

INTER-PARTNER FIT AND PERFORMANCE IN CONSTRUCTION JOINT VENTURE

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ABSTRACT

While the linkage between inter-partner fit and joint venture performance has been loosely articulated by previous researchers, there was a lack of conceptualization and operationalization for inter-partner fit. Derived from the thoughts of strategic fit and organizational fit from management theories, this paper argued that inter-partner fit is a multidimensional concept consisting of the compatibility among the partners' goals, complementary contribution of critical resources, and the coherence of partners' culture. Higher level of inter-partner fit indicates a better joint venture performance. Data of 41 construction joint venture projects in Hong Kong were collected and analyzed for testing the hypotheses. Results suggest that cultural coherence could be better interpreted by two factors: cultural similarity and cultural synergy. The positive relationships between partners' goal compatibility, complementary resource, cultural synergy and construction joint venture (CJV) performance have been supported. Inter-partner fit explained 31-37% of CJV performance variance. Theoretical and managerial implications were discussed.

KEY WORDS

Construction Joint Venture (CJV), Performance, Inter-partner Fit, Survey, Hong Kong.

INTRODUCTION

Construction firms often adopt joint ventures to carry out construction projects, so as to share risks, resources and capital which are unaffordable for a single firm. International contractors use JVs as an efficient method to enter new construction markets, especially in emerging economies; while local companies commonly use them as a way to learn new technologies. Despite the popularity of CJVs, their performances were varied: e.g., Sridharan (1995) found that 40% of CJVs in Singapore MRT construction project were rated as unsatisfactory; Hung et al. (2002) found about 20% of CJVs in HK New Airport project had less than expected performance. What critical factors cause the varied performance?

While researchers (e.g., Bing et al. 1998) have identified and discussed risk factors influencing CJV performance, few has tried to explain the underlying relationships.

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Mohamed (2003) has modeled the effects of key processes (e.g., partner selection, venture formation, and operation) on CJV performance. Sillars and Kangari (2004) have tested the impacts of pre-operational factors on CJV success. Despite their efforts, there is no clear explanation for the underlying reasons between critical risk factors and joint venture performance.

To fill this gap, we investigated how and to what extent inter-partner fit affects CJV performance. The importance of fit or match between partners in determining JV performance has been revealed by many researchers. However, the concept was vaguely and loosely discussed. Many notions were used, such as organizational climate similarity (Fey and Beamish 2001), inter-partner complementarity (Hill and Hellriegel 1994) and organizational fit (Inkpen and Currall 1998). The loose discussions produced conflicting results in previous works, which make it difficult for reconciling theoretical explanations.

We adopt the notion of “inter-partner fit” (e.g., Yan and Duan 2003) here, given the broad coverage of “fit” concept and its trace from classical management thoughts. We will achieve three objectives: (1) to define inter-partner fit as a theoretical concept and to operationalize the concept; (2) to develop the hypotheses between inter-partner fit and CJV performance; and (3) to test the hypotheses in a real context, i.e., project-based construction joint ventures. We start from the theoretical foundation, and then generate the hypotheses. The empirical testing is introduced afterward. Finally the results are discussed and concluded.

THEORETICAL FOUNDATION AND HYPOTHESES

“FIT” IN PREVIOUS WORKS

“Fit” is a classic concept in management and organization theories. Lawrence and Lorsch (1967), for example, argues that organizations whose internal structures best fit the external environmental demands will achieve superior performance, which constitutes the core argument in contingency theory. The alignments between strategies and external environment, strategies and organizational structure, are the basic rules in formulating business strategies (Venkatraman 1989).

In joint venture research, Hill and Hellriegel (1994) suggested a positive relationship of inter-partner complementarity and JV performance, but they found no supports in their sample. Fey and Beamish (2001) examined the relationships between parent firms’ climate similarity and JV performance and found partial supports. Yan and Duan (2003) discussed inter-partner fit through four dimensions (i.e., strategic objectives, resources, operating policies, bargaining power and control) and explored their performance effects through four case studies. Despite their efforts, there is still a lack of consistency (both the notion of fit and the empirical results) in the previous works, which thus limits the explanation and further theoretical building and testing.

DEFINING INTER-PARTNER FIT & CJV PERFORMANCE

Venkatraman (1989) has summarized that “fit” concept was multi-dimensional and a lack of clarification would induce misunderstanding. We define “inter-partner fit” as the degree to which partner firms are compatible with each other in a cluster of variables. While there are

many variables describing firm characteristics, we argue that goals, resources and culture are three core components of partner firms in a JV. These three dimensions derive from various theoretical approaches, such as open system theory, resource-based view of the firm (e.g., Barney 1991), and culture research (e.g., Hoftstede 1980). Consequently, goals compatibility, resources complementarity and cultural coherence constitute the core components for the “fit” between partners.

CJV in this research refers to a new entity formed by two or more contractors for the purpose of tendering for and carrying out a construction project. CJVs are often temporary as they start before project tender and end upon project completion. They are project specific although they share the common characteristics of general joint ventures.

JV performance in this research is defined as “the overall results of a joint venture in accomplishing its goals”. While researchers have proposed many methods to measure JV performance, some of them are not applicable to CJVs, such as survival, duration and instability. To avoid confusing and misunderstanding, three dimensions are considered: (1) We focus on one parent firm (the focal firm); (2) We adopt subjective indicators due to the sensitivity of financial information to contractors, the limitation of objective data to directly measure partner’s satisfaction. (3) We focus on the overall results of construction joint ventures, as most CJVs have a limited time period and the performance is often evaluated for the whole construction period.

HYPOTHESES

Goals Compatibility and CJV Performance

Whether joint venture partners have compatible goals is a primary dimension of inter-partner fit. Strategic objectives define what parents want to achieve from their joint venture and would shape the policies and mechanisms they use to control joint venture operations.

Inter-partner goals compatibility refers to the degree to which partners’ goals for the joint venture are compatible with each other. It does not mean partners should have the same goals (Yan and Duan 2003). While parents must have some shared goals for a joint venture, their expectations are not the same, given their different backgrounds and interests. They may have different expectations for a same goal, e.g. JV profitability. They may also want to realize different strategic objectives through the JV. In either case these incompatible goals breed the seeds of opportunism and frictions. They will weaken the trust and cooperation between partners and increase the transaction costs for monitoring and undertaking the joint business. In the extreme case, divergent goals will let partners take distributive policies and lead to failure of the joint business (Luo 2002). On the contrary, compatible goals enhance the trust between partners. There is a high probability of quick response and low transaction cost during JV operation and thus a better JV performance. Therefore:

Hypothesis 1: there is a positive relationship between inter-partner goals compatibility and CJV performance.

Resources Complementarity and CJV Performance

Resources complementarity is a major motive for joint business and construction joint venture. The advantages of complementary resources (including physical assets, invisible

assets and organizational capabilities) could be explained from resource-based view of the firm (e.g., Barney 1991) and resource dependence theory (Pfeffer and Salancik 1978): Each parent firm brings its competitive resources into joint venture and thus the joint venture would avoid the constraints of these resources to other parties. Complementary resources also enhance the joint venture's capability to control internal activities and external risks. Supports could be found in some empirical tests (e.g., Awadzi et al. 1988, Sim and Ali 1998), where a positive association between resources complementarity and joint venture performance was found.

Similar situations occur in construction joint ventures. Contractors may complement each other by either bringing their individual competitive resources (e.g., technical know-how, managerial capability), or contributing redundant resources (e.g., human resources, capital) to enhance overall JV capabilities. In either case, desirable performance could be expected due to the synergetic effects. Therefore:

Hypothesis 2: there is a positive relationship between inter-partner resources complementarity and CJV performance.

Cultural Coherence and CJV Performance

Many researchers have argued that cultural similarity/difference/distance have great impacts on joint venture performance (e.g., Fey and Beamish 2001, Pothukuchi et al. 2002), although the empirical results are still not assertive. Two dimensions of culture, i.e., national and organizational culture, have drawn the attentions of researchers in organization and management (Pothukuchi et al. 2002). Similarities of both these two culture dimensions between partners were considered to produce JV performance implications.

If both partners have similar national customs, organizational values, and management styles, it would be easier for them to build up trust and develop a close relationship (Fong et al. 2004). Partners with similar culture tend to have a similar approach on decision-making and problem solving. It is, thus, easier to understand partner's strategy, policy and behavior. Cultural similarities also provide a basis of communication and cooperation for partners and therefore contribute to JV success.

We use "cultural coherence" in this paper, which may cover a narrower meaning than cultural similarities, such as low cultural conflicts and good synergies besides similar culture. Partners with similar culture are much easier to establish a high degree of cultural coherence. But more common in practice are JVs by partners from different culture backgrounds. Partners with dissimilar culture, however, could still achieve a good degree of cultural coherence, if the parties understand their cultural differences and are willing to build the advantages and to avoid conflicts.

Based on these discussions, we argue that a higher degree of coherence for partner's national and organizational culture means a better mutual understanding between partners, fewer unnecessary disputes on decision making, and thus would indicate better joint venture performance. This is also applicable in CJV, which is a subset of JV in general. Many CJVs consist of parent firms from different countries and, in many cases, they have various organizational backgrounds and decision making styles. Therefore:

Hypothesis 3: there is a positive relationship between inter-partner cultural coherence and CJV performance.

Inter-partner Fit and CJV Performance

We consider inter-partner fit a composite variable formed by its three core dimensions. Generally speaking, a fit between partners cover compatible parent goals, complementary resources contributed by each partner, and coherent partner culture, which tend to indicate a better mutual interests and cooperation, less inter-partner conflicts, more mutual supports, lower transaction cost, and thus better CJV performance. Therefore:

Hypothesis 4: there is a positive relationship between inter-partner fit and CJV performance.

DATA & MEASUREMENT

The hypotheses were tested through a self-directed questionnaire survey conducted in Hong Kong in 2005, which is part of a PhD research. We collected the names of near 700 professionals from various sources (e.g. directories, personal contacts) in the list of HKSAR government approved contractors. We mailed the survey form to 644 professionals with corrected contact addresses and asked them provide information for a recent CJV which they have attended. Totally 120 responses were received, where 51 had complete data for this research. Other responses were either rejected (5) or replies with no JV experience (62) or with incomplete JV information (2). While the response rate was relatively low, it may due to the fact that there are limited numbers of professionals with specific CJV experience. As some of the responses were from same CJVs, we averaged them to one case. We finally get 41 cases of various CJVs for empirical testing in this research.

CJV PERFORMANCE

We measure it by goal-oriented approach and the perspective of one focal parent firm. A list of 10 key goals is proposed, based on previous literature (e.g., Sridharan 1995) and pilot interviews with some CJV professionals. Respondents rated the extent to which the parent firm was satisfied in fulfilling each goal in this CJV (by 5 point Likert scale, where 1=Very Unsatisfied and 5=Very Satisfied). They also rated the importance level of each goal for the parent firm (by 6 point scale, where 0=Not applicable, 1=Low, and 5=High), as firms in different CJVs may have different expectations for each goal. The final result was calculated by the mean of satisfaction levels for all goals weighted by the importance level for each goal.

GOALS COMPATIBILITY

As compatible goals between partners are not the same as similar goals, it is difficult to rate the compatibility of partner goals in a rather objective way. We argued that incompatible goals between partners would generate goal conflicts between partners, which could be perceived by participants in a CJV. We thus measured the level of intensity and frequency of goal conflicts between partners, and used their addition as the inverse level of goals compatibility between partners.

RESOURCES COMPLEMENTARITY

Sim and Ali (1998) used the pattern of relative resources contribution by local and foreign partner to measure resources complementarity between partners. This approach,

however, is difficult to compare JVs with various partner numbers. We thus adopted the composite index from Award et al. (1988). We proposed 9 key resources (e.g., key technical and managerial staff, working capital) and asked the respondents to rate the level of importance for each resource in this CJV and the level of enhancement for each resource after the contribution by other parties. The level of resources complementarity was measured by the weighted mean of each item.

CULTURAL COHERENCE

We adopted a parsimonious approach to directly rate the similarity among partners (e.g., Saxton 1997). Besides the similarity of organizational and national culture, we used three more items to measure cultural coherence, i.e., familiarity to each other's culture, cultural synergy generated, and cultural conflicts generated (inversed item). All 5 items used 5-point Likert scale (1=Strongly Disagree 5=Strongly Agree).

The score of cultural coherence was calculated by mean of all 5 items. Cronbach's alpha was .70, which is acceptable for the early stage of theory building and testing (Nunnally, 1978). Factor analysis was conducted to check whether these items reflect one construct. The results, however, found that these items contain two common factors, where the 1st factor explained 38% of the variance and the 2nd factor for another 21% (table omitted). Factor 1, "cultural similarity", was highly loaded on the first 3 items and its score was calculated by mean of these three items ($\alpha=.82$). Factor 2, "cultural synergy", was highly loaded on the last two items and its score was calculated by mean ($\alpha=.72$). Based on hypothesis 3, we could propose the following two propositions:

Proposition 1a: there is a positive relationship between inter-partner cultural similarity and CJV performance.

Proposition 1b: there is a positive relationship between inter-partner cultural synergy and CJV performance.

INTER-PARTNER FIT

Inter-partner fit was calculated by the mean of goals compatibility, resources complementarity, and cultural coherence among partners. These three dimensions are "formative" rather than "reflective" (Diamantopoulos and Winklhofer 2001). Thus no internal insistency was calculated.

CONTROL VARIABLES

We controlled project complexity measured by interval scale of four items ($\alpha=.87$)⁴.

ANALYSIS & RESULTS

SPSS 13.0 was used to analyze data. Table 1 reports the means, standard deviations and correlations of the variables.

⁴ We also measured 6 other control variables by categorical scale: contract value, project type, client type contract type, payment type and partner number. They were not discussed here due to space limitation.

Table 1 : Descriptive Statistics and Pearson Correlation Matrix (N=41)

Variables	Mean	S. D.	1	2	3	4	5	6	7
1 goal compatibility	3.65	1.02							
2 Resource complementarity	3.48	0.72	0.11						
3 cultural similarity	2.90	0.92	0.02	0.10					
4 cultural synergy	3.30	0.75	0.09	0.36*	0.16				
5 cultural coherence	3.06	0.67	0.06	0.24	0.90**	0.58**			
6 interpartner fit	3.39	0.52	0.72**	0.63**	0.44**	0.47**	0.58**		
7 overall complexity	3.93	0.74	-0.03	-0.05	0.03	0.02	0.03	-0.03	
8 CJV performance	3.68	0.43	0.33*	0.37*	0.06	0.47**	0.26	0.49**	0.15

**p<0.01 level. *p<0.05 level(2-tailed)

We found that goal compatibility, resource complementarity, cultural synergy, and interpartner fit have a positive relationship with CJV performance. The results thus support hypothesis 1, 2, 4 and proposition 1b.

Table 2 displays regressions analysis for the variables with significant correlations with CJV performance. Standardized scores were used to remove the effects of different measurement scale. Overall complexity was transformed by square due to its curve relationships with CJV performance (observed from the scatterplot). Five models were calculated. Model 0 (base model) reports the effects of control variable (overall complexity) on CJV performance. Model 1-5 reports the effects of control variable and each independent variable (goal compatibility, resource complementarity, cultural synergy, inter-partner fit, new inter-partner fit) on CJV performance. Given that cultural coherence had no significant relationships with CJV performance, a new inter-partner fit score was calculated by the mean of goal compatibility, resource complementarity and cultural synergy.

Table 2 Regressions Models on CJV Performance (N=41)

	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5	
	Beta	P	Beta	P	Beta	P	Beta	P	Beta	P	Beta	P
control variables												
overall complexity (transformed)	0.37	0.02	0.35	0.02	0.31	0.04	0.33	0.02	0.32	0.02	0.28	0.03
Independent variables												
goal compatibility			0.30	0.04								
Resource complementarity					0.31	0.04						
cultural synergy							0.44	0.00				
interpartner fit									0.46	0.00		
New interpartner fit											0.52	0.00
Model results		P		P		P		P		P		P
Model F(ANOVA)	6.23	0.02	5.64	0.01	5.69	0.01	9.22	0.00	9.93	0.00	12.74	0.00
R Square	0.14		0.23		0.23		0.33		0.34		0.40	
Adjusted R Square	0.12		0.19		0.19		0.29		0.31		0.37	

All models are significant at $p < .05$. All standardized coefficient are significant at $p < .05$. Thus regressions results also support hypothesis 1, 2, 4 and proposition 1b. The proposed relationships are significant even controlled for overall complexity of the CJV project.

DISCUSSIONS

The positive relationship between goal compatibility and CJV performance was supported by the data. This result revealed that conflicts among partners' goals are perceivable in construction joint ventures. While occasional goal conflicts are tolerable, frequent and intensive ones blemish the operation and success of the joint business.

The positive relationship between resource complementarity and CJV performance was also supported. The result is consistent with the findings of Awadzi et al. (1988) and Sim and Ali (1998). This provides further empirical support for resource-based view of the firm and resource dependence theory, and extends the generalization to construction joint ventures.

The positive proposition between cultural similarity and CJV performance was not supported. Correlation was tiny ($r = .06$) and not significant. This is contrary to the finding of Sillars and Kangari (2004) where they found a positive support in CJVs. However, inconsistent results in other joint venture studies (e.g., no supports in Sim and Ali 1998; mixed results in Pothukuchi et al. 2002) indicates that the effects of cultural similarity on JV performance are marginal rather than determinant. Partners with similar culture would probably have a quick start for a joint operation and would encounter less difficulty in understanding each other. But similar culture could not hide the opportunistic behavior of each partner and could not promise a final success, given the dynamic nature of joint venture operations.

Support of the positive proposition between cultural synergy and CJV performance gave us another insight. Originated from system theories, the concept of synergy could refer to the enhanced combined effects generated from the interactions among system components (groups or organizations). While cultural similarity reflects a pre-operational perspective, cultural synergy provides a process or systemic perspective. Rather than seeking similarities between cultures, partners should appreciate each other's differences and advantages to build up synergies based on each one's cultural characteristics.

Inter-partner fit had a positive relationship with CJV performance. Together with overall complexity, they explained 31% of performance variance (model 4 in table 3). This is a medium effect in behavioral sciences (Cohen, 1988). The results suggest that, inter-partner fit is a promising concept to explain JV performance. Implications could be indicated: (1) Theoretically, inter-partner fit extends the notion of "fit" of O-E (organization and the environment) to the "fit" of O-O (organization and organization). (2) Practically, inter-partner fit as a composite score is a good and parsimony indicator to predict CJV performance. While further efforts are necessary to increase the explanation power, the data has indicated a useful direction. As the effects of cultural coherence on JV performance was mainly from cultural synergy rather than from cultural similarity, it is better to calculate the overall inter-partner fit from a dynamic perspective, considering the synergies generated during JV operation. Results showed that new fit score (by mean of goals compatibility, resources complementarity and cultural synergy) have improved the explanation power to 37% of performance variance (model 5 in table 3). This perspective also supports the

arguments in the current thoughts of O-E “fit” (e.g., dynamic capabilities, change management, learning organizations): *Organizations should fit the environment, not just at the start (design stage), but in the long term and dynamically, to survive.*

CONCLUSIONS

In this study we defined inter-partner fit as a multi-dimensional concept and discussed its three core dimensions, i.e., goals compatibility, resources complementarity and cultural coherence. The positive relationships between partners’ goal compatibility, complementary resource, cultural synergy and CJV performance were supported by the data. Results showed that inter-partner fit explained 31-37% (by original and new fit score) of CJV performance variance, which is a medium-to-large effect in behavioral sciences (Cohen 1988).

Our studies could indicate several theoretical and practical implications. Firstly, few systematic efforts have been tried to examine inter-partner fit except the qualitative case analysis by Yan and Duan (2003). We pushed this approach further by examining the notion of inter-partner fit in a broader background, revising the measures, and testing the associations quantitatively in a generalizable sample data. Secondly, we provided more evidence to the effects of inter-partner variables on JV performance. The data revealed that partners’ compatible goals and complementary resources are consequential to JV performance even in project-based construction joint ventures. Thirdly, we posited a dynamic approach of inter-partner fit. Considering the static features of the parents’ national and organizational similarities is not enough. A dynamic fit of partners during JV operation is thus more important. Partners should better understand each other’s differences and utilize each party’s advantages to produce more synergies during JV operation, no matter they are similar or dissimilar. Finally, managers could use the notion of inter-partner fit to diagnose JV operations. By identifying the specific dimensions and assessing partners’ compatibilities, managers could predict their impacts on JV performance and design ways to achieve better performance.

Some limitations need comments. Firstly, the data were collected from construction joint ventures in Hong Kong. Generalization of the results to other nations and other types of joint ventures warrant further testing. Secondly, most JV information was collected from a single respondent. Biases could not be eliminated, although most respondents were senior staff from the joint venture. Thirdly, current score of inter-partner fit explained a moderate amount of JV performance variance. Perhaps inter-partner fit could be formed by more dimensions to achieve a better explanatory power. Further studies could be conducted to refine these issues and to produce more rigorous results.

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