40 billion in 1994, which represented almost 50% of the total investment commitments in the PRC for that year.[2]

Recent research [Beamish 1985; Pearson 1991; Pomfret 1991; Osland & Cavusgil 1996] on this phenomenon in the PRC finds that these IJVs offer foreign firms a strategic means to gain access to China's domestic market, reduce costs, acquire legitimacy, learn about the Chinese environment, and gain power *vis-a-vis* their competitors [Osland & Cavusgil 1996; Beamish 1993; Child 1991; Yan & Gray 1994; Daniels, Krug & Nigh 1985; Davidson 1987; Pearson 1991; Pomfret 1991]. Nonetheless, as these IJVs have grown in the PRC there has been considerable concern regarding performance measures and the criteria established by the partners of the IJVs

to evaluate performance [Luo 1995; Osland and Cavusgil 1996]. In this regard, Anderson [1990] and Parkhe [1993a] argue: "International joint ventures research is at the pre-paradigmatic stage of theory development" [p. 227]. Although there has been a growing body of theoretical research that addresses the performance of IJVs, "the core concepts and their relationships are still not well understood, particularly the issue of IJV performance" [Osland and Cavusgil 1996: 107]. Most prior researchers have examined the issue of IJV performance in developing countries from the viewpoint of the developed country [Geringer and Hebert 1989; 1991; Lyles and Baird 1994]. One purpose of this study is to build on the research of IJV performance that addresses the dual perspectives of the developed and developing country partners [Beamish, 1984, 1985, 1988; Tallman & Shenkar, 1990, 1994;Yan and Gray 1994; Luo 1995].

A second purpose of this research is to further examine relationships between North American and Chinese partner's subjective and objective measurement criteria for performance in IJVs through the examination of these research questions: What are the perceived ratings of subjective and objective measurement criteria of North American partner's perspective of the IJV's performance? What are the perceived ratings of the subjective and objective measurement criteria of the Chinese partner's assessment of the IJV's performance? How do these perceived ratings of subjective and objective criteria assessments for performance compare to actual performance of the Sino-North American IJVs? Few studies have empirically tested the match between objective and subjective measurement assessments for IJV performance from the perspective of the North American and Chinese managers and the criteria that these managers use for evaluating performance [Osland and Cavusgil, 1996; Luo 1995; Gray and Yan, 1991; Beamish 1985, 1988;

Campbell 1986]. Figure 1 illustrates the basic framework for this study.

INSERT FIGURE 1 HERE

With the rapid growth of foreign investment in China, understanding the similarities and differences in perspectives on IJV performance is an issue of increasing importance. This study breaks new ground in this respect and is designed to extend IJV research and fill some of the gaps in the literature by replicating and extending Geringer and Hebert's [1991] test of objective and subjective measures of IJV performance through the examination of Sino-North American partner's perspectives on IJV performance. First, this study begins with a review of some of the prior literature on IJV performance and hypotheses development. Second, a discussion of methodology, sampling frame, questionnaire development, and data collection follows. Third, a report of the results of the analysis of the data is provided. Finally, the article concludes with a discussion of findings and conclusions.

RESEARCH ON IJV PERFORMANCE AND HYPOTHESES DEVELOPMENT

A review of the literature on IJVs shows that IJV performance is a controversial area of research that has been raised in previous work [Harrigan 1988; Killing 1983, 1988; Geringer and Hebert 1989; Koh and Venkatraman 1991]. As evidenced by Geringer and Hebert [1991], "prior research evidences significant differences in the operationalization of IJV performance" [p. 250]. In addition, only a few researchers have investigated the relationships between certain variables and performance [Osland and Cavusgil 1996]. Most of these studies of IJV performance have used objective measurement criteria. These objective measurement criteria normally have included

financial indicators (e.g. ROI, ROE, ROS), market share, IJV survival, and IJV duration [Geringer and Herbert 1989, 1991; Harrigan 1988; Kogut 1988; Tomlinson 1970]. Research by Seth [1990] finds that the key limitation of these studies is that a single measure of IJV performance is too narrow and open to many criticisms.

Responding to this concern, in their research Venatraman and Ramanujam [1986] argue that "even with the domain of financial performance, indicators such as sales growth, net income growth, and ROI should not be combined to form one composite dimension, because they reflect distinct dimensions" [p. 807]. These researchers argue further that the researcher should be able to "test the dimensionality issue of their conceptualization of business performance" [p. 807]. Osland and Cavusgil [1996] conclude that: " [t]he use of subjective measure reflects difficulties in obtaining "objective" data, and . . .that measures such as profits are not directly comparable across different industries and stages in IJV life cycles" [p. 107]. Furthermore, the degree to which IJVs have accomplished short and long-term objectives is not considered when the research framework uses only financial and objective measures [Killing 1983; Artisien and Buckley 1984; Blodgett 1987].

In the PRC, studies of international joint venture performance have employed a variety of measures. Beamish [1988] used financial and objective measures of performance and reported results that showed a strong correlation between objective financial performance measures. In his review of other studies of IJV performance in the PRC, Campbell [1986] observed that although conventional literature treats government as an amorphous aspect of the political-legal

environment, it has both a constraining and an enabling affect on IJV structure, strategy, and performance. As an example, the PRC can place limits on ownership shares and in this regard governments can cooperate with IJVs and foreign parent companies by creating partners for foreign companies, acting as major customers, and improving financial performance by lowering taxes [Osland and Cavusgil, 1996]. On the other hand, using traditional accounting methods to assess IJV performance assumes that a market economy context may be applicable in the PRC and this is a deficiency [Luo 1995; Adler, Campbell and Laurent 1989].

In an effort to negate some of the arguments against the use of objective measures of performance in IJVs, Beamish [1984], Killing [1983], Schaan [1983, 1988], Geringer and Hebert [1991] and Yan and Gray [1994] have used a single-item perceptual measure of a parent's satisfaction to evaluate IJV performance. These researchers contend that a major benefit of this approach is that it provides some framework for determining the extent to which the performance objectives of the firms have been realized because partners often differ in their assessment of IJV performance criteria. Two other benefits of this approach, argue these researchers, is that methods such as the use of archival data and secondary data is limited and points the researcher to the use of objective measures. Another concern is that few authors with the exception of Geringer and Hebert [1991] and Dess and Robinson [1984] have fully tested the effectiveness of using objective and subjective measures of performance to assess IJV performance. In addition, these studies have been from a developed country viewpoint. The focus of this study is to test these objective and subjective measures of performance on Sino-North American IJVs from a developed-developing country perspective. The first two hypotheses are as follows:

H1: There will be a significant positive correlation between reports of objective performance and general measures of satisfaction for North American parents of IJVs in China.

H2: There will be a significant positive correlation between reports of objective performance and general measures of satisfaction for Chinese parents of IJVs in China.

Gomes-Casseres' [1987] and Blodgett's [1992] research on IJV performance shows that a considerable amount of work has been done that measures performance at the level of the venture. In these studies, the criteria for performance, termination or stability in membership is not an accurate assessment of the IJV partners' satisfaction with the extent that the venture has "achieved its strategic objectives as a measure of performance" [Yan and Gray 1994: 1482]. However, Kogut's [1991] study found that for some ventures termination is an indicator for success. Other researchers, Schann [1983] and Beamish [1984] proposed collecting data from each parent to assess satisfaction with an IJV. These direct assessments would overcome the limitations associated with the use of termination/continuity as a measure.

However, Geringer and Hebert [1991] found that "while data collection from more than one respondent may enhance a measure's reliability, there is a myriad of logistical and cost barriers complicating this proposed solution" [p. 252]. Key amongst them, according to these researchers, is the concern with accessibility. Furthermore, data from one of the parents, "or even from the IJV general manager (IJVGM) may be readily accessible to researchers, but seldom will each of an IJV's partners willingly provide data or make the requested information available to researchers" [p. 252]. Geringer and Hebert [1991] concluded that the "key research issue is

whether data collected from one parent and/or the IJVGM represents a reliable measure of IJV performance and even a reliable estimate of the other partner's perception of this performance" [p.252]. These researchers tested for difference of perceptions in dissimilar cultures and found significant differences between the responses of parents from within and without North America.

Geringer and Hebert's theory and data suggest that perceptions of performance may be impacted by cultural factors. Hofstede and Bond [1988] define culture as "the collective programming of the mind that distinguishes the members of one category of people from those of another" [p. 6]. Several authors have shown or hypothesized that in the global business environment culture has an impact on the values and perceptions of managers [Ricks and Martinez, 1990]. For example, a study of managerial values that compared managers from the U.S., Hong Kong, and the PRC [Ralston, Gustafson, Cheung, and Terpstra, 1993] found that "understanding managerial values is critical in a global economy, since the business philosophy of a given country depends, to a large degree, on the values of its managers" [p. 270]. Specifically, differences in the cultural perspectives and the objectives of the parents in Sino-North American IJVs could lead to problems with management and coordination [Adler and Graham, 1989].

In research by Dess and Robinson [1984], there was a high level of agreement among multiple respondents in their assessment of their organization's performance. Consequently, it might be anticipated that the evaluation of the IJV's performance by an organization's members, for example, parent firms in North America and China, would be consistent. Since IJVs are organizations in which ownership and decision making are shared, one can surmise that all

elements of the cooperative venture will manifest some level of awareness regarding the other elements' satisfaction and assessment of IJV performance [Geringer and Hebert, 1991.] One might anticipate that a North American partner's evaluation of the importance of indicators of IJV performance will not differ from the Chinese partner's evaluation of expectations for performance. This assumption, though, requires acceptance of the belief that organizational influences in a country where joint venturing is a relatively new phenomena are similar to organizational influences in a country where joint venturing is commonplace. In this sample, we are testing parents in different organizations; we expect no organizational influences. Therefore, we hypothesize:

H3: There will be a difference in rating of performance expectations by the North American parent of IJVs and Chinese parents of IJVs in China.

H4: There will be a difference in assessments of performance outcomes by the North American parents of IJVs and Chinese parents of IJVs in China.

H5A: There will be a significant positive correlation between initial expectations of performance and performance outcomes for the North American parents of IJVs in China.

H5B: There will be a significant positive correlation between initial expectations of IJV performance and performance outcomes for the Chinese parents of IJVs in China.

METHODS

Sample Selection

This study examines North American firms that have IJV relations in China and Chinese firms who have IJV relationships in North America. Outside sources that were used to identify these

IJVs included: *Mergers and Acquisitions*; the *Wall Street Journal Index; Yearbook on Corporate Mergers, Joint Ventures and Corporate Policy; Predicasts' Funk & Scott Index of Corporate Change*; U.S. Commerce Department's *Foreign Direct Investment in the United States*. These sources were a representative sampling frame of Sino-North American IJVs that the researchers had targeted to examine and selection bias was assumed to be at a minimum. Two-hundred thirty North American firms with ongoing joint venture relationships in China were chosen for this study.

Questionnaire development

After of a review of questionnaires utilized in prior research on IJVs, a mail survey questionnaire that was developed by Geringer and Hebert [1991] was adopted and extended for use in this study. The questionnaire contained three open-ended questions (See Appendix I). The first question asked respondents how satisfied the North American/Chinese partner had been with four general *satisfaction* measures of IJV performance using a 5-point Likert scale (where 1 is "very dissatisfied" and 5 is "very satisfied"). The second question asked respondents which of the below-mentioned *specific indicators of IJV performance* (11 scales of items) for the North American/Chinese Partners are the most important indicators of performance of the IJV using a 5-point Likert scale (where 1 is "not as important" and 5 is "very important") to evaluate performance on each dimension. The third question asked respondents to rate the IJV's actual performance (using an 11-item scale of specific indicators of IJV performance) versus initial expectations when the venture was formed using a 5-point Likert scale (where 1 represents "below initial expectations" and 5 represents "above initial expectations") to evaluate performance

on each dimension.[3]

Data Collection

A three part methodological approach was utilized to collect data from both the North American and Chinese firms over a period of 11 months, January 1996 through November 1996 [Parkhe 1993a]. In the first phase, questionnaires were sent to a listing of 230 North American firms who have IJVs in the PRC. A cover letter explaining the research project and encouraging participation and a return envelope with postage were mailed to the senior official of the North American IJV. The cover letter and questionnaire instructions asked the general managers of the North American IJV to report on the relationship with their Chinese partner. These cover letters and questionnaire instructions also stressed that the questionnaire be completed with no collaboration between the partners and returned to the researchers independently. Respondents were also assured of the confidentiality of their responses.

After one week a postcard follow-up was sent to the general manager of the North American IJV. This postcard follow-up was preprinted with an individually typed name and address on one side and an individually applied signature on the other. The note on this postcard was written as a thank you for those who had already returned their questionnaire and as a reminder to those who had not. A second follow-up was mailed to nonrespondents exactly three weeks after the original mailout. This cover letter informed those members of the sample population that their questionnaire had not been received and included a restatement of the basic appeals from the original cover letter. Fifty of the 230 North American firms returned usable surveys, for a

response rate of 21.7 percent. This rate is roughly comparable to other studies of IJV performance with similar objectives [Geringer and Hebert 1991; Luo 1995]. The average age of the North American IJVs was six years. Several characteristics (country and sales volume of parent firm of the IJV, and type of products of responding firms) were examined to provide some indication of response bias (See Appendixes II & III.). Analysis showed no significant difference in the sample. The lack of significant difference in this comparison offered us evidence that this study may not suffer from nonresponse bias [Armstrong and Overton 1977].

In the second phase, to further validate the responses provided by the general managers of the North American IJVs to the mail survey questionnaire, each of the general managers of the IJV was contacted to arrange a semi-structured phone interview conducted by trained interviewers. During the interview the general managers of the North American IJVs were asked open-ended questions to provide an opportunity for clarification of questions or elaboration of answers provided on the mail survey about their opinions and other events surrounding the performance of the IJV. In the third phase, secondary documentary evidence that was examined included relevant company records and documents, including in particular the IJV proposal, formal studies, and progress reports regarding the IJV.

In the PRC, as with the collection of data from general managers of the North American IJVs, a similar three phase methodology was used to collect data for this research project. First in the PRC, the concept of mail survey questionnaires is a new one and Chinese officials are very suspicious about providing information on joint venture operations and the reliability of data has

been a problem in previous research on business and management in China [Shenkar and von Glinow, 1994]. To overcome these concerns the authors relied on personal business contacts in China to assist with the data gathering process. Second, to provide some basis for comparability to the responses from North American general managers to the mail survey, in-depth structured interviews were arranged with 57 general managers of Sino-North American IJVs in Beijing, Nanjing, and Shanghai who participated in the study. The average age of these IJVs was five years. Before the interview the general managers were asked to complete the same questionnaire, (translated into Mandarin by two independent translators), as the North American general managers completed. During the interview, lasting from an hour and a half to two hours (and in some instances, informants were interviewed more than once), Chinese IJV general managers were asked to provide trained interviewers with answers to questions regarding their criteria for performance of the IJV compared to the actual performance outcomes of the IJV. Third, after the interview was completed, the IJV data collected was translated back into English by an independent translator and compared to secondary sources as was done with the North American sample.

Data Analysis

The data were analyzed in three steps. First the reliability of the partner's satisfactions with four general satisfaction measures of IJV performance was assessed. Coefficient alphas were computed across the four general satisfaction measures. This resulted in the following coefficient alphas for the four measures: the IJV in general [North American (.79); Chinese (.76)]; the IJV performance [North American (.80); Chinese (.81)]; the IJV general manager's performance

[North American (.88); Chinese (.77); and "the relationship between the partners of the IJV" [North American (.87); Chinese (.82)]. Both the North American sample and the Chinese sample met the recommended .7 reliability used roughly as a cutoff. [Nunnally 1978].

Second, Pearson correlation coefficients were computed. This nonparametric statistic appeared to be the most appropriate alternative considering the nature of the four general satisfaction measures and the 11 specific indicators of IJV performance used (see Appendix I) and the size of the samples. It should be noted that Bobko [1995] and Trattner and O'Leary [1980] argue that with small sample sizes it is very difficult to test for the significance of the correlation coefficients.[4] To further assess reliability of results Kendall tau-B and Spearman rank-order correlation coefficients were also computed, and results consistent with the Pearson-based analyses were obtained. Third, in all analyses, missing values were excluded on an analysis-by-analysis basis. Finally, a *t* test was used to test for the differences in the means of the North American and the Chinese samples.

RESULTS

Results for all hypotheses are reported in Tables 1, 2, 3, and 4. The first two hypotheses posit that there would be a significant positive correlation between reports of objective performance and general measures of satisfaction for the North American parents of IJVs in China. As reported in Tables 1 and 2, the four general satisfaction measures ("IJV in general," "IJV performance," "general manager's performance, and "relationships between partners") correlated very strongly with several of the 11 of the specific indicators of IJV performance for the North American and

Chinese partners thereby providing support for hypotheses 1 and 2.

First, for the general satisfaction measure of the *performance of the IJV in general*, for the North American partner, of the 11 specific indicators of IJV performance, three measures: "technology/engineering of the product," "raw materials and components," and "distribution channels" correlations received strong empirical support at the $p > .05$ level. Seven other measures: "level of sales," "market share,""profitability," "research and development," "process technology," "manufacturing," and "marketing" correlations were supported at the $p > .01$ level. In contrast, for the Chinese partner, on the specific indicator of the "performance of the IJV in general," of the 11 specific indicators of IJV performance, two measures: "level of sales" and "distribution channels" correlations are significant at the $p > .05$ levels. One other measure: "profitability" correlation was supported at the $p > .01$ level.

INSERT TABLES 1 &2 HERE

Second, on the general satisfaction measure of *IJV performance* for the North American partner, two of the 11 measures: "research and development" and "marketing" correlations were significant at the $p > .05$ levels. Six other measures: "level of sales," "market share," "profitability," "technology/engineering of the product," "process engineering," and "manufacturing correlations are significant $p > .01$ levels. In contrast, for the Chinese partner on the general satisfaction measure of "IJV performance" five of the 11 specific indicators: "level of sales," "marketing share," "profitability," "costs," and "marketing" correlations were significant at the $p > .01$ levels. Two other specific indicators: "technology/engineering of the product,"

and "manufacturing" received strong support at the $p > .05$ levels.

Third, on the general satisfaction measure of *the general manager's performance* for the North American partner, of the 11 specific indicators of IJV performance, six measures: "level of sales," "market share," "profitability," "research and development," "manufacturing," and "marketing"correlations were supported at the $p > .05$ levels. Two other measures: "technology/ engineering of the product" and "distribution channels" are significant at the $p > .01$ level. In contrast, for the Chinese partner, of the 11 specific indicators of IJV performance, none of these measures are significantly correlated.

Fourth, on the general satisfaction measure of *the relationship between the partners*, for the North American partners, of the 11 measures of "IJV performance," six measures: "market share," "research and development," "technology/engineering of the product," "process technology," "marketing," and "distribution channels" correlations are significant at $p > .05$ levels. Four other measures: "level of sales," "profitability," "manufacturing." and "raw material and components" correlations were significant at the $p > .01$ levels. In contrast, for the Chinese partner, of the 11 specific indicators of IJV performance, one measure: "manufacturing" correlation is significant at the $p > .05$ level.

Fifth, hypothesis 3 predicts that there will be a difference in rating of performance expectations by the North American parent of IJVs and Chinese parents of IJVs in China. The fourth hypothesis predicts that there will be a difference in the assessment of IJV performance outcomes by the

by the North American partner and the Chinese partner. The results for hypotheses 3 and 4, reported in Table 3, indicates that these hypotheses are supported. In this table a *t* test was employed to examine the actual IJV mean differences for *indicators of IJV performance* for the North American and Chinese partners for the 11 specific indicators of IJV performance. For the Chinese partner, three measures: "level of sales" ($t = -2.83, p < .01$), "cost" ($t = -1.94, p > .10$), and "research and development" ($t = -5.25$, $p > .01$) mean differences were significantly greater than the means for the North American partner. The examination of the *t* test results of the mean differences in the *11 objective measures of IJV performance* for the Chinese partner found that two measures: "manufacturing" ($t = -1.74, p > .10$) and "raw materials and components" ($t = -2.45, p > .05$) mean differences are significantly different than those for the North American partner.

INSERT TABLE 3 HERE

Sixth, of the 11 specific indicators of IJV performance, for the North American partner, five measures: "market share" ($p > .01$), "research and development" ($p > .01$), "technology/ engineering of the product" ($p > .05$), "process technology" ($p > .05$), and "raw materials and components" ($p > .05$) correlations were strongly significant. In contrast, for the Chinese partner, of the 11 specific indicators of IJV performance, two measures: "process technology" and "raw materials and components" correlations were significant at the $p > .05$ levels. Two other measures: "level of sales" and "manufacturing" correlations are significant at the $p > .01$ levels.

Finally, in summary, hypotheses 1 and 2 examined four general satisfaction measures and their

relationship to 11 specific indicators of IJV performance on the North American and Chinese sample populations and received empirical support. Additional support was found for hypotheses 3 and 4 that investigated the relationship between expectations and outcomes of IJV performance for the two samples. Hypotheses 5A and 5B posit that there will be a significant positive correlation between expectations of performance and performance outcomes for the North American and Chinese partners of IJVs in China. As reported in Table 4, hypotheses 5A and 5B are supported for the North American and Chinese partners.

INSERT TABLE 4 HERE

DISCUSSION AND CONCLUSIONS

This study builds and extends the stream of research [Geringer and Hebert 1989; Lyles and Baird 1994; Tallman & Shenkar, 1990, 1994; Yan & Gray 1994; Luo 1995] on IJV performance from a developed and developing country context. Additionally, it replicates some of the key findings of Geringer and Hebert's [1991] study of the use of objective and subjective measures to examine IJV performance. Put another way, the findings of this research illuminate the applicability of applying performance measures developed in a developed country to a developing country business environment [Boyacigiller and Adler, 1991; Doktor, Tung & Von Glinow, 1991]. At the center of North American and Chinese partners' push to achieve success in IJV relationships, because of the huge flow of foreign direct investment in China, is to better understand what criteria managers use in evaluating performance and what measures are indicators of "success" or "failure" for the venture. In this respect, the findings of this study make a contribution in this

regard by suggesting what criteria and measures North American and Chinese partners use for performance measurement of Sino-North American IJVs. Another contribution of the findings of this study is that it provides insights from the assessment of multiple industry and product perspectives for the North American and Chinese partners as to the extent that the IJV achieved its strategic objectives as a measure of IJV performance.

The survey results showed that the general measures of satisfaction and specific indicators of performance appear to be interchangeable in the North American samples. To the extent that self-reported measures of objective data correlate with objective data, we can conclude that the measures of satisfaction also correlate with objective measures of performance. Based on work that has been done correlating self-reported measures and objective measures, we expect that they do correlate. However, this work has taken place at the organizational level rather than at the IJV level. Direct replication would be welcome.

One of the most interesting findings in the study is based on the comparison of Chinese and North American parents. Unlike North American firms, there is little correlation between general measures of satisfaction and specific indicators of performance for the Chinese firms. This lack of correlation could reflect a form of researcher imperialism. Stated differently, as Adler, Campbell, and Laurent [1989] argue: "[c]hoosing a methodology determines what we can study as well as the range of possible results and conclusions" [p. 61]. The specific indicators in use in this study are all derived from research experience in a developed country context and based on views in market economies with publicly traded firms. The developing country context in China is different

than that used to develop these indicators of performance, and therefore, it should not be surprising to discover that the measures do not transfer. This finding is consistent with work by Luo [1995] who found that the impact of certain variables in explaining IJV performance is "influenced by Chinese government policies and local business conditions" [p. 248]. The solution to this problem requires more direct research in China to ascertain a set of indicators that might lead to satisfaction among Chinese parents with IJV relationships. In other words, an understanding of local networks can improve the foreign venture's market expansion and enhance its market power in host environments because of the operational synergy effect between understanding the local Chinese networks and matching that with the North American partners' technological and organizational competencies [Luo and Chen, 1996].

It can be concluded from the study that the general measures of satisfaction are not perfect substitutes for the specific indicators of performance in the Chinese sample. It is unclear why some indicators are not correlated with satisfaction. For example, general measures of satisfaction of "the general manager's performance," for the Chinese partner, did not correlate with any of the 11 specific indicators of IJV performance. It is unclear if this lack of correlation is specific to a set of Chinese IJVs or would apply to all IJVs. It is possible that the number of specific indicators necessary to evaluate an IJV, at least from the North American perspective, is bounded [Parkhe 1993c]. If this is the case, then a standard set of measures might be developed to evaluate all IJVs. Alternately, it is feasible that indicators should vary by country type, or perhaps by the strategy of the venturing firm. In this latter instance, the comparative evaluation of IJVs becomes more difficult.

Furthermore, the lack of correlation between general measures of satisfaction and specific indicators of performance holds important implications for both North American and Chinese partners in IJVs. To the extent that partners view each other as similar, there may be misunderstanding about appropriate outcomes (and indeed, appropriate behaviors) in the IJV relationship. Beamish and Lane [1990], for example, demonstrated that cultural similarity leads to increased communication, and they proposed that the increased communication will lead to better performance for a IJV. This suggests two interesting paths for study. Does a lack of cultural similarity lead to decreased amounts of communication over time, thereby decreasing performance in the eyes of both parents of the IJV? Alternately, can increased communication lead to better understanding of the disparate methods for evaluation, and then better satisfaction for both parties?

Generally, firms with strong boundaries do develop like views of the world. However, joint ventures may not provide strong boundaries. Do the contacts provided by business interactions overwhelm the influence of culture? The most likely scenario is that some elements of culture are subject to change by business interaction, while others are not. Beamish and Lane [1990] have argued that "compatibility between partners is the most important factor in the endurance of a global alliance" [p. 88]. For the most part, the issues here are similar to those discussed in Meschi and Roger's [1994] and Xavier and Roger's [1994] studies of the cross-cultural study of the effectiveness of IJVs, related to assimilation and accommodation. In what conditions should parents expect assimilation, and in what conditions should they expect accommodation? Given the

absence of overlap in the relationship between satisfaction and indicators of performance present in this sample of North American IJVs, it is apparent that we need to know more about the specific outcomes that Chinese IJV parents expect before we can speculate about assimilation and accommodation.

Another interesting finding of this research, supported by the data and interviews, shows that both the North American and Chinese partners are satisfied with the expectations and outcomes for performance of the IJV on a number of key measures, specifically "process technology" and " raw materials and components." Our findings are consistent with those of previous research that shows that the commitment of key resources to the IJV, such as "process technology" and "raw materials and components," is critical to the performance expectations of the IJV [Yan and Gray, 1994; Demirbag, Mirza, and Weir, 1995]. Furthermore, these studies show that normally the North American partner contributes more heavily than the Chinese partner in the area of manufacturing know-how and imported materials. Yan and Gray [1994] find that "the Chinese partner contributes in the area of local sourcing, distribution, and personnel management" [p. 1492]. Put another way, complementary resource capabilities, mission, and managerial capabilities of the IJV partners are the necessary adhesives that promote synergy and strategic fit and successful performance for the IJV [Harrigan 1985]. The significance of these findings was explored in follow-up interviews and found to be crucial to promoting effective performance outcomes for Sino-North American IJVs.

Our *t-tests*, supplemented by notes from the interviews, show that while the perceptual differences

between the North American and Chinese partner on the performance effectiveness of the IJV were mostly the same, the most interesting differences were found in the indicators of performance expectations for the IJV for the Chinese partner in the areas of "research and development," "costs management" and "sales levels." These findings confirm those of other studies by Pearson [1991] and Yan and Gray [1994] that suggest that the three most important objectives of the Chinese partner are earning a profit, exporting for foreign exchange, and updating the manufacturing technology at the joint venture. First, the finding on research and development suggests that Chinese parents of IJVs encourage flow of technology through various IJVs to assist in the upgrade of hardware in certain industries to world standards and also to promote the development of managerial skills of Chinese participants in IJVs. Second, the findings in the study on "cost management" and "sales level" for the Chinese partners suggests that the inflow and outflow of foreign exchange must be balanced for the IJV in compliance with the joint venture laws of China [Davidson 1987; Beamish 1993; Yan and Gray 1994; Osland and Cavusgil 1996]. In other words, the Chinese partner's objective of growth has been achieved to the extent that the volume of the existing products has been increased beyond the original expectations. In this regard, the evidence suggest that Chinese managers work very hard to insure that the IJV has the ability to generate profits and to develop competitive advantages [Tai 1988; Punnett and Yu 1990; Luo and Chen 1996]. In addition, the Chinese partner wants to increase the sales level of the IJV in order to be able to export products from the IJV as soon as possible.

In summary, we offer several suggestions for future research that will extend this study and increase our understanding of the criteria for Sino-North American IJV performance in China

which results from cultural diversity and differences in organizational process, norms, and procedures. One theoretical area that might contribute to our understanding of these relationships is game theory. Solutions that are "win/win" will meet the demands of both the North American and the Chinese partners [Parkhe 1993b]. Unless both learn the differences in each other's evaluative models, win/win solutions are unlikely to emerge. This study, then, has both good news and bad news to report. The increasing numbers of Sino-American IJVs provide ample opportunity for learning for practitioners and scholars; particularly for studies that might include a larger sample of matched pairs in a single industry. The bad news is that the gaps are so wide, the learning tasks are daunting. Let the learning begin!

NOTES

1. An international joint venture (IJV) is defined as a separate legal organizational entity owned by two or more parent firms, where the headquarters of at least one partner is located outside the country of operation of the joint venture [Geringer 1988]. The IJV is subject to shared control by its parent firms, but is legally independent of the parent firms, and is often designed to achieve financial and economic independence [Shenkar & Zeira 1990]. These researchers also find that IJVs depend on parent organizations to varying degrees for raw materials, know-how, capital, trademarks, political support, or human resources.

2. As the following table illustrates, IJVs play a central part in the PRC's government strategy and have become the preferred mechanism for introducing foreign direct investment into China. Especially from 1979 to 1994, the capital utilized by IJVs amounted to half of the foreign direct investment in China.

Foreign Direct Investment and International Joint Venture in the People's Republic of China, 1979-1994

	International Joint Ventures			Foreign Direct Investment			Propor-
	Contract		Utilized	Contract		Utilized	tion
	Number	Value $billion	Value $billion	Number	Value $billion	Value $billion	(4)/(7) %
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1979-83	190	0.32	0.17	2,452	7.45	2.69	6.32
1984	-	-	0.25	-	-	1.42	17.61
1985	-	-	0.58	-	-	1.96	29.59
1986	892	1.38	0.80	1,498	2.83	1.87	42.78
1987	1,395	1.95	1.49	2,233	3.71	2.32	64.50
1988	3,909	3.13	1.98	5,945	5.30	3.19	62.07
1989	3,659	2.66	2.04	5,779	5.60	3.39	60.18
1990	1,317	1.25	0.67	4,091	2.70	1.89	35.45
1991	1,778	2.14	0.76	8,395	6.08	2.30	33.04
1992	34,354	29.13	6.11	48,764	58.12	11.01	55.50
1993	54,003	55.17	15.35	83,437	111.44	27.51	55.80
1994	27,890	40.19	17.93	47,549	82.68	33.77	53.09
Total	-	-	48.13			93.31	51.58

Sources: Almanacs of China's Foreign Economic Relations and Trade, 1984-1995/96.

3. The questionnaire was further pretested with three general managers of North American firms that have IJVs in the PRC. During the interviews, the general managers of the IJV were asked open-ended questions regarding the clarity and objectivity of each questionnaire item and the overall comprehensiveness of the instrument in capturing the process in which performance is measured in the IJV. Respondents were also asked questions to improve the overall design of the questionnaire.

4. It is also possible to test the equality of the correlations for the North American and Chinese samples using Fisher's z transformation test. Given the small sample sizes and standard significance level, however, significant differences are difficult to detect. Even so, there are some significant results. First, for the general satisfaction measure of *the IJV in general* with the 11 specific indicators of IJV performance found that six measures: "level of sales" ($p > .01$), "profitability" ($p > .05$), "cost" ($p > .10$). "research and development" ($p > .01$), "process technology" ($p > .01$), and "manufacturing" ($p > .10$) were significantly related. Second, the general satisfaction measure of *the IJV performance* with the 11 specific indicators of IJV performance found that two measures: "technology and engineering of the product" ($p > .05$) and "product engineering" ($p > .05$) were significantly related. Third, for the general satisfaction measure of *the general manager's performance* with the 11 specific indicators of IJV performance found that none of the measures were significant. Fourth, the general satisfaction measure of *the relationship between the partners* with the 11 specific indicators of IJV performance found that two measures: "research and development" and "raw materials and components" were significant at the $p > .10$ to .05 levels, respectively. Finally, the 11 specific indicators of IJV performance for *expectations and outcomes* for the North American and Chinese samples found four measures: "level of sales" ($p > .05$), "market share, ($p > .05$), "costs" ($p > .05$) and "research and development" ($p > .01$) to be significantly related.

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FIGURE 1
Organizing Framework

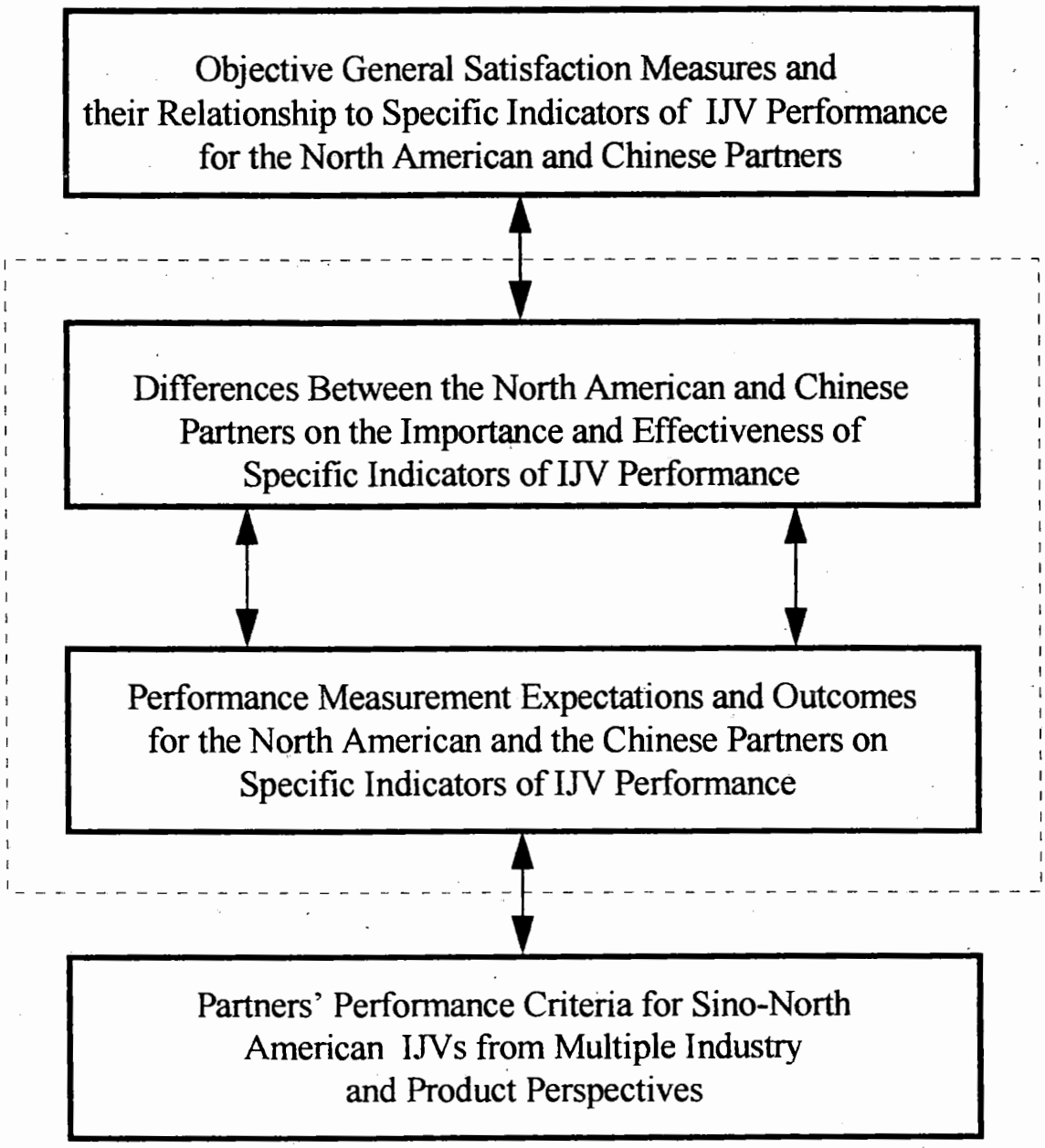

Table 1
Pearson Correlations
Between General Satisfaction Measures and Specific Indicators of IJV Performance

North American Sample

	General Satisfaction Measures			
Specific Indicators	IJV in General	IJV Performance	General Mgr's Performance	Relationships Between Partners
Level of Sales	0.605** (44)	0.442** (43)	0.263* (43)	0.501** (43)
Market share	0.447** (43)	0.427** (43)	0.309* (43)	0.278* (43)
Profitability	.670** (45)	0.576** (44)	0.294* (44)	0.581** (44)
Costs	0.143 (46)	0.139 (45)	0.069 (45)	0.125 (45)
Research & development	0.543** (25)	0.491* (25)	0.393* (25)	0.413* (25)
Technology/engineering of product	0.611* (31)	0.644** (31)	0.487** (31)	0.337* (31)
Process technology	0.609** (30)	0.581** (30)	0.300 (30)	0.424* (30)
Manufacturing	0.542** (33)	0.545** (33)	0.443* (33)	0.501** (33)
Raw materials & components	0.311* (31)	0.252 (31)	0.156 (31)	0.568** (31)
Marketing	0.461** (44)	0.315* (44)	0.379* (44)	0.364* (44)
Distribution channels	0.377* (30)	0.207 (30)	0.500** (30)	0.307* (30)

*$p < 0.05$
**$p < 0.01$

Table 2
Pearson Correlations Between
General Satisfaction Measures and Specific Indicators
of IJV Performance

Chinese Sample

	General Satisfaction Measures			
Specific Indicators	IJV in General	IJV Performance	General Mgr's Performance	Relationships Between Partners
Level of Sales	0.325* (54)	0.396** (54)	0.048 (54)	-0.143 (54)
Market share	0.182 (50)	0.405** (50)	0.029 (50)	-0.059 (50)
Profitability	0.432** (55)	0.513** (55)	0.128 (55)	0.066 (55)
Costs	0.147 (55)	0.378** (55)	0.110 (55)	-0.169 (55)
Research & development	-0.058 (44)	-0.139 (44)	-0.066 (44)	0.060 (44)
Technology/engineering of product	0.228 (48)	0.252* (48)	0.177 (48)	0.140 (48)
Process technology	0.085 (47)	0.033 (47)	-0.070 (47)	0.239 (47)
Manufacturing	0.191 (47)	0.303* (47)	0.135 (47)	0.328* (47)
Raw materials & components	0.131 (47)	0.070 (47)	0.099 (47)	0.137 (47)
Marketing	0.290 (54)	0.456** (54)	0.216 (54)	-0.048 (54)
Distribution channels	0.271* (48)	0.212 (48)	0.114 (48)	-0.026 (48)

*$p < 0.05$
**$p < 0.01$

Table 3
Mean Differences Between North American and Chinese Partners[1, 2]

	Importance of the Indicator	Performance on the Indicator
Individual dimensions		
Level of Sales	-0.586***	-0.276
	(-2.831)	(-1.299)
Market share	-0.332	-0.140
	(-1.387)	(-0.694)
Profitability	-0.204	-0.255
	(-1.020)	(-1.296)
Costs	-0.327*	0.018
	(-1.944)	(-0.103)
Research & development	-1.277***	-0.176
	(-5.246)	(-0.761)
Technology/engineering of product	-0.246	0.072
	(-1.042)	(0.331)
Process technology	-0.397	-0.094
	(-1.619)	(-0.399)
Manufacturing	0.034	-.367*
	(0.191)	(-1.737)
Raw materials & components	-0.100	-0.439**
	(-0.466)	(-2.453)
Marketing	-0.028	-0.184
	(-0.137)	(-1.004)
Distribution channels	-0.257	-0.321
	(-1.254)	(-1.482)

The numbers in parentheses are *t* statistics testing the null hypothesis that means are the same for the North American and Chinese partners.

[1]A negative sign indicates that the mean for the Chinese partner is greater than the mean for the North American partner.

[2]All test statistics are based on the assumption that the variances of the two samples being compared are not equal.

*$p < 0.10$

**$p < 0.05$

***$p < 0.01$

Table 4
Pearson Correlations
Between Expectations and Outcomes of
IJV Performance

	North American	Chinese
Individual dimensions		
Level of Sales	0.176	-0.436**
	(40)	(54)
Market share	0.435**	-0.050
	(39)	(49)
Profitability	-0.156	0.029
	(43)	(55)
Costs	0.185	-0.220
	(46)	(53)
Research & development	0.726**	0.184
	(23)	(44)
Technology/engineering of product	0.453*	0.216
	(30)	(48)
Process technology	0.401*	0.272*
	(26)	(46)
Manufacturing	-0.037	0.391**
	(30)	(47)
Raw materials & components	0.338*	0.252*
	(27)	(47)
Marketing	0.170	0.187
	(41)	(53)
Distribution channels	0.280	0.055
	(28)	(47)

*$p < 0.05$
**$p < 0.01$

APPENDIX I

INTERNATIONAL JOINT VENTURE PERFORMANCE QUESTIONNAIRE

How satisfied have the North American Partners/Chinese Partners been with the following aspects of the IJV? (circle one per item)

	Very dissatisfied				Very satisfied
The IJV in general	1	2	3	4	5
The IJVs performance	1	2	3	4	5
The IJV general manager's performance	1	2	3	4	5
The relationship between the partners	1	2	3	4	5

Which of the below mentioned factors for the North American Partner/Chinese Partner are the most important indicators of performance of the IJV? For each of the following, please rate the IJV's actual performance versus initial expectations when the venture was formed? (Circle one per item; circle "8" if not applicable)

	Not as important			Very important		Not applicable
Level of sales	1	2	3	4	5	8
Market share	1	2	3	4	5	8
Profitability	1	2	3	4	5	8
Costs	1	2	3	4	5	8
Research and development	1	2	3	4	5	8
Technology/engineering of product	1	2	3	4	5	8
Process technology	1	2	3	4	5	8
Manufacturing	1	2	3	4	5	8
Raw materials and components	1	2	3	4	5	8
Marketing	1	2	3	4	5	8
Distribution channels	1	2	3	4	5	8

For each of the following, please rate the IJV's actual performance versus initial expectations when the venture was formed. (Circle <u>one</u> item; circle "8" if not applicable)

	Much Below Initial Expectations		About Equal to Initial Expectations		Much Above Initial Expectations	Not Applicable
Level of sales	1	2	3	4	5	8
Market share	1	2	3	4	5	8
Profitability	1	2	3	4	5	8
Costs	1	2	3	4	5	8
Research and development	1	2	3	4	5	8
Technology/engineering of product	1	2	3	4	5	8
Process technology	1	2	3	4	5	8
Manufacturing	1	2	3	4	5	8
Raw materials and components	1	2	3	4	5	8
Marketing	1	2	3	4	5	8
Distribution channels	1	2	3	4	5	8

APPENDIX II

INDUSTRY CHARACTERISTICS OF THE TYPES OF PRODUCTS AND SALES VOLUME FOR THE NORTH AMERICAN SAMPLE OF INTERNATIONAL JOINT VENTURES

Industry	Number of Firms (n=50)
Aerospace/ automotive products	1
Automotive/technical assistance	2
Civil engineering	1
Coal mine machinery	1
Computer equipment/software	2
Construction equipment	2
Control data equipment	1
Diesel engines	1
Drum level indicators & gauges	2
Electronic communications	2
Energy and natural sources	1
Food products	1
Generator sets/engines/gas turbines	1
Glass	1
Hotel operations	2
Industrial and consumer tapes	1
Lubricating oils	1
Manufacturing assembly	3
Manufacturing/technology service	2
Material handling systems	1
Medical supplies	2
Milling and casing cutting tools	2
Mining	3
Oil well/logging equipment	2
Petrochemicals	2
Petroleum products	2
Pharmaceuticals	2
Power generation and boilers	2
Surgical medical and baby products	1
Telecommunications	3

Sales Volume:	Number of Firms (n = 50)
$1 - $5 million	12
$6 - $25 million	10
$26-$50 million	14
$51-$75 million	8
$76-100 million	4
Over $100 million	2

APPENDIX III

INDUSTRY CHARACTERISTICS OF THE TYPES OF PRODUCTS AND SALES VOLUME FOR THE CHINESE SAMPLE OF INTERNATIONAL JOINT VENTURES

Industry	Number of Firms (n=57)
Aerospace	1
Agricultural products	1
Aluminum	1
Automation control equipment	1
Automotive	2
Chemical instruments	2
Chemicals for Rubber industry	1
Computer and electronic instruments	1
Construction materials	1
Control values	2
Food processing	4
Food/animal products	1
Forestry/pulp	2
Gear machine tools	1
Home health care	3
Industrial automation products	1
Industrial machinery	2
Medical equipment	2
Oil field equipment	2
Organic chemicals	4
Packaging materials	3
Petroleum products	2
Pharmaceuticals	3
Printing equipment	1
Process controls	2
Processing machinery	2
Real estate development	1
Rotation machine monitors	2
Sporting goods	1
Telecommunications	1
Textiles	3
Waste treatment equipment	1

Sales Volume	Number of Firms (n = 57)
$1 - $5 million	17
$6 - $25 million	20
$26-$50 million	12
$51-$75 million	3
$76-100 million	3
Over $100 million	2