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The Impact of Boundary Spanning Capability on Success of Offshore

IS Outsourcing⁻

---From the Vendors' Perspective

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Abstract: Past research has shown that most offshore IS outsourcing projects were failed. Communication and coordination problems caused by culture differences between clients and vendors are important reasons for the failures. The theory of boundary spanning capability provides a new theoretical perspective for research of coordination and communication mechanisms between clients and vendors in offshore IS outsourcing. This paper takes culture differences as mediator to study the impact mechanisms of vendors' boundary spanning capability on success of offshore IS outsourcing. The research model is empirically tested on a sample of 102 offshore IS outsourcing projects from 20 vendors in China. The results suggest that vendors' boundary spanning capability significantly improves outsourcing success. Moreover, vendors' boundary spanning capability has a negative impact on culture differences and culture differences negatively influence the outsourcing success. Finally, we find that culture differences mediate partly the relationship between boundary spanning capability and outsourcing success.

Keywords: offshore IS outsourcing, boundary spanning capability, outsourcing success, culture differences

1. INTRODUCTION

The use of information technology (IT) has become a primary survival factor for business organizations in a global competitive environment. However just as IT can make money for business, it can also lose money, as IT has become a major corporate expenditure.······

Along with the promotion of globalization, companies are sourcing more and more services to third-party offshore vendors all over the world[1]. In particular, the development of information system (IS) has been increasingly outsourced offshore, thanks to low-cost of telecommunication and highly skilled IS professionals in other countries (e.g., India and Russia). Offshore IS outsourcing projects are playing an increasingly important role in global business and attracting wide spread attention [2-4].However, offshore IS outsourcing suffers from a high failure rate. According to a related research, almost 65% of IS outsourcing projects turned out to be unsatisfactory or even failed [5]. Prior research has examined the problems in offshore IS outsourcing, and found that culture differences, language barriers and domain knowledge gaps gave rise to   coordination and communication problems between clients and vendors, leading to   the failure of offshore IS outsourcing projects[3-6].Thus, a series of significant theoretical issues arise, including how to overcome these gaps, reduce risks brought by these gaps, and manage offshore IS outsourcing projects successfully[7].

Boundary spanning capability is an important type of cross-organizational coordination and communication capabilities. It provides a fresh theoretical perspective for studying coordination and communication between clients and vendors in offshore IS outsourcing. Effective communication between clients and vendors in

offshore IS outsourcing requires spanning various boundaries to realize efficacious information transmission through different organizations and across different countries. Boundary spanning capability facilitates seamless and effective transmission of information cross organizational boundaries[8].

Culture differences between clients and vendors are a key factor influencing offshore IS outsourcing outcomes. Many scholars consider culture differences to be "extra cost" of offshore IS outsourcing [9-11]. As a result of cultural differences, offshore IS outsourcing teams face communication challenges and misunderstandings, which cause conflicts and contradictions[12]. Consequently offshore IS outsourcing experienced increasing cost as well as decreasing customer satisfaction[7, 13, 14]. In this paper, we consider culture differences as a mediator when studying the impact of vendors' boundary spanning capability on offshore IS outsourcing success.

The rest of the paper is organized as follows. The next section (Section 2) is literature review, followed by, the research model and hypotheses in Section 3. We describe our research design and data analysis in the fourth section, and present the research discussion in the fifth section. We conclude the paper in Section 6 with contributions, limitations and directions for future research.

2. LITERATURE REVIEW

2.1 Boundary spanning capability and offshore IS outsourcing

Prior research has examined multiple concepts associated with boundary spanning capability, including boundary object, boundary spanner and boundary spanning process. Boundary objects are sufficiently plastic objects that can be used to adapt to local demand and restrictive factors among teams. Originated from the fields of social science research, boundary objects are used to solve problems in collaboration between heterogeneous discipline organizations[15, 16]. Boundary objects, has been applied in many different environments and fields, such as design team[17-19], new product development[20], and financial system[21]. Some researchers applied it to fields of closing knowledge gaps and promoting knowledge transformation [19, 22-24].

Boundary objects can be divided into four types [20]: repositories (e.g. database), standardized forms and methods (e.g. engineering change table), objects or models (e.g. computer simulation), maps of boundaries (e.g. flow chart). According to Carlile (2002), a valid boundary object must have three properties, representing, learning and transforming. First, it establishes shared grammar for individuals to represent their knowledge. Second, it provides specific methods for individuals to describe and study differences that spanning specific boundaries and dependences. Third, it provides processes and methods for individuals to transform knowledge between projects.

While some scholars considered boundary objects as a part of boundary spanning capability [15, 20], others focused on boundary spanners and boundary spanning processes[25, 26]. Levina and Vaast [25]considered economic thinking, culture understanding, sociability, representativeness as the initial capital of boundary spanners. The needs for culture understanding and sociability fully underlie the importance of realizing cross-organizational culture communication, which are consistent with the research background of offshore IS outsourcing. Levina's classification of boundary spanning capability thus provided us with a theoretical basis for refining composition of boundary spanners' capability, and laid research foundation for classification and measurement of the spanning capability.

Boundary spanning processes can be considered as the standard for boundary spanners and boundary objects to span boundaries[27]. Existing researches [25, 27]have suggested the following aspects of boundary spanning processes, including starting boundary spanning processes, electing boundary spanners, designing and using of boundary objects.

In addition, some scholars began to study the impact of boundary spanning capability on the success of

offshore IS outsourcing projects [7, 8, 26]. Gopal and Gosain[13] used quantitative method, which is used rarely in researches of boundary spanning capability, to discuss impact of boundary spanning capability on the project performance of software outsourcing. They considered boundary spanning capability synthetically from three perspectives: boundary objects, boundary spanners, boundary spanning processes. They provided a basis for measuring boundary spanning capability. However, the research was organized based on organizational control theory, and boundary spanning was included in the research model only as control variables. Further research is needed to investigate the direct influences of boundary spanning capability on outsourcing success.

2.2 Offshore IS outsourcing and culture differences

Offshore IS outsourcing projects span the boundaries of both organizations and countries. Hence, key criterions and values determined by culture characteristics of organizations and countries exert significant impact on the effectiveness of coordination and communication[28, 29]. Different culture criterions of clients and vendors would become barriers to successful offshore IS outsourcing[30].By contrast, organizations with same culture criterions are likely to achieve successful coordination more easily than those with different cultures.

Dibbern[31]proposed that some "extra cost" occurred in software offshore outsourcing projects, leading to failures of the projects. He said that factors causing the project cost increase were related to vendors' business comprehension, geography gap and culture differences between clients and vendors. Hofstede's[32]theory of culture differences dimensions decomposed culture into factors that were easily to recognize, and proposed a specific theoretical framework based on specific research data. Large-scale validation studies of survey analysis are still rare. Drawing upon Hofstede's organization culture criterion. Rai et al. [30]evaluated culture differences between onshore clients and offshore vendors, and divided culture differences between organizations as the following: process-oriented to result-oriented, employee-oriented to work-oriented, orientation of organization loyalty to orientation of business loyalty, open system to closed system, loose control to tight control, normativism to pragmatism (rules-oriented to customer-oriented) and so on.

Many researches show that culture differences have negative effects on communication, trusts, and relationships between clients and vendors [10, 1, 29, 33-35]. However, studies on how to eliminate such negative impact remain limited. Boundary spanning capability provides a new perspective to investigate how to eliminate culture differences between offshore IS outsourcing projects, and to expand the scope related research on the influence of culture differences influence and the management of culture relationship. Moreover, past research on boundary spanning often focused on the perspective of domain knowledge or knowledge transfer, overlooking the perspective of culture differences.

3. RESEARCH MODEL AND HYPOTHESES

This paper introduces a new theory of boundary spanning capability to study the impact of this capability on the success of offshore IS outsourcing projects. Based on literature review, we propose a research model consisting of three variables: boundary spanning capability, culture differences, and outsourcing success. We summarize the model in Figure 3.1 and present our hypotheses in the following section.
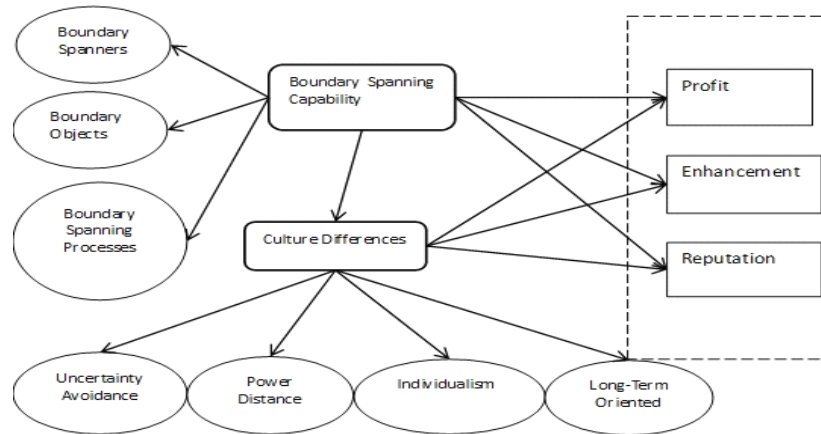
Figure 3.1.   Research model

3.1 Factors selection

Table 3.1.   Descriptions and sources of variables

variable	description	reference
Boundary Spanners，BS	individual that ensure demanded knowledge to flow crossing boundaries	Levina and Vaast 2005
Boundary Objects，BO	sufficiently plastic object that can be used to adapt to local demand and restrictive factors among teams	Star,1989
Boundary Spanning Processes, BP	mechanism used among different teams for bidirectional transmission of information crossing boundaries and integration, transmission, application of knowledge	Carlile，2002, 2004
Uncertainty Avoidance Index ,UAI	the degree of tolerance for a society to perceived uncertainty and blurry scene	HofStede,1980
Power Distance Index，PDI	the degree of members in low-level right status feel that the rights diffusion is unfair	HofStede,1980
Individualism, IDV	compact degree of individual and collective practice in social groups	HofStede,1980
Long-Term Oriented	values of a culture for clinging to long-term interest or recent interests	Michael H Bond，1988
Profit，PF	profits, market diffusion etc.	Zou Wei，2008
Enhancement，EH	Promotion of business capability and professional ability, mining of potential users	Zou Wei，2008
Reputation, RP	external manifestation of corporate performance, outside evaluation	Zou Wei，2008

Boundary spanning capability

Researches on boundary spanning capability in recent years focus on three aspects: boundary spanners, boundary objects, and boundary spanning processes. Gopal[13]analyzed functions of project control mechanism and boundary spanning capability in IS development outsourcing projects, and verified the impact of boundary spanning capability on efficiency and utility of control mechanism. Consistent with Gopal's[13] factor variables, we measure boundary spanning capability by boundary spanners, boundary objects, and boundary spanning processes in this paper.

Culture differences

Our literature review on culture differences suggests that Hofstede's classification and measurement of culture differences have been widely used. For example, Tian and Du [36] adopted Hofstede's related research results in studying cross-culture knowledge sharing mechanisms in offshore outsourcing. They focused on the perspective of Chinese vendors and took into consideration the social situation in China, In doing so, they analyzed the culture differences by drawing upon the four factors of Hofstede's culture dimension theory---

Uncertainty Avoidance, Power Distance, Individualism and Long-Term Oriented --- and examined them using empirical data collected at　Xi'an Software Park in　China.. As our research mainly focuses on the perspective of Chinese vendors, we choose these four indicators, consistent with Tian and Du [36].

Outsourcing success

In this paper, we choose Zou Wei's [37] measurement dimensions based on vendor's perspective. The dimensions are profit, enhancement and reputation. Profit, which is also named profit level, contributes to corporate financial performance. Enhancement lays the foundation for future market development and project implementation. Reputation enhances the public impression and evaluation, which is good for creating positive awareness of enterprise.

3.2 Boundary spanning capability and culture differences

The degrees of culture differences between clients and vendors differ among offshore IS outsourcing projects. The differences are related to vendors' boundary spanning capability. In an effort to cope with the challenges of cultural differences, vendors begin to consider establishing special cross-boundary project teams or designating leaders for direct communications with clients. The boundary spanners, who excel in their capability of culture understanding, often have a cultural or educational background of the client-side, or long-term work experience with clients. They are highly capable of designing and selecting appropriate tools and objects. As a common language, boundary objects facilitate the communications between clients and vendors, and prevent potential problems caused by differences in cultural backgrounds and work practices. Researches have shown that boundary objects are especially suitable for situations in which there are significant understanding gaps between clients and vendors, as it can promote information and knowledge sharing between clients and vendors, and eliminate the differences between them [38]. Additionally, by setting reasonable boundary spanning processes, vendors can weaken the impact of culture differences during project implementation process and avoid problems such as delays of business demand understanding and uncertainty of lead time and delivery. In general, the boundary spanning capability can mitigate the risk caused by the culture differences between clients and vendors and promote their mutual understanding in offshore IT projects..

Based on the analysis above, we propose a hypothesis as follow:

H1: In offshore IS outsourcing projects, vendors' boundary spanning capability negative impacts culture differences.

3.3 Boundary spanning capability and outsourcing success

A boundary spanner can emerge spontaneously or can be elected by project management. Whether self-promoted or designated, a boundary spanner always has strong culture understanding ability and social ability, can promote the communications between clients and vendors, guarantee accurate understanding of clients' business demands and reflect project schedule promptly. All of the activities performed by a boundary spanner have a positive impact on knowledge transfer and sharing between clients and vendors,　promoting successful implementation of projects. In a two-year case study, Barrett [39]concludes that in cross-cultural software development teams, boundary spanning capability reduced cultural confliction in offshore IS development, and promoted knowledge sharing and enhance success rate of the projects. Gopal's[13] quantitative study also supported the positive impact of boundary spanning capability on success of offshore IT outsourcing. He validated from vendors' perspective that boundary spanning capability can significantly improve the efficiency of organization control and project performance, and increase the success rate of projects. In our study, we draw lessons from Zou's[37] index design of project success evaluation by vendors' perspective. The indexes include profit, enhancement and reputation.

Based on the above analysis, we predict:

H2: In offshore IS outsourcing projects,　vendors' boundary spanning capability has a positive impact on

profit.

H3: In offshore IS outsourcing projects, vendors' boundary spanning capability has a positive impact on enhancement.

H4: In offshore IS outsourcing projects, vendors' boundary spanning capability has a positive impact on reputation.

3.4 Culture differences and outsourcing success

Offshore IS outsourcing is considered to be a kind of extremely difficult work. It faces more challenges during decision-making, operations and delivery, as well as higher possibility of failure. Offshore IS outsourcing is not only challenged by the realization of IT technology but also by complex economic behaviors associated with particularity across regions, countries, industries and organizations.. Culture differences, geographic disparities, language barriers and domain knowledge gaps are all barriers to effective communications. For example, almost 70% of outsourcing clients complain that the main reason of their failed relationships is that vendors cannot understand their demands [40]. The environment of offshore amplifies the impact of culture differences on outsourcing outcomes. India, as the most important destination of outsourcing, has achieved more than 50% of the market share in Europe and the United States market. The critical success factor lies in their cross-culture capability. Compared to India vendors, Chinese vendors still experience problems such as language barriers, low cultural compatibility and lack of industry knowledge [41-42]. Those problems restrict the development of China's outsourcing industry and hinder the successful implementation of the outsourcing projects.

In view of the above analysis, we hypothesize:

H5: In offshore IS outsourcing projects, culture differences have a negative impact on profit.

H6: In offshore IS outsourcing projects, culture differences have a negative impact on enhancement.

H7: In offshore IS outsourcing projects, culture differences have a negative impact on reputation.

4. RESEARCH DESIGN AND DATA ANALYSIS

4.1 Data collection and sample

In this paper, we used questionnaires to collect data. Respondents included project members and leaders, company executives, industry experts and scholars. They all had work experience with offshore IS outsourcing vendors. In the survey, we selected 20 vendors in Beijing and sent 157 questionnaires between February 2012 and May 2012. We received 102 completed questionnaire, achieving a response rate of 65.6%. The 20 firms in Beijing were selected for four reasons. First, China is one of the main offshore outsourcing destinations. China's outsourcing industry has been growing rapidly during the recent years and reached USD 23.83 billion in 2011[43]. Yet, China represents an understudied setting in offshore IS outsourcing research. Second, Beijing represents the largest base for offshore outsourcing and witnesses the fastest rate of growth in China. Third, the researchers had established connections with the 20 firms in Beijing. Fourth, although all the 20 vendors were providing offshore outsourcing services, they varied in terms of backgrounds, sizes, and outsourcing services, providing us with an appropriate context to examine the impacts of different influencing factors

The questionnaire was designed to collect basic information about project status and respondents, including firm size and reputation, outsourcing history, customer distribution, project amount and time, experience, position and department. The sample is characterized as follows:

(1) The survey covers companies with different reputation. 82.52% of them have a general or higher reputation and only a small proportion have a top or lower reputation. This shows that the sample data represents most companies above the average.

(2) Respondents are experienced in offshore IS outsourcing. 72.82% of them have more than three years of

work experience. This, to a certain extent, indicates the reliability of sample.

(3) Most of the respondents are junior managers (49.51%). 13.59% are senior managers, including company managers, department heads, project leaders and project managers. 33.01% are project members, including experienced project members, marketing staffs and customer relationship officers, and others are professional researchers in offshore IS outsourcing.

4.2 Reliability and validity testing

The reliability is evaluated by computing Cronbach's α. The higher the value, the more stable the item. In addition, to verify whether measurements can effectively fit variables, this study adopts exploratory factor analysis to reduce the dimension of measurements, and tests the rationality of questionnaires and validity of the samples. In this paper, the factor analysis using principal component analysis, factor analysis is after correlation test. It can be judged by the coefficient of KMO (Kaiser Meyer Olkin) and Bartlett's Test of Sphericity (Factor Analysis). This paper analyses the data using SPSS software, conducting factor analysis and reliability testing. Results are shown below.

From table 4.1, Cronbach's alphas are larger than 0.7, which shows all factors have adequate reliability and the samples are effective and feasible. All KMOs are above 0.7 and the prominence rate of statistics in Bartlett Test of Sphericity is 0.000 (less than 0.001). It shows that sample data is suitable for factor analysis. By using maximum variance method and orthogonal rotation, we find load factors of each variable are above 0.5, so all factors have adequate validity.

Table 4.1.   The results of factor analysis and reliability testing

Items	Load Factors	Cronbach's α	Cronbach's α	KMO
BS1	0.898	0.841		
BS2	0.845	0.844	0.819	
BS3	0.866	0.849		
BO1	0.733	0.852		
BO2	0.604	0.851		
BO3	0.574	0.849	0.873	
BO4	0.721	0.851		
BO5	0.697	0.859		0.833
BO6	0.709	0.846		
BP1	0.693	0.917		
BP2	0.74	0.899		
BP3	0.711	0.887	0.921	
BP4	0.706	0.888		
BP5	0.604	0.923		
PDI1	0.879	0.864		
PDI2	0.814	0.895	0.904	
PDI3	0.898	0.875		
PDI4	0.867	0.866		
UA3	0.901	0.889		
UA4	0.91	0.882	0.918	
UA1	0.895	0.889		
UA2	0.873	0.913		0.788
IDV1	0.915	0.889		
IDV2	0.818	0.919	0.923	
IDV3	0.923	0.881		
IDV4	0.877	0.909		
LTO1	0.698	0.704		
LTO2	0.843	0.653	0.765	
LTO3	0.788	0.694		
PF1	0.823		0.758	
PF2	0.773			
EH1	0.782		0.906	
EH2	0.7			0.822
RP1	0.765		0.823	
RP2	0.833			

Table 4.2.   Factor loadings, T-value, AVE and CR

Factors	Items	Factor Loadings	T-Value	AVE	CR
BS	BS1	0.902	3.426	0.8265	0.9345
	BS2	0.924	4.083		
	BS3	0.9	3.759		
BO	BO1	0.776	15.818	0.703	0.9097
	BO2	0.779	16.658		
	BO3	0.8	15.646		
	BO4	0.799	18.075		
	BO5	0.7	17.626		
	BO6	0.824	23.645		
BP	BP1	0.842	22.368	0.6746	0.9413
	BP2	0.887	33.433		
	BP3	0.928	64.869		
	BP4	0.923	47.323		
	BP5	0.796	14.895		
PDI	PDI1	0.884	30.776	0.7998	0.9411
	PDI2	0.887	44.213		
	PDI3	0.912	39.081		
	PDI4	0.894	31.27		
UA	UA1	0.842	14.181	0.7521	0.9238
	UA2	0.88	29.179		
	UA3	0.88	34.171		
	UA4	0.865	19.998		
IDV	IDV1	0.894	40.936	0.7713	0.9309
	IDV2	0.878	36.979		
	IDV3	0.919	42.389		
	IDV4	0.818	12.895		
LTO	LTO1	0.857	7.117	0.6067	0.8206
	LTO2	0.657	3.246		
	LTO3	0.808	4.701		
PF	PF1	0.866	17.004	0.7953	0.8859
	PF2	0.917	42.687		
EH	EH1	0.949	77.681	0.9103	0.9531
	EH2	0.959	10.93		
RP	RP1	0.931	45.682	0.8665	0.9285
	RP2	0.931	33.781		

To further test the reliability and validity of variables, we conducted confirmatory factor analysis by usingSmartPLS 2.0. Validity usually includes content validity and construct validity. Construct validity is the key problem to be solved in empirical research; it covers convergent validity and discriminant validity.

As table 4.2 shows, all factor loadings are greater than 0.6, and the values of average variance extracted (AVE) are greater than the threshold value of 0.5. Moreover the composite reliabilities (CR) exceed the criteria of 0.8. Therefore, all factors in the measurement have good discriminant validity and convergent validity[44, 45].

To validate the discriminant validity, the study uses AVE square root method by examining whether or not the square roots of AVE exceed the correlations between factors. Since table 4.3 indicates all square roots are higher than the correlations, discriminant validity is supported.

Table 4.3.   Correlations between factors

	BS	BO	BP	PF	EH	RP	UA	IDV	PDI	LTO
BS	0.909									
BO	0.204	0.838								
BP	0.353	0.510	0.821							
PF	0.199	0.597	0.440	0.892						
EH	0.235	0.606	0.406	0.547	0.954					
RP	0.291	0.599	0.593	0.576	0.493	0.931				
UA	0.018	0.198	0.159	0.051	0.006	0.034	0.867			
IDV	-0.280	-0.489	-0.361	-0.484	-0.510	-0.438	-0.407	0.878		
PDI	-0.1398	-0.5678	-0.5264	-0.3802	-0.3371	-0.5582	-0.2522	0.176 0	0.8943	
LTO	-0.165	-0.371	-0.408	-0.335	-0.375	-0.457	-0.199	0.057	0.387	0.779

4.3 Model Verification and Evaluation

Partial least squires (PLS) approach doesn't strictly limit the sample data and is very suitable for small sample

study. This research aims to explore the influence of boundary spanning capability on outsourcing success.As the study sample is small and difficult to obey multivariate normal distribution, thisstudy employs PLS method to construct structural equation model.

There are 10 first constructs in this paper, including boundary spanners, boundary objects, boundary spanning processes, uncertainty avoidance index, individualism, power distance index, long-term oriented, profit, enhancement and reputation. Their observation variables are items in the questionnaire, for a total of 35. Besides, there are 2 second constructs, which are boundary spanning capability and culture differences. The relationship in the structural model is the same as the relationship in the research model.

This study employs SmartPLS2.0to construct structural equation,and the mechanism of the model is as follows: for vendors, boundary spanning capability and culture differencesaffect the success of offshore IS outsourcing projects. The influence is mainly measured by path coefficients of three potential variables, including profit, enhancement and reputation. Path coefficients and the T-test results are shown in Figure 4.1.
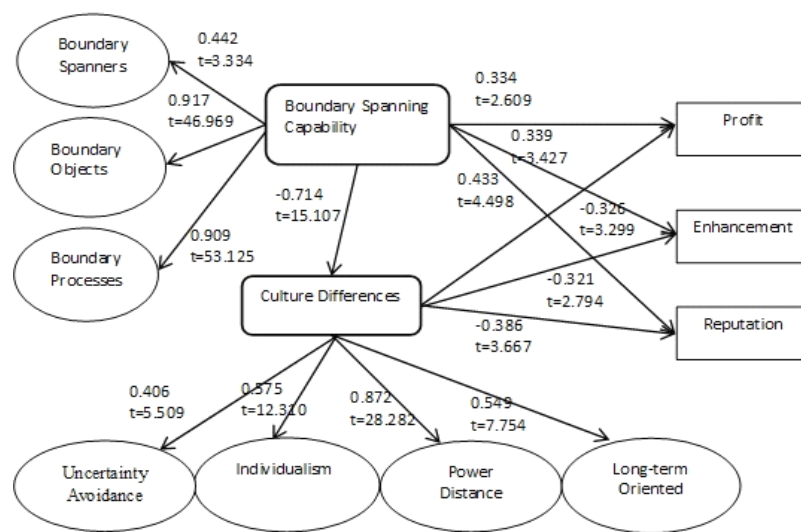

Figure 4.1. Path coefficients of structural equation model

As shown in Figure 4.1, boundary spanning capability has positive correlation with profit, enhancement and reputation. Boundary spanning capability is negatively correlated with culture differences. Meanwhile, culture differencesare negatively correlated with profit, enhancement and reputation. The significance level can be judged by T-test. If $1.84 \leqslant T \leqslant 1.96$, hypotheses are accepted; if $T \geqslant 1.96$, hypotheses are accepted and the effect is remarkable; if $T \leqslant 1.84$, hypotheses are refused. Because the corresponding T-values are greater than 1.96, all the above hypotheses are supported.

5. RESEARCH DISCUSSION

5.1 Hypothesis analysis

Base on the path coefficients reported above, we present our analysis results as follows:

First, boundary spanning capability has a direct effect on culture differences. Moreover, boundary spanning capability has a strong negative correlation with culture differences. The path coefficient is -0.733. It shows the improvement of vendors' boundary spanning capability can reduce the culture differencesbetween client and vendor, which isconsistent with previous hypothesis.

Second, culture differences have a direct effect on profit, enhancement and reputation. Furthermore, culture differencesare negatively correlated with profit, enhancement and reputation. Their coefficients of correlation

are -0.326, -0.321 and -0.386, respectively. That means culture differences between client and vendor has a negative effect on outsourcing success and hinders the success of offshore outsourcing projects.

Third, boundary spanning capability has a direct effect on profit, enhancement and reputation. Their coefficients are 0.334, 0.339 and 0.433, respectively. It shows the high or low level of boundary spanning capability directly influences the profit, enhancement and reputation in offshore IS outsourcing, supporting our predictions.

5.2 Mediating effect

Table 5.1.   Results of mediating effect

Independent Variable	Mediator	Dependent Variable	Path Coefficients				
IV	M	DV	IV->DV	IV->M	IV+M->DV		Mediating Effect
					IV->DV	M->DV	
Boundary Spanning Capability	Culture Difference	Profit	0.588	-0.726	0.334	-0.326	Partial Mediation
			T=8.136	T=13.199	T=2.609	T=3.299	
Boundary Spanning Capability	Culture Difference	Enhancement	0.591	-0.726	0.339	-0.386	Partial Mediation
			T=8.047	T=13.199	T=3.427	T=2.794	
Boundary Spanning Capability	Culture Difference	Reputation	0.723	-0.726	0.433	-0.321	Partial Mediation
			T=14.157	T=13.199	T=4.498	T=3.667	
Independent Variable	Mediator	Dependent Variable	Path Coefficients				
IV	M	DV	IV->DV	IV->M	IV+M->DV		Mediating Effect
					IV->DV	M->DV	
Boundary Spanning Capability	Culture Difference	Profit	0.588	-0.726	0.334	-0.326	Partial Mediation
			T=8.136	T=13.199	T=2.609	T=3.299	
Boundary Spanning Capability	Culture Difference	Enhancement	0.591	-0.726	0.339	-0.386	Partial Mediation
			T=8.047	T=13.199	T=3.427	T=2.794	
Boundary Spanning Capability	Culture Difference	Reputation	0.723	-0.726	0.433	-0.321	Partial Mediation
			T=14.157	T=13.199	T=4.498	T=3.667	

In the research model, boundary spanning capability is the independent variable, outsourcing success (profit, enhancement and reputation) is the dependent variable, and culture differencesare the mediator. Mediating effect is an indirect effect of independent variable on dependent variable by influencing one or more mediators. According to Baron and Kenny [46], three conditions must be satisfied if the mediating effect exists. First, the independent variable is significantly associated with dependent variable. Second, the independent variable is significantly correlated with mediator. Third, the previously significant relation between the independent and dependent variable is less or not significant after adding the mediator. There are two possible situations. One, if the mediator is significantly associated with dependent variable while the independent variable is not, then full mediation is proved. Two, if both mediator and independent variable are significantly correlated with dependent variable, then partial mediation is indicated.

The results in Table 5.1 indicate that culture differenceshave partial mediating effect on the relationship between boundary spanning capability and outsourcing success in terms of profit, enhancement and reputation.

6.   CONCLUSION

6.1 Conclusions

This paper studies the influencing mechanisms of vendors' boundary spanning capability on the success of offshore IS outsourcing, which is mediated by culture differences.To address our research questions, we developed research hypotheses and empirically tested them in the context of offshore IS outsourcing by Chinese vendors. The data analysis supported our research hypotheses.

First, vendors' boundary spanning capability, as well as culture differences, have a direct effect on profit, enhancement and reputation in offshore IS outsourcing project.

Second, vendors' boundary spanning capability plays a direct role in influencing culture differences.

Last but not the least,culture differences have a partial mediation effect on the relationship between boundary spanning capability and outsourcing success.

6.2 Theoretical contributions

This paper made several important theoretical contributions, as summarized below.

First, from the cross-cultural perspective, this paper presented a theoretical model about the influence of vendors' boundary spanning capability on outsourcing success. This extended the boundary spanning theory in the offshore IS outsourcing and provided a theoretical basis for future research.

Second, this study proposed elements, contents and measurements of boundary spanning capability in the context of offshore IS outsourcing, demonstrating value of quantitative empirical research in the studies of boundary spanning.

Third, this paper studied culture differences between client and vendor and its negative impact on outsourcing success. That enriched the theoretical exploration of culture differences in offshore IS outsourcing.

Lastly, the research model and hypotheses developed in this paper were based on an empirical study and the data samples collected from Chinese companies in offshore IS outsourcing. Therefore, this research also offered some useful practical implications.

6.3 Limitations and future research

There are some limitations in this paper. The first limitation is the small sample size due to the limitation of respondents. Respondents are all concentrated in Beijing and most vendors are above the industry average in offshore IS outsourcing. As a result, the samples may not represent the entire population of vendors.

Second, our research model only includes the intermediary variableof cultural difference. The study of vendors' boundary spanning capability on outsourcing success is still in its infant stage. To avoid the complexity of modeling, the model presented in the study considers only culture differences, but the partial mediation effect of culture differences suggests the possible influences of other intermediary variables. A promising avenue in future research is to consider other intermediary variables such as language barriers and domain knowledge differences.

Third, control variables, such as project size or firm size, were not included in the construction of the theoretical model. Including those control variables in future studies may generate additional insights..

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