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Understanding the impacts of inter-organizational communication on strategic alliance performance and stability

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The purpose of this study is to measure the inter-organizational communication of alliances, and to explain the relationships among communication (communication willingness, commitment, behavior, and quality), alliance performance, and alliance stability. In data from 314 firms in China, communication willingness (β= .232), communication behavior (β= .305), and communication quality (β= .174) had a significant effect on alliance performance, while communication willingness (β=.232), communication commitment (β= .158), communication behavior (β= .134), and communication quality (β= .333) affected alliance stability. Limitations and future research directions were also discussed.

Key words: Inter-organizational communication, alliance performance, alliance stability.

INTRODUCTION

Although the number of inter-organizational alliances has grown rapidly during last decade, studies have reported very high failure rates. Alliance failure occurs when an alliance fundamentally cannot result in satisfying performance or it unexpectedly discontinues. For this reason, alliance performance and stability are considered as two major indicators of alliance success (Park and Ungson, 2001).

Despite former studies argue that inter-organizational communication has a positive effect on alliance performance and stability, this research remains undeveloped. Firstly, the prior studies overlook the multidimensionality of communication. Furthermore, an in-depth investigation of how sub-factors of inter-organizational communication facilitate alliance performance and stability is lacking. Consequently, the objective of our paper is to fill this gap by introducing four dimensions of inter-organizational communication. Based on an empirical study of strategic alliances in China, we explore the relationship among inter-organizational communication, alliance performance, and alliance stability. We intend to address the following problems in this paper:

1. Willingness, commitment, behavior and quality, which promotes inter-organizational communication more effectively, thereby contributing to alliance success?
2. What is the relationship between inter-organizational

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communication and alliance performance?
3. What is the relationship between inter-organizational communication and alliance stability?

LITERATURE REVIEW

Mohr and Nevin (1990) first argued that communication has multidimensional factors and Peng et al. (2010) found the interrelationship between the facets of communication. Both of their studies showed that communication willingness is the most important element as it stands for the starting point of the whole communication process. Communication commitment represents the indicator of success in the communication process. Communication behavior and quality can be considered as two factors improving the communication process. Thus communication behavior and quality enhance the communication commitment. In order to better understand the relationship between inter-organizational communication, alliance performance, and alliance stability, the four dimensions of communication - communication willingness, communication commitment, communication behavior, and communication quality are introduced in this paper.

Communication willingness, defined as the intention to initiate communication, is considered to be central to alliance performance and stability. An alliance partner willing to communicate shows intention to share information with each other, which provides more occasions to understand alliance partners (Maltz and Kohli, 1996), while alliance failure can be minimized by discovering compatibility between partners (Shamdasani and Seth, 1995).

Mohr and Sohi (1995) put forward that communication commitment is positively related to trust in alliance, as it inhibits the necessary information withholding and distorting behavior. Furthermore, communication commitment prevents alliance partner opportunism (Dahlstrom and Nygaard, 1999), and facilitates cooperation and collaboration (Menon et al., 1999). Finally, communication commitment allows alliance partners to join in goal setting and decision making.

Communication behavior is composed of communication frequency and communication media. Frequent communication which represents the closeness between alliance partners can help to encourage exchange of ideas, promote a more cooperative partnership, and bring about harmony between each other (Heide and Miner, 1992; Tucker et al., 1996). Communication media is indicative of the type of relationship. Drawing from media richness theory (Daft et al., 1987), communication channels with high richness can facilitate information transmission which is positively related to communication effectiveness and efficiency. Therefore, alliance partners, through communication behavior can inhibit misunderstandings and conflict and improve alliance performance and stability. Communication quality including accuracy, timeliness, adequacy, relevance, and credibility of information transferred (Daft and Lengel, 1986) is a particularly critical success factor of alliance partnership. Communication quality is positively associated with alliance satisfaction (Mohr and Spekman, 1994) and goal achievement.

RESEARCH METHODOLOGY

Theoretical framework

A path model highlighting associations among communication, alliance performance, and alliance stability is shown in Figure 1. Performance has been a central topic in research on strategic alliances. Scholars found that relationship among alliance partners was significantly related to alliance performance. In this paper we focus on the inter-organizational communication, which is the key success factor of relationship among alliance partners. Inter-organizational communication influences alliance partners to select, negotiate and manage these relationships effectively (Bakker and Knoben, 2015). While the extant literature has outlined a number of elements that make up inter-organizational communication, the predominant operationalization of the construct has involved four elements: willingness, commitment, behavior and quality. In addition, inter-organizational communication produces a number of benefits for alliance performance. These include facilitating knowledge transfer, execution of alliance strategy, signaling a partner's commitment to alliance objectives, promoting the development of new best practices and helping ensure the successful alliance operation process (Yang et al., 2014). Thus, we propose hypothesis1:

H1. Inter-organizational Communication relates positively to alliance performance.

Scholars believe that the fulfillment of objectives leads to alliance stability and the default of strategies leads to alliance instability (Bengtsson and Kock, 2014). High level of inter-organizational communication between partners can facilitate close cooperative relationship, ensure that partners put more efforts into alliance, and prevent possible opportunistic behaviors, which are beneficial to achieve high goals of alliance (Lin and Darnall, 2015). Besides, high level of inter-organizational communication will also make cooperation flexible and avoid conflicts which negatively affect alliance stability. In short, inter-organizational communication facilitates the cooperation between different parties and also acts as the principle of stabilization of strategic alliance. Therefore we pose hypothesis 2:

H2. Inter-organizational communication relates positively to alliance stability.

Sample and data

The research randomly selected 500 firms in China. With the help of local governments, we obtained the names, telephone numbers, and e-mail addresses of top managers from the sampled firms. Then, we contacted the managers by e-mail letters or telephone to describe the purpose of the survey and asked whether they would like to assist with the study. In the cases in which a manager reported that his or her firm had been involved in one or more strategic alliances and was also willing to participate in the survey,

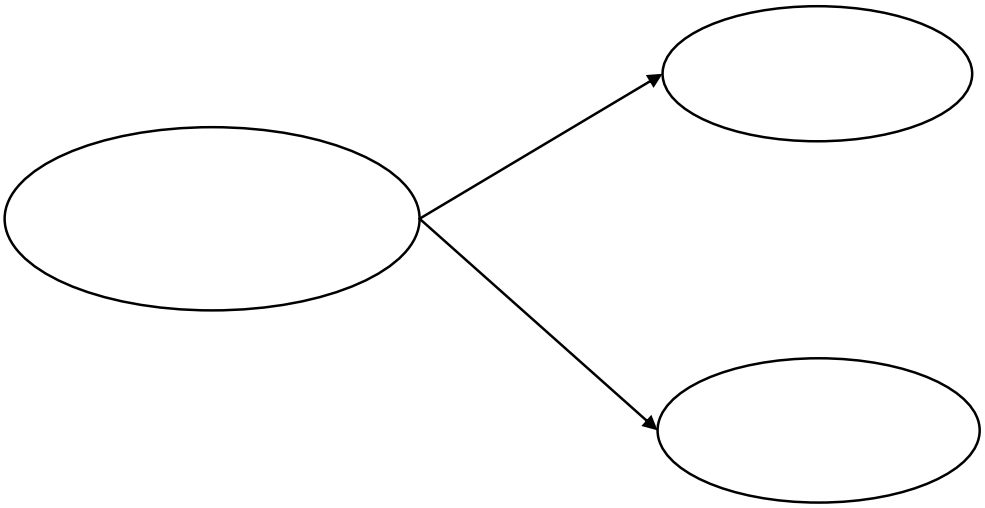

Figure 1. A path model highlighting associations among communication, alliance performance, and alliance stability .

we noted his or her contact information.
To administer the formal survey, we first called a manager to set up an appointment and also asked him or her to invite another manager to complete the questionnaire independently. After we matched key informants and deleted missing data, the final sample included 314 partner firms.

Instrument development

The seven-point Likert scales anchored by (1) strongly disagree to (7) strongly agree is introduced to measure the constructs. All the items applied to measure the constructs are modified from relevant literature. This study examined four dimensions of inter-organizational communication: communication willingness, communication commitment, communication behavior, and communication quality. Each dimension of inter-organizational communication is assessed with 15-item scale, adapted from Ammar (Redza et al., 2012). Alliance performance was measured using 5-item scale, based on Krishnan et al. (2006). Adapted from Saxton's 5-item scale (1997), alliance stability was measured.

RESULTS

Convergent validity and reliability analysis

Following Anderson and Gerbing's suggestion (1988), a confirmatory factor analysis is carried out before structural equation modeling (SEM). The remaining items for structural equation modeling are shown in Table 1 with the results of confirmatory factor analysis including convergent validity and reliability. χ^2 = 461.236 (df = 215, p< .001), GFI = .889, NFI = .920, TLI = .947, and RMSEA = .060. Furthermore, all standardized factor loadings exceeded .60, and each indicator t-value exceeded 8.0 (p < .001), the average variance extracted are desirable by exceeding .50 (Table 1). According to Churchill (1979), Cronbach's alpha values ranging from .800 to .945 are acceptable. The means, standard deviations, and correlations are shown in Table 2. While variance extracted values ranging from .575 to .806 go over all squared correlations ranging from .084 to .349, the discriminant validity is acceptable, which suggest that the six factors are distinct and unidimensional.

Structural equation modeling and hypotheses testing

The structural equation modeling fit is good (χ^2= 472.276; χ^2/df = 2.186; GFI = .889; CFI=.954; RMSEA=.062). Hypothesis 1a, hypothesis 3a, hypothesis 4a are accepted. Communication willingness (β=.232), communication behavior (β=.305), and communication quality (β=.174) - significantly affect alliance performance; communication commitment (β= .040) did not. Hypothesis 1b, hypothesis 2b, hypothesis 3b, and hypothesis 4b are supported. Communication willingness (β=.232), communication commitment (β=.158), communication behavior (β=.134), and communication quality (β=.333) have a significant effect on alliance stability (Table 3).

DISCUSSION

Inter-organizational communication affects strategic alliance success. Although a single indicator of inter-organizational communication has been largely applied by extant research (Mohr et al., 1996), it does not sufficiently capture the complex nature of inter-organizational communication in the strategic alliance context. Synthesizing current literature, we assessed inter-organizational communication by 15-item Likert-type

Table 1. Convergent validity and reliability.

Construct	Standardized factor loadings	*t*-Value	SMC	Variance Cronbach's alpha	CCR[a] AVE[b]
Communication willingness				5.800%	.852
CW1	.896	Fixed	.803	.922	.806
CW2	.903	23.247***	.815		
CW3	.896	22.178***	.774		
Communication commitment				5.276%	.706
CC1	.790	Fixed	.625	.851	.662
CC2	.919	16.220***	.844		
CC3	.721	13.288***	.519		
Communication behavior				11.948%	.815
CB1	.687	Fixed	.472	.904	.714
CB2	.912	14.590***	.831		
CB3	.885	14.262***	.784		
CB4	.879	14.183***	.773		
Communication quality				40.886%	.891
CQ1	.841	Fixed	.707	.945	.778
CQ2	.905	21.424***	.818		
CQ3	.915	21.894***	.838		
CQ4	.916	21.895***	.838		
CQ5	.832	18.505***	.692		
Alliance performance	.			6.878%	.734
AP1	.858	Fixed	.736	.800	.575
AP2	.861	17.238***	.740		
AP3	.605	11.191***	.366		
AP4	.678	12.920***	.460		
Alliance stability				7.619%	.822
AT1	.675	Fixed	.456	.835	.685
AT2	.854	13.409***	.790		
AT3	.902	13.970***	.813		
AT4	.864	13.538***	.747		

[a] CCR = composite construct reliability; [b] AVE = average variance extracted. χ^2= 461.236 (df = 215) p < .001; χ^2/df = 2.145; GFI = .889; NFI = .920; TLI = .947; CFI = .955; RMSEA= .060; cumulative = 78.407%; *** p < 001.

scale measures into four dimensions, including communication willingness, communication commitment, communication behavior, and communication quality. This research is meaningful because it may suggest varieties of alliance management practices through inter-organizational communication as a strategic approach to increase strategic alliances performance and stability.

Inter-organizational communication has a significantly positive effect on strategic alliance performance (except communication commitment). In particular, communication behavior is determined to be the most important variable affecting communication performance. On one hand, higher communication frequency can reinforce better understanding of partners' expectation, behavior, resources and capability (Kumar and Das, 2007). For another, rich communication media can facilitate communication benefits to alliance performance. This is in line with the media richness theory (Daft et al., 1987).

Another finding was that inter-organizational communication increased strategic alliance stability. To begin with, inter-organizational communication build trust between partners. According to social embeddedness theory (Gulati, 1995; Gulati and Gargiulo, 1999), greater trust (Sivades and Dwyer, 2000) will result in accumulation of ties between increasingly embedded partners (Gulati and Gargiulo, 1999), which can improve the alliance stability. In addition, inter-organizational communication facilitates cooperation and close involvement in decision-making process. As information asymmetry is reduced by inter-organizational communication (Mowery et al., 1996), the perceived likelihood of opportunistic behavior decrease. Thus, a higher level of inter-organizational communication acts as both a signaling and a monitoring mechanism by establishing and building alliance stability.

Table 2. Means, standard deviations, and correlation.

Construct	M±SD	1	2	3	4	5	6
1.Communication willingness	4.26±1.33	1	.247[a]	.131	.285	.174	.277
2.Communication commitment	4.20±1.34	.497**	1	.357	.248	.087	.193
3.Communication behavior	3.88±1.31	.362**	.189**	1	.084	.139	.119
4.Communication quality	4.40±1.31	.534**	.498**	.291**	1	.153	.349
5.Alliance performance	4.18±1.08	.418**	.296**	.374**	.392**	1	.242
6.Allicane stability	3.55±1.20	.527**	.440**	.345**	.591**	.492**	1

[a]r^2; **p< .01 (two-tailed tests).

Table 3. Structural parameter estimates.

Hypothesized path (stated as alternative hypothesis)	Standardized path coefficients	*t*-Value	Results
H1: inter-organizational Communication → alliance performance			Partially supported
Communication willingness → alliance performance	.232	2.920**	
Communication commitment→ alliance performance	.040	.536 ns	
Communication behavior → alliance performance	.305	5.043***	
Communication quality → alliance performance	.174	2.443*	
H2: inter-organizational Communication → alliance stability			Supported
Communication willingness → alliance stability	.232	3.216**	
Communication commitment → alliance stability	.158	2.514*	
Communication behavior → alliance stability	.134	2.315*	
Communication quality→ alliance stability	.333	4.948***	
Goodness-of-fit statistics	χ^2=472.276(p<.001)		
	df=216		
	χ^2/df=2.186		
	GFI=.889		
	NFI=.954	IFI=.954	
	RMSEA=.062		

ns = not significant. *p< .05. **p< .01. ***p< .001.

THEORETICAL AND MANAGEMENT IMPLICATIONS

From a theoretical perspective, we propose four dimensions of inter-organizational communication. This study divides inter-organizational communication into willingness, commitment, behavior and quality. Then we test how different dimensions of inter-organizational communication influence alliance performance and stability. We demonstrate inter-organizational communication has a significantly positive effect on strategic alliance performance (except communication commitment) and alliance stability, which is an empirical remedy in this field.

From a management perspective, this study finds that the inter-organizational communication can enhance alliance performance and stability in the Chinese context. More specifically, inter-organizational communication plays an important role in alliance success. Alliance partners should facilitate inter-organizational communication by improving communication willingness, commitment, behavior and quality. When the alliance partners have high level of inter-organizational communication, they may easily build the mutual trust mechanisms, expand the breadth and depth of the relationships. It is effective to help achieving objectives of alliance.

RECOMMENDATIONS FOR FUTURE RESEARCH

Despite the study's implications, it had several limitations. First, the sample consisted of strategic alliances in China, which was only a portion of alliances. Therefore, efforts must also be taken in generalizing these findings to other circumstances. Second, this study depended on a survey with a cross-sectional design and therefore may not have clearly reflected a causal relationship between variables of the study model, and the self-reporting measurement

method may have resulted in errors of common method variance. Future researchers should conduct a longitudinal study or obtain samples from several sources. In the end, it may be further enlightening to examine partner selection (Oxley, 1997), which engage as moderator variable of inter-organizational communication.

Although much more work is required to understand how inter-organizational communication can improve strategic alliance performance and stability, this paper is one step toward a greater understanding. In view of the recent rapid growth in strategic alliances, hopefully this research will help guide managers in using inter-organizational communication strategies more effectively.

Conflict of Interests

The authors have not declared any conflict of interests.

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