Strategic, organizational, and cultural fit:

Effects on performance in China-US joint ventures*

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Abstract
We explore the effects of three fit categories on US-China joint-venture performance using four performance measures. Many studies prescribe strong fit across multiple categories as necessary for high performance, but little rigorous analysis supports this. Three important threads of existing “fit” research originate in the literature: strategic, cultural and organizational fit. We analyze an original survey dataset of over 80 US-China JVs, and test for effects of fit-categories using two orthogonal measures for each thread. Additionally, multiple control factors give a compelling look at a complete model of fit’s effects on JV performance. Objective congruence (strategic fit) among JV partner-firms, impacts two performance-measures. Efficacy of managerial communications (cultural fit) also matters, as does harmony regarding hiring decisions (organizational fit). Resource complementarity between partner-firms and cultural similarity tolerate poor fit. Our findings are a step forward empirically, attacking persistent questions about JVs, in a context of US-China JVs and performance.
STRATEGIC, ORGANIZATIONAL, AND CULTURAL FIT:
EFFECTS ON PERFORMANCE IN CHINA-US JOINT VENTURES

1. INTRODUCTION

The determinants of high-performance in joint ventures (JVs) have been extensively studied. Many scholars have offered insights into factors that affect economic and other measures of JV success or failure. Recently, part of the literature has converged on particular specific important categories of factors, unified by the concept of fit. Based on the literature, we argue for the primacy of three particular fit-related factors’ effects on JV performance. Little work, however, has rigorously explored the effects of all three of these factors on JV performance. Using original, detailed data comprised of over 80 recent China-U.S. joint ventures operating in China, this primarily empirically paper scrutinizes the impact of strategic, organizational and cultural fit on JV performance. The arena of China-U.S. equity-based joint ventures is rich and diverse, providing an appropriate venue for a study of the three specified categories of partner-fit.

When considering the extant “literature of fit,” we are struck by the preponderance of studies theorizing about or empirically exploring one or two factors rather than all three. Part of the reason for this may be a lack of agreement in the literature as to precisely which observable phenomena and managerial attitudes comprise valid measurements of fit. In the first sentence of the conclusion to their article, Hennart and Zeng (2005:113) assess the situation well: “The literature on the determinants of alliance performance is increasingly diverse, with no clear consensus as to what the dependent and independent variables ought to be.” Our study begins to address this issue by acknowledging the diversity in definitions of fit and using two very
different measurements for each of the three types of fit—strategic, organizational and cultural—a total of six measures of our independent variables. Therein lies a major part of our contribution: we test a reasonably complete model of the determinants of JV performance using a diverse set of reliable measures of fit. Additionally, we construct and model four independent measures of JV performance, our dependent variable: perceived satisfaction with JV performance, perceived prior financial performance trends, perceived overall competitiveness of the JV, and perceived efficacy of JV decision making structure. We use diverse JV performance indicators in recognition of the myriad ways in which performance may be measured. Our approach to measuring performance, while admittedly imperfect, avoids some issues encountered by other scholars.

The academic literature concerning international joint ventures has its roots in the 1980s, and is vast. In this paper, we confine our attention to papers concerned with fit between joint venture partners. The remainder of this section briefly discusses the nature of fit as we envision it, and describes in brief the break-down of each of the three strategic fit factors into two (intendedly) orthogonal, empirically tractable independent variables.

For the purposes of this paper, we adopt a liberal notion of fit. Fit may reflect perceived degree of agreement or commonality between partners, as in the case of objective congruence between JV partners. For example, when partners both intend, over time, to profitably manufacture and sell automobile parts in export markets (outside China) we interpret this as a high degree of objective congruence. We also recognize, however, that fit may entail complementarities between partners, as in the case of resource complementarity. Under dyadic resource complementarity, one partner-firm, Partner2, is strong in, say, Resource1 (one of two critical
resources needed for a product to be manufactured and sold), while Partner2 is weak in Resource1. Additionally and necessarily, Partner1 is weak in Resource2, in which Partner2 is strong. For example, if one partner provides low-cost manufacturing resources while the other provides marketing and distribution savvy, and each is weak in the arena of the other’s strength, we interpret this as a high degree of resource complementarity: a high degree of fit exists. Our pragmatic approach to defining fit recognizes that fit is in the eye of the beholder, and allows us to model the effects of different conceptions of fit on JV performance.

Two factors comprise strategic fit: congruence of partners’ objectives, and complementary resources. Cultural fit is also comprised of two components: cultural compatibility (further bifurcated into national and corporate cultures), and the quality of managerial communications between partners (a more indirect measure of cultural compatibility). Finally, organizational fit is also divided into two defining elements: equity (ownership) structure of an alliance, and the extent of harmony in the top management team’s decision making processes. We explore whether any of these six proxies for fit influence performance separately and in some combinations. We acknowledge that each of the six proposed causal factors of interest have been discussed and separately measured empirically in the past, though typically with a few control variables or anecdotally via cases. Each hypothesis offered has also been tested independently, but not in a rigorous, complete, reliability-tested model offering insight regarding which particular aspects of fit matter more than others, ceteris paribus. Our findings, admittedly, may suffer from limited generality owing to the nature of the sample, which is composed of solely China-US joint ventures. Our insights, nonetheless, offer a tantalizing glimpse of one approach
to (empirically) resolving some major questions surrounding fit and performance in cooperative ventures.

This paper proceeds as follows: first we review the literature on “fit” in three parts, starting with (a) studies that treat multiple aspects of fit (works with main thrusts close to our own). We then briefly discuss (b) a particularly relevant study regarding joint ventures. We finish our examination of the literature by (c) arguing for six fit-savvy testable hypotheses as we briefly touch on the literature for the two components of fit derived from each of the three main fit-categories. Second, we describe our methodology and the sample data. Third, we present the results of a data analysis using ordinary least squares regression. Finally, we discuss the implications of the results, possible issues, and future directions for this line of research.

2. STUDIES TREATING ALL THREE FIT-RELATED FACTORS

In an article that discusses managing the dynamics of fit, Douma et al (2000:582) present a “generic fit framework” and conclude that alliance success requires good fit in no fewer than five areas: strategic fit; organizational fit, cultural fit, operational fit, and human fit. These five types of fit are all purported to be indispensable for alliance success. Their work focuses primarily on strategic and organizational fit, and takes a (useful) dynamic rather than static view of fit whereby the degree of fit may be improved over time. The authors maintain that the more partner-firms complement one another, the greater the probability that an alliance will be successful (resource complementarity). Other drivers for strategic fit include the compatibility of strategies (similar to this paper’s congruence of objectives) and strategic importance.
Regarding organizational fit, Douma et al focus on *ex ante* alliance design issues and maintain that a good design should address organizational differences, provide flexibility, and enable effective management control for both partners. This approach avers that fit may be “designed into” alliances. Although dynamic, Douma et al’s exclusive focus on alliance design does not offer insight into important organizational fit issues that may arise after the JV is established and operating—especially with respect to behavioral uncertainty of partners—farsightedness with respect to performance is lacking. Performance should be measured after a JV operates for a period of time. Additionally, alliance design, given the impossibility of complete contracting (Williamson 1975), can never articulate a complete set of contractual clauses that precisely mandate the scope of knowledge-sharing, or the precise delineation of scope and division of work prior to a JV building some operating experience. Contracts are necessarily incomplete, and besides measuring efficacy of the alliance design activity, this line of research is of limited utility in predicting successfully operating JVs. Our work acknowledges that transaction cost factors affect a JV’s performance.

Although they offer meaningful insights, Douma et al base their extensive conclusions on a case study, potentially limiting the generality of their findings. Their chosen case study JV excelled at all five of their specified fit parameters. This seems to us to represent an onerous standard for a successful alliance. We suggest that it may be possible for a JV to experience high performance under less than “perfect” conditions, i.e., when not all factors are optimal—our empirical approach allows for this possibility.

Faure (2000) discusses the impact of strategic, organizational and cultural issues on performance in the setting of negotiations prior to entering into a JV. Significant difficulties encountered by
both parties during negotiations are explored and divided into three categories: strategic, cultural, and organizational cause. These areas correspond strongly to our conception of strategic, cultural, and organizational fit, but, like Douma et al, since Faure applies his framework solely to the negotiation process, the results are of limited use for us—they ignore actual JV outcomes—the nature and extent of performance during a JV’s lifetime matters. Faure’s strategic cause corresponds to one part of strategic fit for us: congruence of objectives between partners is a primary factor determining the success of negotiating outcomes (for our study, JV performance outcomes).

Regarding cultural causes (what we call cultural fit), at the beginning of negotiations two parties agree to cooperate based on their respective knowledge, procedures and resources—initial characteristics that are frequently very different for each partner. Mutual partner-ignorance of the details of firm-specific cultural nuances ensues—partner-firms are uncertain of the endowments and processes of their partners. These cognitive gaps are dangerous because they are not necessarily perceived directly, and may introduce periods of costly mutual misunderstanding (Heiman and Nickerson 2004). Commonality of partners’ cultures is positively associated with performance. For Faure, performance comprises the successful outcome of the negotiating process, a worthy, but incomplete goal whichneglectsthe potential richness of in-stream operational performance data. Operational performance data as well as managerial attitudes toward performance (after operating over time) are critical elements of JV performance. Does a successful negotiation portend a successful JV? Perhaps, but Faure does not shed light on this question. Our approach to the logic of cultural fit is, however, broadly compatible with Faure’s.
Luo et al (2001) explore the parent-JV relationship as it affects performance. They discuss the relationship between control and performance and investigate the potentially moderating influences of objective congruence, culture, parent competency and equity stake on that relationship. In a more expansive empirical effort, Luo and Park (2004), via analyzing 250 China-foreigner JVs, show a strongly dominant empirical link between high levels of partner-cooperation and performance in JVs. They find that perceived high-quality cooperation among both partners tends to occur only in the presence of partner-goal congruence. We interpret their work as using rough controls for cultural and organizational fit factors while focusing on strategic fit (in the form of goal congruence) and the implications for performance. Their results for cultural and organizational fit factors vary depending on which partner is assessing the JV, suggesting some inconclusiveness regarding findings. Their work, in some ways, most closely echoes our approach, but with some important differences. For example, our dataset is composed solely of China-US JVs. Although they investigate strategic, cultural and organizational determinants of performance, the two above-noted works focus on the impact of these three factors on the relationship between control and performance, and the relationship between cooperation and performance. Luo and Park’s major contribution, from our perspective, introduces a logic wherein all fit factors may not be necessary for a JV to achieve high performance. We agree with this approach and specifically test for its veracity. In this paper, however, we discuss the direct impact of the above fit-related factors on JV performance, rather than their role as moderators between control and performance.

Buchel (2002:199), in a longitudinal case study of one joint venture, considers the effects of “driving forces” on JV “divergence and convergence in group relations.” In the formation stage,
the strategic fit factor of goal congruence matters most. In the subsequent adjustment stage, the cultural fit element of managerial communication is the prime factor determining performance. During the evaluation stage, renegotiation may result in equity structure corresponds to or other remediations to existing agreements regarding distribution of rents—this reflects action in the realm of organizational fit. Buchel usefully identifies stages where certain types of fit matter most depending on the stage. Our work looks at “mature” stage JVs, all of which have operated for over two years. In Buchel’s terms, we scrutinize either the adjustment or evaluation phase. We question from Buchel’s implicit view that the primacy of partners’ goal congruence is expected to fade over time in high performing JVs.

This section has recounted several notable works wherein all three of the fit factors in which we are interested are treated. Generally, the work is of laudable quality, despite a preponderance of case studies, and some preference for analyses of negotiation-stage JVs. These approaches, although rich in dynamic detail, may lack generality of findings; our analysis, while admittedly of primary relevance for China-U.S. joint ventures, employs inferential statistics on a geographically diverse sample and, where feasible, deploys original, reliable survey-based measures.

A particularly relevant prior study on Asia-West JVs

Lasserre (1999) identifies several factors associated with the perception of satisfactory joint venture performance from western managers’ views. Lasserre’s study solely treats western manager satisfaction across JVs in multiple Asian countries as a measure of performance. Western partners show satisfaction if joint ventures are instrumental in achieving the partner’s objectives and if costs of cooperation are minimized. The author also explores the impact of
strategic and cultural fit on satisfaction—both factors are positively associated with satisfaction. Strategic fit exists when the western partner perceives that both partners share a common view about the objectives of a venture. A perceived short-term, extractive orientation by an Asian partner has a very strong negative influence on the expressed satisfaction of Western managers.

Western partner satisfaction is chosen as a measure of joint venture success because the author states that the “…perception of satisfaction or dissatisfaction of the people involved in JV management reflects an important dimension of joint venture performance independent of whether the joint venture is financially or commercially successful” (Lasserre 1999:3). We find this thinking cogent, and share Lasserre’s view of perceived performance, though we take issue with whether performance of any JV is necessarily well-measured by the perceptions of only one partner. Much research, including ours, suffers to some degree from similar drawbacks. Admittedly, the article states that it’s goal is to measure western partner satisfaction without claiming to measure overall JV performance. Our approach improves on Lasserre’s by introducing more diverse measures of performance and by controlling, as well as the data permit, for the difference between participants originating from either Chinese or American partner-firms versus participants hired independently by the JV management team. Note that our sample includes some “Chinese” managers who possess multiple years of experience in U.S. firms, prior to joining the U.S.-Chinese JV under study. Some of these managers are U.S. citizens, and have lived in, worked in, and acculturated to the U.S. for years. This renders the line between “Chinese” and “American” managers substantially less clear. This may engender diminished or no detection of differences in perceived performance owing to partner-firm’s “national” origin. We mention this issue again, briefly, in Section 3, Method and Data. The
Following section offers hypotheses—two for each fit-category—using intendedly orthogonal, empirically tractable proxies for underlying factors associated with performance in JVs.

**Hypotheses regarding strategic, cultural and organizational fit in JVs**

**Strategic fit I: Congruence of partner-objectives.** Many researchers maintain that congruence of objectives is one of the basic determinants of joint venture success (Inkpen and Currall 1998; Tomlinson and Thompson 1977; Tung1984). Simply, congruent objectives mean that partners seek the same ends. As an example of lack of objective congruence, consider a JV between a Dutch chemical firm and a Chinese chemical firm (Heiman and Nickerson 2004), wherein the Dutch partner sought to build operating expertise in China and to run a processing plant for profit (from export initially, to be followed by sales to the domestic market later). The Chinese partner, on the other hand, was primarily interested in draining cash from the JV with little regard for profitability or the need to operate profitably in the future. The JV was ultimately designated a failure. Neither partner’s goals were met owing to the divergent nature of each partner-firm’s objectives.

Congruent objectives are seen as minimizing transaction costs and agency costs, while the incongruence of objectives contributes to conflict between managers and also affects the stability of collaborative relationships (Buchel 2002). With different goals, misaligned incentives may arise, resulting in opportunistic behavior (Williamson 1983; 1991) and subsequent venture failure. Personnel from each parent-firm may pursue their partner-firm’s interests instead of mutual partner-interests, leading to alliance failure (Park and Ungson 2001). As congruence of partner-firms’ objectives increases, joint venture performance increases.
Hypothesis 1: Ceteris paribus, congruence of partner-firms’ objectives is positively associated with joint venture performance.

Strategic fit II: Complementary resources. Since it is comparatively more costly to build relationships in foreign countries than domestically, parent firms invest overseas when resources are unavailable at home (Chen et al 2004; Dunning 1980; 1988). Scholars maintain that resource complementarities are important because jointly utilizing complementary resources generates higher returns than using these resources separately (Chi 1994). For example, Isobe et al (2000) focus on technology-intensive industries and find that a foreign parent’s high commitment to technology transfer (integration of complementary knowledge-resources) has a positive impact on parent firms’ satisfaction with a JV.

Researchers have also pointed out, however, that an alliance is less stable if an asymmetric contribution situation exists and creates an effectively unilateral dependence which leads to asymmetric bargaining power between partners (predicted by Williamson 1983; 1991; empirically supported by Park and Ungson 1997; Hamel 1991). Our view of complementarities also recognizes the issue of asymmetric contributions by a partner. We acknowledge the role of mutual hostages/dependency (Williamson 1983), or the need for “balance” in partner-contribution to the ability to generate rents in a JV (Teece 1977; 1980; 1981). The operative logic is economizing in its thrust (Williamson 1975)—resource access to foreign productive assets, when granted under properly safeguarded governance, economizes on both the costs of production and governance—mutual benefits ensue (Williamson 1985; 1991). The presence of complementary resources in a JV might include, for example, distinct unique bodies of knowledge possessed by each respective partner. The degree to which partner-specific
knowledge-resources are intangible (difficult to share) is positively associated with increasing need to safeguard a JV against malfeasant behavior by a partner-firm, particularly if the intangibility is not present to a similar degree in partners’ knowledge-resources (Williamson 1985; 1991; Oxley 1997). Complementary resources may, of course be more tangible, and for example, also include one partner with manufacturing capabilities and another with distribution capabilities. Both tangible and intangible resource complementarity foment increases in partner incentives to behave owing to the existence of mutual hostages. In this paper, we assert that owing to alignment of incentives to perform from mutual hostages, complementary partner-resources have a positive relationship with JV performance.

**Hypothesis 2:** Ceteris paribus, increasing resource complementarities between partner-firms in a JV are positively related to the venture’s performance.

**Culture Fit I: Culture similarity.** A common belief articulated in the literature states that the greater the cultural distance between the parent firms, the more difference in their managerial and organizational practices. Low levels of cultural similarity is purported to increase coordination costs because of the cultural adjustment involved in a joint venture (Kogut and Singh 1988; Barkema et al 1996; Li et al 2001).

Some theorists (Sirmon and Lane 2004) divide culture into three categories: national, organizational, and professional. They believe that the closer the domain of a social group is to the value-creating activities of an alliance, the more disruptive the culture difference between the partners’ members in that social group becomes. Differences in professional culture will be most disruptive, followed by organizational culture differences and national culture differences.
Though we treat only the organizational and national culture fit components described by Sirmon and Lane, we recognize the value of their multi-level thinking.

Barkema, et al (1996), use an organizational learning approach, treat JV-longevity as the performance measure of interest, and show that cultural distance plays an important role in determining JV-longevity. Their work covers 13 Dutch firms engaged in 225 JVs. Though we do not look at longevity as a dependent (performance) variable, Barkema et al’s thinking is largely compatible with ours. Hypothesis 3 expresses our assertion regarding the relationship between organization culture similarity (fit) between partners and the performance of a JV:

**Hypothesis 3: Ceteris paribus, increasing cultural similarity between partner-firms in a JV is positively related to a joint venture’s performance.**

Culture Fit II: Managerial communication between partners. We recognize that there are alternative ways to conceive of cultural fit. Specifically, managers in multi-cultural joint ventures frequently mention issues arising from poor communications owing to culture and language barriers. Lack of cultural or linguistic competency leads to a lack of understanding of assignments and poor communications (Oxley 1997; Heiman and Nickerson 2004). These conditions incur costs for remediation. Each partner-firm tends to base its managerial interaction style on its unique past alliance/JV experiences as well as its prior unique internal interactions. Individuals in each partner-firm may incorrectly interpret certain events or statements by JV team-members from the other partner-firm; distrust or conflict between partner-firms may arise (Buchel 2002). The lack of efficacious communication between participants in a JV results in increased coordination costs (e.g., the cost of creating a common vocabulary of terms for increased communication efficacy), and may negatively impact JV performance.
Hypothesis 4: Ceteris paribus, increasing efficacy of managerial communication between partners is positively associated with a joint venture’s performance.

Organizational fit I: Equity structure. Frequently an example of fit by design, equity has been typically interpreted as a measure of control and dominance in a joint venture (Blodgett 1992). The division of control is thought to be a critical determinant of joint ventures’ stability (Geringer and Hebert 1989). Some contrary views regarding division of control maintain that JVs are more stable when partners begin with a 50/50 shared control structure owing to high levels of trust required to make decisions mutually (a form of the above-mentioned mutual hostages argument). Unequal division of ownership gives a majority shareholder the power to dictate terms. This power may manifest itself in the frequent opportunistic unilateral renegotiation of joint venture contracts/terms and subsequent dissatisfaction by the non-dominant partner-firm. Blodgett (1992) sees this syndrome as an indicator of instability in JVs.

Predominant evidence from the literature, however, shows the opposite to be most likely true within limits. As the presence of a dominant partner is increasingly clear in a JV, stability increases. When one partner has majority control, decision-making is easier and less time consuming (Killing 1983; Geringer and Hebert 1989) and a deadlocked vote by share ownership is not possible. When an even share-control structure (50/50) is used, however, partners may experience coordination (decision making) problems and related increased costs, reducing the value captured by a JV (Geringer and Hebert 1989). There remain, nonetheless, others who failed to show a significant positive relationship between imbalance of ownership control and JV performance (Steensma and Lyles 2000). Overall, prior studies shed little light on the relationship between equity structure and joint ventures’ performance. We side with the
predominant perspective, compelled by the “efficient facilitation-of-decision-making” argument mentioned above. We define a dominant partner as having the ability to exert exclusive control over a JV.

Hypothesis 5: Ceteris paribus, the existence of a dominant (equity-based) partner-firm in a JV is positively associated with performance of the JV.

Organizational fit II: Top management team decision making process. In addition to the importance of the formal division of control within a JV, we assert that a high degree of mutually agreed-upon decision-making within a JV’s management team is likely to lead to high performance. When studying joint venture performance, some researchers have highlighted the impact of cultural distance or control structure, but limited research has dealt with another pivotal factor: the extent of harmonious decision making in a JV. A JV’s management team typically consists of five to ten managers. Each parent firm designates a team, each of which often maintains strong allegiance to their respective parents (Li et al 1999). Each JV’s team has management responsibility for JV operations, but individuals from particular parent-firms also act as delegates of their respective parent-firms (Hambrick et al 2001). Each (self-interested) parent would like to exert more control over the JV than the other. In a given JV, since top managers in some critical positions have more control, parent companies often prefer their own people to occupy these positions (Li et al 1999). For example, our data shows that some China-US Joint ventures create two similar positions executing largely the same function, with identical or slightly different titles. Two managers, each from a different parent-firm occupy each position; this is one possible manifestation of partner-firms’ desire for control by their own managers. Role ambiguity may arise, which harms a joint venture’s performance by increasing
coordination costs. The reliability of communications (particularly managerial fiat) decreases—unnecessary inaccuracy and redundancy in communication gives rise to increased remedial costs. Some researchers also assert that increasing imbalance in management control leads to a higher level of parental conflict and a high likelihood of alliance failure (Steensma and Lyles 2000). We assert that mutual agreement on strategic matters within top management is associated with increased performance, while one-sided control (authority-based decision making—see Nickerson and Zenger 2004) is associated with comparatively inferior performance:

**Hypothesis 6:** Ceteris paribus, within a JV’s top management team, partner-firms’ representatives consistent mutual agreement in decision making is positively associated with JV performance.

Note that Hypothesis 6 deals with control of the actual, or informal decision making structures in the JV, while Hypothesis 5 explores the effects of the formal (legal) contractual distribution of control (equity shares).

### 3. METHOD AND DATA

Our empirical approach to understanding the role of three distinct types of fit in determining JV performance employs a survey instrument, with which we gathered data from over 100 Chinese JVs during the period 2003-2005. Our data came primarily from four loosely designated regions, Beijing, Shanghai, Guangdong and Tianjin. In total, data was obtained from 112 China-US JVs distributed roughly evenly by region. A few JVs from outside the above regions were also included in the survey data. In each region, the first step was to obtain a list of registered joint
ventures from local governments. We then filtered the lists to include only (1) China-US JVs with over 100 employees, and (2) JVs that have existed for at least two years--this ensured that managers would have had sufficient time to form reasonably accurate beliefs about a given JV’s performance. Subjecting the government-provided lists of JVs to our inclusion criteria resulted in an original dataset of about 2000 JVs being reduced by over 80% to about 400. Of these China-US JVs, 112 managers agreed to be interviewed by our team who personally administered the survey instrument in order to offer clarification as needed to respondents. This constitutes an overall 28% response rate. Our team’s interviewers consisted of a Chinese university professor and several PhD students. Extensive discussions were held within the China-based research team regarding the survey questions and how to consistently record responses (discussions after a initial round of interviews were particularly useful).

The respondents were either hired independently by the JV (i.e., not from a parent-firm in the JV), or came from a parent-firm in the JV. In some cases, respondents were Chinese people with substantial experience at western (American) firms who came from these firms to work at the JV. Some of the Chinese participants in the JV had previously worked at American firms in the US, including at the American parent. The sample is diverse, and we caution the reader that owing to the effects globalization on labor mobility, the line between “Chinese” and “American” respondents is no longer as clear at it once was. We interpret this development as possibly mitigating the issue of potential bias based on a respondent’s “origin.”

Using the dataset described above, we develop constructs for independent and dependent variables. We recognize potential issues with common-method bias in measuring our independent and dependent variables, but elect to treat this as a minor methodological
disadvantage. The survey data is rich in that there are many items that can be usefully combined to create reliable measures of several of the elements of fit and performance. In many instances, we perform useful combinations and transformations on multiple survey items in order to create meaningful composite measures. Multiple composite measures are then combined into a useable (or not) construct depending on the results of tests using Cronbach’s Alpha (Alpha ≥ 0.7 is our standard for construct reliability). The resulting reliable constructs are then used in an analysis employing ordinary least squares (multiple) regression. Below, we discuss the construction of variables and provide summary descriptive statistics of our constructs as well as a correlation matrix.

4. CONSTRUCTION OF VARIABLES

The Dependent Variable: Performance

Measuring JV performance: What has gone before. In previous studies, several reasonable measures of joint venture performance have been proposed. How to evaluate performance, however, is a controversial topic (Calantone and Zhao 2001). The measurement of joint venture performance can be usefully divided into four categories (Probst and Buchel 1997): economic, strategic, behavioral, and learning. The economic perspective focuses on how to add value to the parent company. For example, some researchers use financial performance ratios such as ROI, ROE, or profits as measures of performance (Calantone and Zhao 2001; Li et al 2001). The strategic perspective emphasizes non-financial, but nonetheless important outcomes. In contrast to an economic view, it recognizes long-term interests, mainly focusing on the company’s size, product, market share, and competition. Additionally, the strategic view concerns itself with a venture’s core competence(s), and the possibility of strategic malfeasance (wherein the
contractual arrangement between partners is breached by guileful, self-interested, opportunistic actors—see Williamson, 1985; Oxley, 1997). The behavioral perspective concentrates on the likely actions of partners and prefers to scrutinize antecedents and processes in JVs rather than outcomes. Behavioral-view oriented measures of joint venture performance include trust between partners, transparency of the joint venture, division of responsibility, the ability to deal with crisis, and the ability to hedge risk. The learning perspective is substantially different from the other three, more conventional, viewpoints. The learning view focuses on outcomes, but also pays attention to the process elements of activities. Typical empirical measurements for this perspective include the achievement of mastery over technology, marketing, partnerships, and management skills. Probst and Buchel’s (1997) taxonomy of JV performance is useful because it allows us to think about performance outcomes in a systematic manner.

Other measures of JV performance. Park and Ungson (1997; 2001) treat the premature dissolution of JVs as an indicator of poor performance. They note the deleterious effects of opportunistic threats, cultural differences, and competitive rivalry in determining the premature dissolution of JVs. Another popular measure of JV performance is parent firms’ overall satisfaction with the joint venture and the likelihood of employee retention in the JV (Isobe et al 2000; Luo and Park 2004; Lasserre 1999). Other researchers evaluate JV performance by looking at the effectiveness with which both partner-firms achieve their alliance objectives (Douma et al 2000; Sirmon and Lane 2004). Our analysis recognizes the diversity of accepted measures of JV performance by using four distinct JV performance measures.

Our Approach to Measuring JV Performance
We employ four distinct measures of performance. We treat dependent variables as reflecting underlying continuous factors. One of our dependent variable constructs is a conventional economic measure (perceived financial performance trends). Two performance measures are slightly unconventional behavioral measures (perceived managerial satisfaction with the quality of inter-firm cooperation and perceived quality of JV decision-making. One performance measure is strategic in nature: competitiveness versus other industry players (not necessarily JVs).

One distinctive element of our approach is that for some measures (where feasible), we specify that performance is scored as high only when respondents indicate that participants from both partner-firms agree about perceived high performance. For example, the performance measure satisfactperform is comprised of the mean of six distinct items from the survey, some of which inquire regarding perceptions of U.S. partner satisfaction and some of which measure perceived Chinese partner satisfaction. All constructs are comprised of non-standardized survey items. When a calculated Cronbach’s Alpha is deemed sufficiently high to suggest a reliable construct, the construct, unless otherwise noted, is calculated by averaging the relevant test items, but adjusting case-by-case as needed to account for missing data in the calculation of the mean. This prevents distortion of the construct’s value for cases with missing data while allowing us to use as much of the available data as possible.

**Dependent Variable I: Perceived satisfaction with JV performance.** Returning to our first performance construct, satisfactperform, in two survey items, we ask respondents to indicate their perceptions of each partner-firm’s satisfaction with the cooperation between partner-firms that has occurred in the JV. That is, in separate items, the respondent indicates his/her perception
of the satisfaction level of the Chinese partner-firm and then indicates his/her perception of the satisfaction level of the American partner-firm. One respondent per JV was surveyed. The respondent originated from the Chinese or American partner-firm, or was hired independently by the JV.\textsuperscript{9} We create a composite variable that is set equal to 1 only if respondents perceive that both partners are satisfied with the cooperation that occurred in the JV, and is set equal to 0 otherwise. This comprises a conservative approach to recognizing high performance. Where relevant, and when the data permit, several other constructs discussed are built in a similar fashion. The perception of a high degree of satisfaction on the part of both partner-firms regarding the achievement of high performance is required to code a variable as reflecting perceived high performance in the JV. We construct a similar measure from two additional survey items to indicate partner-firm satisfaction with JV achievements to date. In addition to these two composite measures, we use more mundane measures of satisfaction with performance in developing the construct. One question directly asks if respondents are satisfied with the cooperation in the JV to date. The response is measured on a 7-point Likert-type scale with a range of 1-7, where 4 is neutral, 1 is completely unsatisfied and 7 is completely satisfied. Another question asks if respondents think the JV is successful, and is scored as for the previous question. Two more items inquire about respondents’ impressions of top managers’ satisfaction with sales and profits for the most recent year, and are also scored on a 7-point scale. The construct, $satisfactperform$, scored a Cronbach’s $\alpha=0.82$ when all six items were considered, considerably above our standard of 0.7 for inclusion in the analysis. Higher values of the construct $satisfactperform$ reliably indicate increasing satisfaction with JV performance as perceived by the respondent.
Dependent Variable II: Perceived prior financial performance trends. Our second performance measure looks at perceived past trends in the JV’s financial performance. The construct, trendperform, is comprised of six measures that inquire regarding respondents’ perceptions of the most recent main trend in the JV’s sales, profits, ROI, ROA, and ROS as well as the JV’s overall achievements over the past three years. In many (though not all) cases, respondents were able to look up or calculate the actual performance figures, rather than having to estimate, thereby increasing the accuracy of responses. The construct, when Cronbach’s Alpha is calculated, has an Alpha=0.97, and is deemed reliable. Higher values of the trendperform construct indicate a greater degree of perceived prior high financial performance trends.

Dependent Variable III: Perceived overall competitiveness. Our third performance measure, a construct labeled overallcompetitiv measures the perceived overall competitiveness of the JV. The construct combines seven measures of respondents’ perceived positions versus their competitors. The following aspects of the JV versus its competition are rated on a 7-point scale where 1 is much weaker, 4 is equal (neutral) and 7 is much stronger: management skill, production technology, production equipment quality, patent portfolio, product quality, distribution network, and quality of employees. When the items are combined into a construct, the Cronbach’s Alpha=0.88, indicating reliability—we are reliably measuring the perceived overall competitiveness of a JV versus its competition. We note, however, the remarkable agreement performance across various areas of competition is ostensibly somewhat anomalous. This might be explained by the relative homogeneity of JVs’ value chains associated with a particular constant form of governance: an equity JV. That is, successful JVs excel in a
consistent set of areas versus their competition. We acknowledge, however, that a less
monotonous competitive landscape may in fact exist—we may have simply failed to measure it.

**Dependent Variable IV: Quality of the decision making structure.** The fourth performance
measure is a construct labeled *decisionperform*, which asks “what is the quality of the decision-
making in the JV?” We ask about the perceived influence of the existing decision-making
structure on JV performance using 11 questions. The measure is intended to capture the
aggregate performance of the JV’s managerial decision structure by combining rated
performance across different areas of decision making. The data makes available detailed
information regarding the perceived efficacy of decision making in multiple areas in the firm.
This original construct measures behavioral aspects of both partner-firms’ performance as
perceived by respondents. It is somewhat similar in character to managers’ perceived satisfaction
with a JV’s inter-firm cooperation and achievements (*satisfactperform*) which is also comprised
of multiple measures that vary by area of JV function.

The construct *decisionperform* consists of eleven survey items pertaining to the influence of
decisions by area on JV performance. The following areas of decision-making comprise the
construct: incentive/salary policy, appointment of middle managers, distribution of dividends,
financial control, marketing strategy, purchasing plans, corporate strategy, quality control,
training, R&D investment, and production plans. Respondents were asked to estimate the
contribution to performance of decision making in a particular area, where a score of 1 represents
“decisively lowered JV performance,” 4 is neutral (no effect on performance), and 7 represents
“decisively increased the performance of the JV.” The construct comprising all eleven items
reliably reflects an overall measure of perceived decision making performance in the JV
(Alpha=0.93, implying a highly reliable measure). Overall decision making performance seems a reasonable construct for use as our fourth of four dependent variables.

**Independent Variables**

**Strategic Fit I: Objective Congruence.** The first independent variable, *objectivecongruence*, looks at the similarity of partners’ objectives. It is a construct comprised of six survey items, four of which are rendered into two composite measures, and two of which are incorporated as individual items, in all, consisting of four total measures subject to Cronbach’s Alpha calculation. The two composite items are constructed in an analogous manner to some performance measures in that we require perceived partner-firm agreement across the items regarding objective congruence of partner-firms. The first composite measure combines two survey items that ask about the type of benefits each partner seeks: long-term versus short-term. From these two items we construct a conservative composite measure that is set equal to one only if the respondent indicates that both partners are not interested primarily in short term benefits—we interpret one partner-firm engaging in short-term thinking as not reflecting goal congruence, as well as both partners thinking short-term (which might, for example, precede untimely dissolution of the JV by one partner or other unilateral opportunistic behavior). When both partners are interested in long-term benefits, the value of the measure is set to one, and zero otherwise. The second composite item asks whether each partner is only interested in quick profits and reluctant to reinvest in the joint venture. When both the Chinese and American partners are perceived as not interested in quick profits and not reluctant to reinvest in the JV, this is coded as a one and zero otherwise—again we reject the idea of both partners being focused on quick profits and being reluctant to reinvest as congruence. The remaining two
survey items comprising this construct are 7-point Likert-type “agreement” scales (where 1 is completely disagree, 4 is neutral, and 7 is completely agree). They make the following two statements to respondents: “The JV partners have a shared strategic vision and goal for the JV,” and “The establishment of the JV is compatible with the investment and corporate strategies of both parties.” The Cronbach’s Alpha for this construct is 0.65, a number close to, but not quite, meeting our stated criterion for acceptance of 0.7. We nonetheless deem the level of this original construct’s Alpha to be acceptable (while admitting that this is partly owing to the fact that we have no suitable alternatives), and we use this construct as representative of objective congruence in our analysis. This original construct is used to test Hypothesis 1, regarding the increasing effects on performance of partners’ increasing objective congruence.

**Strategic Fit II: Resource Complementarity.** The construct labeled *resourcecomplement* measures the extent to which one partner’s lack of resources is compensated for by the other partner. The construct is comprised of nineteen composite measures, each of which is derived from two survey items. Unlike for *objectivecongruence* and similarly constructed measures, we are looking for complementarity: items where one partner is high while the other is low. When this is the case the measure is assigned a value of 1, and 0 otherwise. The following areas of resource complementarity are measured in this construct: management skills, branding, logistics, distribution network, financial management, human resources management, production facility/land, public/government relations, training (workers and managers--two items), unspecified distinctive resources, skill in managing resources, business acumen (i.e., one partner interested in learning about industrial processes versus the other in gaining management know-how), expertise in exploration, production know-how, equipment contribution, R&D
contribution, and marketing/sales contribution. When, for example, a respondent perceives that one partner is strong in financial management, while the other is weak in the same area (based on two survey items), a composite measure is set equal to one, and set to zero otherwise. The resulting composite items are then analyzed for reliability using Cronbach’s Alpha.

The construction of the “business acumen” item above involves building one measure from two distinct survey items to look at the implicit resource-assumptions inherent in having a particular partner-firm-level objective. In this approach, in one survey item the respondent indicates whether or not the objective of the American partner is to learn by gaining business experience in China—this assumes the Chinese partner has specific knowledge resources to share. In a separate item, if the respondent indicates that the objective of the Chinese partner is to acquire management know-how, the assumption is that the Chinese partner believes that the American partner has management know-how resources to share. This approach avers that partners perceive the existence of complementary resources via an articulation of their objectives. That is, one partner-firm’s goals are set partially according to perceived valuable resources possessed by another partner-firm. We set the value of the measure to 1 if the partners have complementary implicit resource assumptions. When the Cronbach’s Alpha is calculated for the construct resourcecomplement, the value is 0.91, indicating a reliable construct measuring overall resource complementarity. This construct is used to test Hypothesis 2, wherein we expect to detect positive effects of degree of resource complementarity on performance.

Culture Fit I: Culture similarity. We divide cultural similarity fit into two measurable categories, labeled nationalcultr and organizationcultr. The first measure, nationalcultr, is based on one survey item, which inquires directly about the clash of partner-firm’s national cultures. The
second measure, *organizationcult*, is also comprised of one survey item which asks respondents about the clash of partner-firms’ organizational cultures. Each item inquires regarding the extent to which differing national or corporate culture is perceived to cause conflict in the JV. We reversed the coding of these items to create positive measures wherein the value of the measure increases with increasing cultural compatibility. These factors are used to test Hypothesis 3, which avers that as cultural compatibility increases, JV performance increases.

**Culture Fit II: Managerial communication effectiveness.** *Managerialcommunic* is a construct that measures the perceived effectiveness of communications between managers. It is comprised of 5 survey items. The items ask about the extent of understanding of and agreement regarding communication between managers. For example, using a scale of 1 (No understanding/cooperation) to 7 (complete understanding/cooperation), two survey items ask about, respectively, understanding of and intention to cooperate with JV resolutions (agreed by the JV’s Board of Directors). Increasing perceived cooperation with and comprehension of Board resolutions by managers is taken as positive evidence of effective managerial communication. Another item inquires as to the extent to which the nature of managerial communications is formal (regular, year-end, and other routine meetings). We interpret increased use of routine meetings as reflecting comparatively more effective managerial communications. It is readily conceivable, however, to think of this measure as acting in the opposite sense to that proposed. That is, fewer meetings may reflect increasingly effective managerial communications in a JV. The effect on performance may be either positive or negative. For simplicity and consistency in this paper, we treat increased duration and numbers of scheduled, routine
meetings as a sign that managers are communicating comparatively more effectively than under decreased duration and numbers of routine meetings.

The last two of five items comprising the construct managerialcommunic are positively worded inquiries about communication effectiveness, and ask the respondent about the perceived effectiveness of problem solving for formal and informal communication (again using a 1-7 scale). The survey explains that formal communications include not only meetings as described above, but also written reports. Examples of informal communications are described as non-work related interactions between JV employees: coffee breaks, lunch, sports, extra-JV activities, socializing, and dining out. The five items described immediately above together yield a Cronbach’s Alpha of 0.72. The construct managerialcommunic is deemed suitable for inclusion in our analysis as an independent variable reflecting the effectiveness of communication. Our managerial communications construct tests Hypothesis 4, which predicts positive effects on JV performance.

Organizational Fit I: Equity Structure. We aver that the presence of a dominant partner (in terms of equity ownership) will increase performance of a JV because the decision making process will likely rarely, if ever, deadlock. Decisions will get made and we interpret this as better than the lack of forward progress associated with cycling in decision making processes. This measure, labeled dominantpartner, is set equal to 1 if either the Chinese or the American partner is identified as holding a majority (>50%) share of JV equity, and 0 otherwise. This construct is used to test Hypothesis 5, regarding the effects of a dominant partner (by equity ownership) on JV performance.
Organizational Fit II: Top Management Decision Making Effectiveness. We use a construct labeled *agreehires* to measure the extent to which top management agrees regarding the placement of top managers and board members into the JV from parent firms. Specifically, the extent of agreement regarding hiring the following mission-critical positions is measured: Board Members, General Manager/CEO, CFO, VP Marketing, VP Research & Development and VP Production. We use the extent of partner-agreement regarding top-management hiring decisions as evidence of a smoothly functioning, coordination cost-minimizing top administration in the JV—high performance in this arena. Harmonious decision-making is interpreted as effective decision making, admittedly an explicit assumption on our part. Given extensive contention regarding placements of top managers, then comparatively more managerial time, energy, and attention is consumed by the process of achieving agreement—opportunity costs are incurred—managers are decreasingly able to properly fulfill their primary duties. Also, lingering resentment from prior disagreements might incur sub-optimal reprisals in subsequent joint-decisions or, perhaps in the worse case involving voting for appointments, deadlock over successive ballots. We argue for the efficacy of mutually agreed-upon decisions (a positively-signed coefficient). A smoothly functioning decision making team incurs lower comparative costs versus a contention-driven decision making team. We interpret either a joint-parent-based appointment or an independent appointment by JV managers as evidence of harmonious decision-making in the affairs of a JV; decisions driven solely by one parent are viewed as potentially having comparatively greater negative consequences. Initially, for the ease of respondents, the survey coded distinct responses for the following situations: (a) the manager was hired by the American partner’s parent firm, (b) the manager was hired by the Chinese partner’s parent firm, and (c) the JV’s managers/Board were allowed to make the decision
independent of parent involvement. Respondents were told to select any and all choice(s) that applied. Since we are interested in measuring the extent of agreement between partners, the survey items are recoded as follows: from the six possible response permutations agreehires is set equal to 1 only if both JV parents jointly decided on the person to hire, or the JV’s managers were given independent control over the person to hire. Otherwise (one partner-firm made the hire) the measure is set equal to 0. These six recoded survey items are then subjected to Cronbach’s Alpha analysis to determine the extent to which they reflect the level of overall agreement between partners regarding hiring in the JV. The Alpha value is 0.8, which suggests that the measures as recoded reliably reflect the underlying construct of agreement regarding hiring top managers. This construct is used to test Hypothesis 6, which asserts the positive effects of top management agreement in hiring decisions on JV performance.12

**Control Variables**

**Age of the joint venture.** Older JVs, owing to their greater operating experience and familiarity with their partner-firm, suppliers and customers, might be expected to outperform relatively younger JVs. In order to control for this effect, we employ a measure comprised of each JV’s age from inception. The youngest JV in our sample is 4 years old, while the oldest is 32 years old (at the time of data gathering, the youngest JV in our sample was 2 years old). We label this control measure agejv.

**Involvement of the Chinese State in a Dominant Partner.** In order to control for possible positive effects of Chinese government involvement and influence on China-US JV-performance, we construct the control variable, chinastateinvolvd, which is a dummy variable, set equal to 1 if the Chinese State directly owns shares in the Chinese JV and that partner is identified as the
dominant partner in the JV. Otherwise, the variable is set to 0. We recognize state involvement as potentially occurring at any of local (city, town), regional (province) and national levels.

**Balance of Control.** This construct measures the extent to which the Chinese partner’s parent increasingly controls 6 areas of the JV as reflected by 6 survey items. The construct *balanceofcontrol* looks at respondents’ perceived (successful) assertion of authority by a partner over a particular area, regardless of equity stake held by one partner. The areas of the JV covered include each respondent’s perceptions of actual control over formulation of quality control standards, dividend decisions, employee training processes, research & development investment, public relations, and proportion of mid-level managers hired by a particular parent. This factor measures perceived “social” control over decision making in multiple areas and controls for the effects of strong individual personalities or strong culture-specific assertions of control by participants in JVs, which is not part of fit as discussed herein. We assert the possibility of an effect, but not the sign of the effect. The Cronbach’s Alpha is high at 0.88, suggesting a reliable construct for subsequent analysis. This construct, in addition to being a control variable, may shed additional light on the issues raised by Hypothesis 5 regarding the effects of a dominant partner. We coded the composite measure to be increasingly negative for ascendant Chinese control and increasingly positive for ascendant American control. Zero or near-zero values indicate balanced control. If significant, when the sign of coefficient for this factor is increasingly negative, ascendant American control positively affects performance, and as it becomes increasingly positive, increased Chinese control predicts increased performance. A near-zero coefficient value might reflect the importance of balanced informal control—an assertion of superior returns to unbalanced control would be cast into doubt.
Caveat: Diminishing Returns to highly asymmetric social control. We are concerned that there may be noise from the effects of diminishing returns to “over-balanced” social control by one partner. That is, one partner-firm or that firm’s JV team-members may feel so excessively excluded from decision making processes to the extent that they elect to minimize their meaningful participation or even quit a JV—negatively affecting performance. To control for this possibility, we estimate a parabola with an expected negatively signed coefficient by introducing the square of the construct balanceofcontrol, a term we label balancecontrolsqrd. The two constructs are not problematically correlated at Pearson’s r = -0.29. We deem this “squared-term” for degree of asserted control to be suitable for inclusion as a control variable.

Industry Controls. From a framework for industry-level controls developed for strategic management research by Dess, et al (1990:21), our approach falls into the “Multiple Industry Controls” category. We recognize Dess, et al’s (1990) assertion of an important limitation to our approach: “[Subjective] judgment [is] involved in selection of ‘critical’ environmental dimensions (21).” We examined a number of industry-level control variables, and none were significant in any models. We omit industry-level controls from our final models, presented below.\(^\text{13}\)

JV-level Control Variable: Number of Employees. We control for any effect on performance of increasing size of JVs with the variable numbremployees, which measures eight size categories of JVs, coded 1 through 8, from less than 50 employees to more than 1000 employees.

Controls for regional effects. Does JV performance vary by region? The differential availability of resources (natural, labor, materials supply) as well as regional variation in political and legal constraints within China suggest that controls for regional effects are appropriate. We employ
dummy control variables for four regions. Controls are set equal to 1 if the JV is located in a particular region. The base condition (all dummies equal to 0) includes several JVs that lie outside the four regions which comprise the bulk of our data: Beijing, Shanghai, Guangdong and Tianjin.

**Respondent Controls.** The possibility exists that respondents’ individual characteristics might affect their perceived performance of JVs. We control for respondent-level characteristics via four measures. The first measure, *jobposition*, captures whether the respondent is a top manager, assistant top-manager, or middle manager, and is an ordinal measure. The value of the measure decreases as managerial responsibility increases. The second respondent control is *yearsworked*, the number of years the respondent has worked for the JV. The third control for respondent attributes is *education*, which increases with education level through 4 ordered categories: primary school, secondary school, bachelor’s degree and master’s degree or higher. The fourth control is the age of the survey respondent (across 7 ordered categories), labeled *age*.\(^{14}\) Having described the construction of dependent, independent and control variables in some detail, the next section presents the summary statistics for our variables and discusses any associated issues. Table I summarizes the construction of all the variables.

### 5. DESCRIPTIVE STATISTICS

Table II presents the summary statistics for our measures. The table suggests that no problems exist regarding lack of adequate variation in the data. We note that the mean of the dummy variable *dominantpartner* seems to indicate that JVs in our sample are predominantly characterized by a dominant partner (86%). The remainder of the descriptive analysis does not
suggest any likely sources of problems with the data. We deem the data to be suitable for further
analysis. Table III presents the correlation matrix (using Pearson’s r) for all the variables.15

Table I--Summary of construction of variables

<table>
<thead>
<tr>
<th><strong>Construction of Variables</strong></th>
<th><strong>Dependent Variables</strong></th>
<th><strong>Independent Variables</strong></th>
<th><strong>Control Variables</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>satisfactperform</strong></td>
<td>Performance measure of the degree of satisfaction with the JV by combining six different measures of (perceived) satisfaction.</td>
<td><strong>objectivecongruence</strong></td>
<td>Age of respondent in years.</td>
</tr>
<tr>
<td><strong>trendperform</strong></td>
<td>Assessment of JV’s past 3 years of financial performance via respondents estimation of six financial measures</td>
<td><strong>resourcecomplement</strong></td>
<td>Measures the extent to which one partner’s lack of resources is compensated for by the other partner.</td>
</tr>
<tr>
<td><strong>overallcompetitiv</strong></td>
<td>Respondent’s perceived overall competitiveness of the venture vs. competition--combines seven different estimates of performance versus competition: management skill, production technology, production equipment quality, patent portfolio, product quality, distribution network, and quality of employees.</td>
<td><strong>organizationcult</strong></td>
<td>Measures the extent to which the respondent perceives conflict or tension between partner-firms' corporate cultures in the JV--Comprised of one survey item.</td>
</tr>
<tr>
<td><strong>decisionperform</strong></td>
<td>Measures the extent to which the decision structure of top management is perceived to be efficient.</td>
<td><strong>nationalcult</strong></td>
<td>Measures the extent to which the respondent perceives conflict or tension between partner-firms' home-country cultures in the JV--Comprised of one survey item.</td>
</tr>
<tr>
<td></td>
<td>Using eleven survey items it comprises an overall measure of perceived decision making performance in the JV.</td>
<td><strong>managerialcommunic</strong></td>
<td>Measures perceived effectiveness of communication between managers--combines five different communication measures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>dominantpartner</strong></td>
<td>Measures the extent to which one partner owns more than 50% equity share (i.e., not equal shares of 50%)--there exists a dominant partner in terms of equity structure.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>agreehires</strong></td>
<td>Measures the extent to which top management agrees regarding the placement of top managers and board members into the JV from parent firms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>agejv</strong></td>
<td>The age of the JV, in years, from its inception.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>chinastateinvolv</strong></td>
<td>=1 if the Chinese State directly owns shares in the Chinese JV and that partner is identified as a dominant partner in the JV. Otherwise, the variable is set to 0. We recognize state involvement as potentially occurring at any of local (city, town), regional (province) and national levels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>balanceofcontrolsqrd</strong></td>
<td>balanceofcontrol Controls for possibly diminishing returns to extremely one-sided balance of control in a JV.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>numemplos</td>
<td>Measures eight size categories of JVs by category, from less than 50 employees to more than 1000 employees.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>beijingregn</strong></td>
<td>=1 if the JV is located in the Beijing region.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>guangdongregn</strong></td>
<td>=1 if the JV is located in the Guangdong region.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>shanghaiaregn</strong></td>
<td>=1 if the JV is located in the Shanghai region.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>tianjinregn</strong></td>
<td>=1 if the JV is located in the TianJin region.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>jobposition</strong></td>
<td>The measure decreases from 3 to 1 as managerial seniority of respondents increases.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>yearsworked</strong></td>
<td>Total years worked at the JV.</td>
</tr>
</tbody>
</table>
Table II--Summary statistics for dependent, independent and control variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>satisfactperform</td>
<td>112</td>
<td>3.714</td>
<td>0.670</td>
<td>1.333</td>
<td>5.000</td>
</tr>
<tr>
<td>trendperform</td>
<td>107</td>
<td>4.144</td>
<td>1.200</td>
<td>1.000</td>
<td>8.000</td>
</tr>
<tr>
<td>overalcompetitiv</td>
<td>110</td>
<td>5.198</td>
<td>0.864</td>
<td>2.857</td>
<td>7.000</td>
</tr>
<tr>
<td>decisionperform</td>
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<td>0.827</td>
<td>1.636</td>
<td>7.000</td>
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<td>0.734</td>
<td>1.250</td>
<td>6.000</td>
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<td>0.220</td>
<td>0.276</td>
<td>-0.059</td>
<td>0.895</td>
</tr>
<tr>
<td>organizationcultr</td>
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<td>5.981</td>
<td>1.421</td>
<td>2.000</td>
<td>7.000</td>
</tr>
<tr>
<td>nationalcultr</td>
<td>107</td>
<td>5.879</td>
<td>1.478</td>
<td>2.000</td>
<td>7.000</td>
</tr>
<tr>
<td>managerialcommunic</td>
<td>112</td>
<td>5.171</td>
<td>0.775</td>
<td>3.400</td>
<td>6.600</td>
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<td>112</td>
<td>0.857</td>
<td>0.351</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>agreehires</td>
<td>112</td>
<td>0.217</td>
<td>0.314</td>
<td>-0.333</td>
<td>0.667</td>
</tr>
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<td>agejv</td>
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<td>10.963</td>
<td>5.126</td>
<td>4.000</td>
<td>32.000</td>
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<td>chinastateinvolvd</td>
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<td>0.083</td>
<td>1.990</td>
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<td>balancecontrolsqrdf</td>
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<td>3.932</td>
<td>7.108</td>
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<td>36.000</td>
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<td>numbremployees</td>
<td>112</td>
<td>4.366</td>
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<td>8.000</td>
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<td>beijingregn</td>
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<td>0.318</td>
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<td>1.000</td>
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<td>guangdongregn</td>
<td>110</td>
<td>0.282</td>
<td>0.452</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>shanghairegn</td>
<td>110</td>
<td>0.273</td>
<td>0.447</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>tianjinregn</td>
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<td>0.091</td>
<td>0.289</td>
<td>0.000</td>
<td>1.000</td>
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<td>jobposition</td>
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<td>2.438</td>
<td>0.792</td>
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<td>3.000</td>
</tr>
<tr>
<td>yearsworked</td>
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<td>4.000</td>
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<td>2.345</td>
<td>1.571</td>
<td>1.000</td>
<td>7.000</td>
</tr>
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<td>------</td>
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</tr>
<tr>
<td>satisfactperform (01)</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>trendperform (02)</td>
<td>0.2516</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>overallcompetitiv (03)</td>
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<td>decisionperform (04)</td>
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<td>-0.074</td>
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</tr>
<tr>
<td>objectivecongruence (05)</td>
<td>0.3802</td>
<td>-0.021</td>
<td>0.3091</td>
<td>0.1604</td>
<td>1</td>
</tr>
<tr>
<td>resourcecomplement (06)</td>
<td>-0.210</td>
<td>0.0701</td>
<td>0.0251</td>
<td>-0.41</td>
<td>-0.022</td>
</tr>
<tr>
<td>organizationcultr (07)</td>
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<td>-0.092</td>
<td>-0.106</td>
<td>-0.096</td>
<td>0.2644</td>
</tr>
<tr>
<td>nationalcultr (08)</td>
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<td>-0.019</td>
<td>-0.004</td>
<td>0.2143</td>
</tr>
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<td>managerialcommun (09)</td>
<td>0.1261</td>
<td>-0.179</td>
<td>0.1104</td>
<td>0.0776</td>
<td>0.5379</td>
</tr>
<tr>
<td>dominantpartner (10)</td>
<td>-0.173</td>
<td>-0.106</td>
<td>-0.205</td>
<td>-0.041</td>
<td>-0.174</td>
</tr>
<tr>
<td>chinlinesteelinvolv (11)</td>
<td>0.0713</td>
<td>0.047</td>
<td>-0.096</td>
<td>-0.012</td>
<td>0.0459</td>
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<tr>
<td>agreehires (12)</td>
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<td>0.1385</td>
<td>-0.099</td>
<td>-0.066</td>
<td>0.1116</td>
</tr>
<tr>
<td>age (13)</td>
<td>0.0738</td>
<td>0.1593</td>
<td>0.0746</td>
<td>-BE-04</td>
<td>0.1821</td>
</tr>
<tr>
<td>balanceofcontrol (14)</td>
<td>0.1384</td>
<td>0.1644</td>
<td>-0.228</td>
<td>-0.342</td>
<td>-0.171</td>
</tr>
<tr>
<td>balanceofcontrolqrd (15)</td>
<td>-0.158</td>
<td>0.1242</td>
<td>0.1214</td>
<td>0.175</td>
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</tr>
<tr>
<td>numbremployees (16)</td>
<td>0.0756</td>
<td>0.1788</td>
<td>0.1751</td>
<td>0.1012</td>
<td>-0.02</td>
</tr>
<tr>
<td>beijingregn (17)</td>
<td>-0.107</td>
<td>0.2579</td>
<td>-0.047</td>
<td>0.001</td>
<td>0.1596</td>
</tr>
<tr>
<td>guangdongregn (18)</td>
<td>0.1608</td>
<td>-0.237</td>
<td>0.1301</td>
<td>-0.073</td>
<td>0.0945</td>
</tr>
<tr>
<td>shanghairegn (19)</td>
<td>0.1203</td>
<td>0.1036</td>
<td>-0.038</td>
<td>-0.044</td>
<td>-0.095</td>
</tr>
<tr>
<td>tianjinregn (20)</td>
<td>-0.251</td>
<td>-0.171</td>
<td>-0.02</td>
<td>0.2051</td>
<td>-0.166</td>
</tr>
<tr>
<td>jobposition (21)</td>
<td>-0.029</td>
<td>-0.109</td>
<td>0.0563</td>
<td>-0.238</td>
<td>0.161</td>
</tr>
<tr>
<td>yearworked (22)</td>
<td>-0.042</td>
<td>0.0514</td>
<td>-0.048</td>
<td>0.0055</td>
<td>0.0302</td>
</tr>
<tr>
<td>education (23)</td>
<td>-0.221</td>
<td>0.018</td>
<td>-0.084</td>
<td>0.037</td>
<td>-0.015</td>
</tr>
<tr>
<td>age (24)</td>
<td>0.174</td>
<td>0.1126</td>
<td>0.199</td>
<td>0.1477</td>
<td>0.2539</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(20)</td>
<td>(21)</td>
<td>(22)</td>
<td>(23)</td>
</tr>
</tbody>
</table>

---

Table III--Correlation matrix
The highest absolute magnitude of any correlation coefficient is 0.708, indicating an (unsurprising) strong association between corporate culture (organizationcultr) and national culture (nationalcultr). We deem this not problematic as it is below the threshold of an absolute magnitude of 0.8. The next largest correlation coefficient is 0.571 between respondents’ yearsworked and respondent age, an unsurprising relationship. The third highest correlation is 0.538, between two independent variables, managerialcommunic and objectivecongruence. The next highest correlation is 0.505, between two dependent variables, overallcompetitiv, and decisionperform. We interpret these relationships as not problematic for our analysis. Only 4 of 276 relevant correlation coefficients have an absolute value of 0.5 or higher--the regression analysis may proceed with no cause for worry regarding overly correlated factors.

6. REGRESSION ANALYSIS RESULTS

Table IV, below, presents the results of ordinary least squares regression analysis using all four of our dependent variable performance measures in four separate regressions. Owing to missing data, the number of complete cases in the models varies slightly from n=77 (Model 2) to n=80 (Models 1 and 4). Model 1’s dependent variable is satisfactperform, a measure of perceived satisfaction with JV performance. Model 2’s dependent variable, trendperform, reflects respondents’ perception of the JV’s financial performance over the past three years. Model 3’s dependent variable, overallcompetitiv, is a construct reflecting multiple different perceived aspects of the relative competitiveness of the JV versus other industry players. Model 4’s dependent variable, decisionperform, measures the extent to which decision making in the JV is perceived as effective by respondents.
Table IV--Regression analysis results: Effects of fit-related factors on JV performance

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dep Var:</td>
<td>satisfactperform</td>
<td>trendperform</td>
<td>overallcompetitiv</td>
<td>decisionperform</td>
</tr>
<tr>
<td>Number of obs</td>
<td>80</td>
<td>77</td>
<td>79</td>
<td>80</td>
</tr>
<tr>
<td>F(dfmodel, dfresid.)</td>
<td>2.02* (20, 59)</td>
<td>1.82* (20, 56)</td>
<td>2.08* (20, 58)</td>
<td>1.33 (20, 59)</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.4063</td>
<td>0.3943</td>
<td>0.4182</td>
<td>0.3105</td>
</tr>
<tr>
<td>Coef. (Std. Err)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>objectivecongruence</td>
<td>0.267 * (0.149)</td>
<td>0.231 (0.277)</td>
<td>0.342 * (0.189)</td>
<td>0.175 (0.177)</td>
</tr>
<tr>
<td>resourcecomplement</td>
<td>-0.434 (0.331)</td>
<td>-0.723 (0.612)</td>
<td>-0.083 (0.409)</td>
<td>-0.303 (0.392)</td>
</tr>
<tr>
<td>organizationcultr</td>
<td>-0.098 (0.084)</td>
<td>-0.010 (0.152)</td>
<td>-0.113 (0.103)</td>
<td>-0.010 (0.099)</td>
</tr>
<tr>
<td>nationalcultr</td>
<td>0.108 (0.076)</td>
<td>-0.059 (0.136)</td>
<td>0.068 (0.094)</td>
<td>-0.010 (0.090)</td>
</tr>
<tr>
<td>managerialcommunic</td>
<td>0.103 (0.152)</td>
<td>0.176 *** (0.276)</td>
<td>-0.049 (0.189)</td>
<td>-0.040 (0.180)</td>
</tr>
<tr>
<td>dominantpartner</td>
<td>-0.178 (0.229)</td>
<td>-0.213 (0.409)</td>
<td>-0.236 (0.284)</td>
<td>-0.054 (0.271)</td>
</tr>
<tr>
<td>agreehires</td>
<td>-0.157 (0.280)</td>
<td>0.839 (0.511)</td>
<td>0.071 (0.352)</td>
<td>-0.486 (0.331)</td>
</tr>
<tr>
<td>agejv</td>
<td>0.003 (0.016)</td>
<td>0.018 (0.030)</td>
<td>0.014 (0.021)</td>
<td>-0.021 (0.019)</td>
</tr>
<tr>
<td>chinastateinvolvd</td>
<td>0.159 (0.196)</td>
<td>0.595 * (0.358)</td>
<td>-0.113 (0.244)</td>
<td>0.147 (0.231)</td>
</tr>
<tr>
<td>balanceofcontrol</td>
<td>0.045 (0.043)</td>
<td>0.153 * (0.080)</td>
<td>-0.088 † (0.054)</td>
<td>-0.115 * (0.051)</td>
</tr>
<tr>
<td>balancecontrolsqrd</td>
<td>0.000 (0.000)</td>
<td>0.035 (0.024)</td>
<td>0.021 (0.017)</td>
<td>0.016 (0.016)</td>
</tr>
<tr>
<td>numbremployees</td>
<td>0.077 * (0.038)</td>
<td>0.110 (0.069)</td>
<td>0.085 * (0.047)</td>
<td>0.042 (0.045)</td>
</tr>
<tr>
<td>beijingregn</td>
<td>0.591 (0.703)</td>
<td>2.212 * (1.255)</td>
<td>0.577 (0.868)</td>
<td>-0.327 (0.832)</td>
</tr>
<tr>
<td>guangdongregn</td>
<td>0.824 (0.700)</td>
<td>1.613 (1.246)</td>
<td>1.065 (0.864)</td>
<td>-0.315 (0.828)</td>
</tr>
<tr>
<td>shanghairegn</td>
<td>0.885 (0.685)</td>
<td>2.086 * (1.218)</td>
<td>0.753 (0.846)</td>
<td>-0.186 (0.811)</td>
</tr>
<tr>
<td>tianjinregn</td>
<td>0.345 (0.736)</td>
<td>0.625 (1.307)</td>
<td>0.575 (0.908)</td>
<td>0.075 (0.871)</td>
</tr>
<tr>
<td>jobposition</td>
<td>-0.107 (0.108)</td>
<td>-0.056 (0.200)</td>
<td>0.151 (0.138)</td>
<td>-0.268 ** (0.128)</td>
</tr>
<tr>
<td>yearsworked</td>
<td>-0.030 (0.020)</td>
<td>-0.059 (0.038)</td>
<td>-0.061 * (0.026)</td>
<td>0.001 (0.024)</td>
</tr>
<tr>
<td>education</td>
<td>-0.247 (0.259)</td>
<td>0.198 (0.489)</td>
<td>-0.426 (0.332)</td>
<td>0.226 (0.306)</td>
</tr>
<tr>
<td>age</td>
<td>0.059 (0.060)</td>
<td>0.197 * (0.109)</td>
<td>0.227 *** (0.076)</td>
<td>0.078 (0.071)</td>
</tr>
<tr>
<td>constant</td>
<td>2.475 * (1.210)</td>
<td>4.392 (2.226)</td>
<td>4.409 *** (1.514)</td>
<td>4.889 *** (1.432)</td>
</tr>
</tbody>
</table>

* p≤0.05  
**p≤0.01  
***p≤0.005  
† (near-significant) p≤0.0525
Our first reflection on the analysis is that Model 4’s F-Statistic, at a standard of $p \leq 0.05$, does not allow us to confidently reject the hypothesis that all coefficients are equal to zero. Our dependent variable in this case, decisionperform, is not well predicted by our independent variables. The R-Squared for Model 4 is 0.31, the lowest of all the models. The other three models (1, 2 and 3) have sufficiently large F-Statistics to confidently reject the hypotheses that all coefficients have a zero-value ($p \leq 0.05$). For Models 1, 2 and 3, respectively, the R-Squared figures are 0.41, 0.39, and 0.42. A substantial amount of variation in JV performance is explained by our independent variables. Models 1, 2, and 3 are suitable for further discussion and interpretation, while Model 4, regrettably, is not.

For Model 1, which predicts perceived satisfaction with JV performance, the effect of objective congruence is significant at a level of $p \leq 0.05$ and signed as predicted. Hypothesis 1 is the only test assertion supported by Model 1. Considering the range of the variable, 1.25 to 6.0, the impact of the magnitude of the coefficient on performance is substantial. Among control variables in Model 1, the only significant factor ($p \leq 0.05$) is numbremployees, a JV-size measure, but the effect is largely insubstantial, with a coefficient magnitude of 0.077 (the data values range from 1 to 8).

In Model 2, as the effectiveness of managerial communication increases (managerialcommunic) managers’ perceptions of financial performance over the last 3 years (trendperform) decreases ($p \leq 0.005$), a significant finding that suggests Hypothesis 4 acts opposite to the direction asserted—lower duration and numbers of routine managerial meetings (formal communications) seem to predict higher JV performance. The coefficient magnitude is substantial (-0.766), suggesting the effect of this factor on performance is strong (across a data range of 3.4 to 6.6).
*Agreehires*, which measures the extent of agreement among managers regarding key position hiring, is significant and positively signed, a finding that supports the veracity of Hypothesis 6 regarding the positive effects of harmonious decision making (coefficient magnitude of 0.929, acting on a data range of -0.333 to 0.667—a substantial effect). Also noteworthy in Model 2 are several other significant control factors. The control variable, *balanceofcontrol*, is significant and signed so as to suggest increasing Chinese partner control predicts increased performance. This finding supports Hypothesis 5, regarding returns to control by a dominant partner. JVs from the Beijing and Shanghai region also significantly predict higher performance relative to other regions. The *age* of respondents is a significant predictor of perceived performance. Finally, Model 2 is the only model where involvement of the Chinese state with a dominant partner is significantly and positively associated with prior increased performance.

Turning to Model 3, *objectivecongruence* predicts perceived overall competitiveness of the JV (*overallcompetitiv*) at a level of p≤0.05, is signed as predicted and boasts a moderately large coefficient (equal to 0.342, acting on a data range of 1.25-6). This factor has a moderate impact on performance as measured by perceived overall competitiveness of the JV. Among control variables in Model 3, the coefficient of *balanceofcontrol* is near-significant, but its magnitude is small, suggesting that perceived predominance of control by one partner (irrespective of equity stake) does not substantially impact performance as measured by perceived overall competitiveness. Model 4, as noted above, does not predict decision making performance better than a constant (coefficients are not significantly different from 0) and is thus excluded from the discussion.
Scanning across the rows of coefficients in Table IV for significance and consistency of coefficient signs is somewhat illuminating (using only Models 1, 2 and 3). Objective congruence is clearly the most consistently significant factor predicting 2 of 3 performance indicators (from the useable models 1, 2, and 3) at a level of $p \leq 0.05$. These two models have coefficients that are signed as predicted by Hypothesis 1. Among other factors, managerial communication apparently matters, and is a highly significant predictor only of perceived financial performance trends, but the sign of the coefficient is opposite that predicted. Agreehires, a measure of managerial harmony regarding whom to hire, is a significant predictor of the same performance measure. More interestingly, we note that financial performance is significantly predicted by informal control (measured by balance of control) that is increasingly slanted towards the Chinese partner, while the overall competitive performance of a JV versus its competitors improves slightly as the American partner increasingly controls the JV via informal means. The effects of fit on performance are different for different measures of performance. Further, informal control has an effect on performance while formal control (measured by dominant partner), apparently, does not. The effect of asymmetric control by one partner-firm on performance is supported (Hypothesis 5), but not as proposed, via formal/legal means. Rather, informal controls have a significant effect on performance, but the sign of the effect is inconsistent across types of performance measure.

7. ISSUES, CONTRIBUTIONS, DIRECTIONS

Using a sample of China-U.S. JVs, our study tests a model that predicts JV performance as a function of three categories of fit: strategic, organizational and cultural. Using an empirical approach that recognizes the diversity inherent in definitions of both performance and fit, we test
a complete model of JV performance by scrutinizing six distinct varieties of fit, two from each of
the three above-mentioned fit-categories. The model also takes into account multiple salient
control factors in order to offer a reasonable, largely complete empirical picture of the main
hypothesized effects. From our examination of six different types of strategic fit, we find that
only the congruence of objectives (a form of strategic fit) consistently matters for two types of
performance measure: perceived satisfaction with JV performance, and perceived overall
competitiveness of a JV. Resource complementarity, cultural factors, and the presence of a
dominant equity-owning partner do not impact performance in significant ways. Effectiveness of
managerial communication, and top management agreement regarding important hires matter
(regarding predicting perceived past financial performance trends), but managerial
communications efficacy has a negative effect, suggesting that high performance is associated
with fewer meetings and interactions between JV participants. Depending on how performance is
defined, different aspects of “fit” matter. Hypotheses 1 (objective congruence) and 6 (agreement
regarding hiring) are most strongly supported, while there is some evidence that Hypothesis 4
(the efficacy of managerial communication) affects performance, though not in accord with our
prediction.

Our empirical results are surprisingly Spartan, especially given the attention that the notion of
“fit” has received in the academic literature. We interpret these findings as evidence that JVs can
and do succeed without necessarily meeting the demands of multiple stringent criteria. Notably,
organizational and cultural fit seem to matter less than strategic fit, specifically objective
congruence. We are puzzled that resource complementarity does not seem to matter—one
possible explanation is that a high degree of complementarity (as we measure it, spanning many areas) may not be necessary, but complementarity in one or two key areas may drive this factor.

**Issues**

Although our study has offered some interesting insights into the fit-related determinants of JV performance, there remain several limitations to our study. Our findings may be limited in generality owing to (1) our sample comprising China-U.S. JVs, and (2) our including only JVs that have operated for at least two years. The veracity of Model 4, with a dependent variable designed to reflect decision making performance in JVs is highly doubtful. A more accurate method of measuring this construct may be needed, perhaps through the use of additional or different measures. Additionally, our sample size is somewhat small, though sufficient for the purposes of our analysis. A larger sample might help us to detect additional significant effects. Finally, though we sampled JVs from four major regions of industrial activity in China, the situation there is far from static, and a future survey could constructively contribute to refining our results by sampling more regions in China.

**Contributions and Directions**

Generally, our study identifies which types of fit in JVs play a more significant role in determining four distinct aspects of performance. From a managerial perspective, we offer evidence that there can be flaws in a JV (i.e., imperfect fit of one JV partner to another) and it can still succeed. Some areas are more sensitive to flaws than others--focusing on objective congruence among JV partners seems warranted by the results. Of the other fit-areas we tested, organizational and cultural factors seem more tolerant of flaws in fit between partners in JVs,
with the exceptions of the effects of (a) managerial communications efficacy (though in an unexpected way), and (b) agreement regarding hiring on perceived financial performance. Which partner exerts more informal control over the JV has a significant effect on performance, but its direction depends on which performance measure we use.

From a scholarly view, previous work in the study of the effects of different types of “fit” on JV performance has been somewhat piecemeal in nature; rigorous statistical analysis seems the exception rather than the rule. Case-based studies, while useful for developing theory, do not offer substantial generality of findings. Existing work also seem over-focused on ex-ante negotiation process efficacy rather than operating performance over time. Our work employs a statistical analysis, and adds value to the debate by utilizing a reasonably (geographically) diverse convenience sample of U.S-China JVs that have been operating for some time in China.

Our study, via a survey of extant literature, identifies three types of fit—strategic, cultural and organizational—and empirically tests two distinct constructs for each fit-type. Via our method and models, we acknowledge the diversity of definitions of fit as well as the diversity of ways to measure performance. Our approach was to test for significant factors (ceteris paribus) with multiple relevant controls in order to determine which ones matter versus the others—in this we were successful. Our findings suggest that some of the literature espousing the absolute necessity of many variables impacting performance of JVs may be overstating the number of key success factors (e.g., Douma et al 2000; Buchel 2002). We find that the only near-universally confirmed performance-enhancing factor is that of objective congruence, part of strategic fit. The effectiveness of managerial communication (an aspect of cultural fit) is significant, but the direction of this factor’s action on performance is counter to our arguments—our analysis hints
that this factor is worthy of further study. Also, agreement among JV participants from different partner-firms regarding hiring, an organizational fit-related factor affects performance positively, as predicted. Dominant informal control, as noted, also plays a role, though the direction of its effects remains as yet unclear. Interpreted generously, our analysis identifies four important factors in all three of our fit categories: strategic fit (via objective congruence—strongly supported), and organizational fit (via agreement regarding hiring—moderately supported, and informal dominance—weakly supported). In the realm of cultural factors, lack of conflict driven by national and organization-level differences apparently does not impact performance, while the nature of managerial communications does, although in a surprising manner--fewer contacts suggest increased performance. This finding might be explained by decreased costs incurred by holding fewer meetings. The work of scholars who espouse the necessity of multiple sources of fit for the achievement of high performance is partly confirmed, but two typically accepted factors are called into question by our work, notably resource complementarity and cultural similarity. Our work fails to confirm widespread, strict multiple causality, but does identify specific key factors associated with high performance. More work in this area should shed additional light on questions of fit, but, based on our results, the notion that many sources of fit must concurrently exist for high performance to occur seems questionable. Further work in understanding the effects of fit-related factors seems warranted.
References


Endnotes

1 Some scholars look at four or more factors (e.g., Douma et al, 2000), but treat only one or two of the three factors we assert the literature identifies as critical.

2 By focusing our discussion of the literature on papers discussing fit and JV performance, we usefully narrow the universe of our citations. A number of notable, foundational works looking at JVs that are not, however, explicitly concerned with fit bear mentioning as the basis of current research on fit, which we discuss in detail in the main text. One core work, Anderson and Gatignon (1986) looks at the determinants of foreign entry mode. Teece (1981) examines far-sighted efficiency of governance safeguards under a transaction cost lens when the activity is sharing knowledge between international partner-firms. Both articles look at the determinants of governance and assume performance is high. This is a common shortcoming of early analyses, but their intent was to shed light on the bases of governance choice. Hennart (1988; 1991) advances thinking about JVs by microanalytically looking at two bases for market failure that JVs serve to remedy: scale and link JVs both solve different market failure scenarios. Kogut and Zander (1992) assert a “social community” effect over Hennart’s more Spartan (more farsighted) logic: social network-based knowledge recombination within the firm competes with the need to collaborate between JV partner-firms—the market for collaboration with outsiders is considered thin. Despite drawbacks, Kogut and Zander’s analysis of important knowledge-based contingencies is valuable and sheds some light on how successful JVs operate. More recently and more in the spirit of our work, Hennart and Zeng (2002) showed that cross-cultural differences affect JV longevity (where longevity proxies performance). Dhanaraj and Beamish (2004) look at the effects of different equity ownership structures, also on longevity. Longevity is a good measure of performance, but it is not the only one. Although focused on our independent variables of interest, the pioneering antecedent literature noted above generally neglects to
measure performance in a simple, meaningful cross sectional sense, e.g., financial outcomes after 3 years of JV operations, an issue addressed by our work.

3 Owing to a growing, fluid job market between the U.S. and China, there is increasing lack of clarity regarding the characteristics of a modern “Chinese” manager as contrasted to an “American” manager.

4 Historically, the example JV under discussion reflects issues encountered mostly in the early days of Western-Chinese alliances—the authors have no desire to promote an inappropriate stereotype. This JV operated approximately from 1991-1993. Present-day alliances may not experience these specific issues to such a severe degree as indicated in our example. Improvements in enforcement of contract law and evolution of common practice surrounding JVs in recent years have muted the severity of this issue. It nonetheless stands as a clear example of incongruent objectives between partners.

5 Contrary to Chen, Dunning (1980) sees this as resource-seeking behavior, but only amid part of a larger tapestry of causality employing multiple theoretical perspectives. For China we expect that a large fraction of JVs are driven by resource-seeking—U.S.-Chinese JVs should be ripe with varying degrees of resource complementarity.

6 High commitment to technology transfer is also found to be associated with an employee’s likelihood of retention in the joint venture. Probability of retention of employees, like longevity of a JV, is an interesting, if unconventional measure of JV performance. By contrast, our measures tend towards a more cross-sectional view of performance—this allows us to incorporate substantial detail in our model, as well as to create reliable constructs for underlying factors.

7 Burt (1992), among others, has extensively documented the existence and influence of informal control structures in organizations.
We view JV longevity or probability of dissolution, respectively per Barkema, et al (1996) and Park and Ungson (1997; 2001), as also related to the strategic view.

In a preliminary model, we created a dummy control variable set equal to 1 only if the respondent was hired by the JV management (and not by one or another partner-firm). This factor was never significant in any early models, so it was dropped from the analysis. Measured as noted, the origin of a respondent has no measurable effect on his/her assessment of JV performance.

If the JV had been in existence for less than three years, we asked for the perceived trend over the period of its existence, which is never less than two years for any JV in our sample. We asked respondents to report regarding gross sales and net profits before taxes. The abbreviations ROI, ROA and ROS mean, respectively, return on investment, return on assets, and return on sales. Again, respectively, our team explained that these financial ratios were defined as fractions: net profits divided by capital invested, net profits divided by total assets, and net profits divided by sales (less commissions).

“Business acumen” is intended as a convenient placeholder term, for the particular resource complementarity described in the main text. The authors do not intend to assert a definitive meaning for the term.

See also Nickerson and Zenger (2004) for regarding choice of authority-based decision making versus consensus-based decision making in organizations—not including, however, JVs.

The dummy controls we tested for industry-effects included whether or not a JV was in an “old technology” industry (clothing, textiles or food), and whether or not a JV transitioned from an old technology industry to a new technology industry (anything except textile, clothing or food). Remnants of the old technology industry might have a persistent (negative?) effect on performance, e.g., unused productive assets still carried on the books or taking up space.
Unsuccessful transitions from old to new technology industries by managers and workers, and/or lack of managerial expertise in the new technology arena might also impact JV performance. We also examined individual industry control dummies for eight distinct industries plus an “other industry” category. The industries tested included electronics/communications, textiles, clothing, transportation, electrical machinery, food machinery, chemical/medical, and construction. None were significant in any models and have been excluded from our final models, presented below.

14 A fifth respondent-level control, gender of the respondent, is omitted from the final models as there was never any hint of significance for this factor in any of the models we tried. See also footnote 9 for description of a similarly omitted control variable for respondent origin (comes from a partner-firm versus hired independently by the JV).

15 In addition to the correlation matrix shown in Table III, which utilizes all the available data to calculate Pearson’s $r$, we calculated the same matrix using pairwise deletion for cases with missing data—a somewhat more conservative approach to obtaining correlation coefficients. The results are substantively highly similar to the matrix shown.

16 For thoroughness, we modeled the data in several different ways, including allowing for the possibility of interaction effects between various factors. We created an interaction term combining JV age ($age$) with each of our test factors (thanks to Lihua Wang, San Francisco State University, for this suggestion). Increasing JV maturity might compound the effects of our test factors owing to effects from comparatively greater operating experience for older JVs. No such distinct effects were detected. We further sought to identify important interactions, specifically, between the two measures of fit within each fit-category. For strategic fit, for example, we created an interaction term that multiplied objective congruence by resource complementarity to ask if a combination of fit factors is required for high performance. The results from models incorporating all interaction effects support one of our primary assertions: a high degree of fit across a large number of fit-types may not be necessary to achieve high performance. For the few
interaction terms (across all three fit-categories) that are statistically significant, the magnitude of the estimated coefficient is very small relative to the range of the data, suggesting miniscule, if any, effects. The majority of interaction term coefficients are not statistically significant.