The Impact of the Vendor Firm's Competence on the Processes of IS Outsourcing Success: A Relationship Perspective

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Abstract

While the client-vendor relationship has been mainly examined from the service receiver's perspective in IS outsourcing literature, the vendor's factors have seldom been explored. To address this issue, our study adopts interaction process theory and develops the model focusing on the competence of the vendor as a key antecedent of the client-vendor relationship intensity and outsourcing success. Results from empirical data gathered from Korean firms indicate that the vendor competence factors identified in this paper positively impacts the client-vendor relationship and outsourcing success. The findings have significant implications for IS outsourcing practices and further research.

Key word: *IS Outsourcing, Relationship Intensity, Vendor Competence, Outsourcing Success.*

1. Introduction

Nowadays, there has been widespread acknowledgement that information technology (IT) has become the engine that drives the modern organization. Over the last decade, one of the more widespread developments in meeting an organization's IT needs is the growth in the practice of IS outsourcing [4]. IS outsourcing as a means of meeting organizational information systems needs is a commonly accepted and growing practice.

Recently, an emerging stream of research is how to effectively manage the relationship between the vendor and the client [12, 16, 17, 18]. IT outsourcing relationships have already received attention in the previous literature [13, 16, 17, 24]. Researchers have emphasized that the management of outsourcing relationship is very important for outsourcing success [8, 11, 16,24], and have examined the effects of the relationship on outsourcing success using various contextual variables based on several theories. The literature brought an agreement that the closer relationship between client and vendor plays a critical role in outsourcing success.

However, most of previous studies mainly concentrate on the organizations that choose to outsource. Further, they overlooked the importance of the competence or capability of vendor's firm, in spite of the fact that an understanding of both parties in outsourcing relationship is a must [12, 17, 23]. Though some researchers examined that vendor must possess such competence as capability [17, 22], their studies were only conceptual and exploratory ones without empirical investigations. This study intends to fill the gap.

2. Research Model and Hypothesis

2.1. Research Model

Our research is based on the value proposition in IT outsourcing theory of the Levina & Ross (2003) and IT business value of the Melvill et al. (2004).

Leviana & Ross (2003) explored the value proposition from the vendor's perspective using the case study. They suggested that client satisfaction is achieved when the application of core competencies to projects is enabled by a healthy client-vendor relationship, which is in part influenced by the vendor's expertise in managing client relationships. Competencies, in turn, grow through the vendor's firm-wide experience gained from controlling a large number and variety of projects, which, in turn, grow the vendor's reputation through its ability to satisfy customers' needs.

Melvill et al. (2004) also studied that IT business value from complementary resources of the firm may improve business processes or processes performance, which ultimately impacts organizational performance, while the processes was impacted by the partner firm's capability and

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environment. But Levina & Ross (2003) study did not clearly define the vendor's core competencies, and conduct an empirical investigation to check the impact of the vendor firm's competence on relationship and IS outsourcing success.

To overcome the problem, this study proposes a theoretical model by accumulating and consolidating the vendor's value theory [17] as well as IT business value theory [19]. The vendor's competencies enable the client and vendor to efficiently interaction each other, and to increase the relationship intensity, and to finally lead the outsourcing success. The research model proposed in this study is shown in Figure1.

Mainly referencing to Levina & Ross (2003)'s study, including Lee et al. (1995), and Bassellier et al. (2003)'s, we organize vendor firm's competence into three categories, i.e., the personnel capability, methodology competence, and client management capability. Though the focus of personnel capability has been made on technical IT skills, the importance of IS profession's client business domain understandings and interpersonal skills are also well addressed in the literature [5, 14].

The interaction processes draws upon from inter-organizational theory, IS, and marketing literature. Many researchers defined various variables related to interaction processes based on exchange theory; such as communication, information sharing, participation, cooperation, knowledge share, joint action, participation, conflict, and so on [1, 6, 8, 10, 20, 21]. We adopt three key attributes of interaction processes: communication quality, information sharing, collaborative participation based on the previous studies.

We defined the client-vendor relationship as a purposive strategic relationship between independent firms who share compatible goals, strive for mutual benefits, and acknowledge a high level of mutual interdependence [20]. Attributes of relationship or partnership are varied according to researchers: trust, dependence, commitment, and coordination [20]; trust, business understanding, benefit, risk share, conflict, and commitment [16]; communication, trust, cooperation, and satisfaction [8]. Bove & Johnson (2001) summarized the previous studies and identified two key attributes of inter-organizational relationships: trust and commitment. We adopt the trust and commitment as representative attributes variables for the relationship intensity between the client and vendor.

2.2. Research Hypothesis

Personnel capability not only reinforced customer relationship by ensuring that staffs understood and accepted accountability for meeting contractual obligations, but also developed communication skills to help staffs establish customer expectations and build close relationships [17]. Thus, the personnel capability has a positive effect on the interaction process of outsourcing relationship. That leads to the following hypothesis:

H1-1:The personnel capability is positively associated with information sharing.

H1-2:The personnel capability is positively associated with communication quality.

H1-3:The personnel capability is positively associated with collaborative participation.

The methodology provided by vendors was necessary for consistent delivery of solution to client problems in the process of IS outsourcing. This results in significant operational improvements and efficiencies in project processes, and improves relationship practices by defining and standardizing best practices [17]. Accordingly, the methodology competence has a positive effect on the interaction process.

H1-4:The methodology competence is positively associated with information sharing.

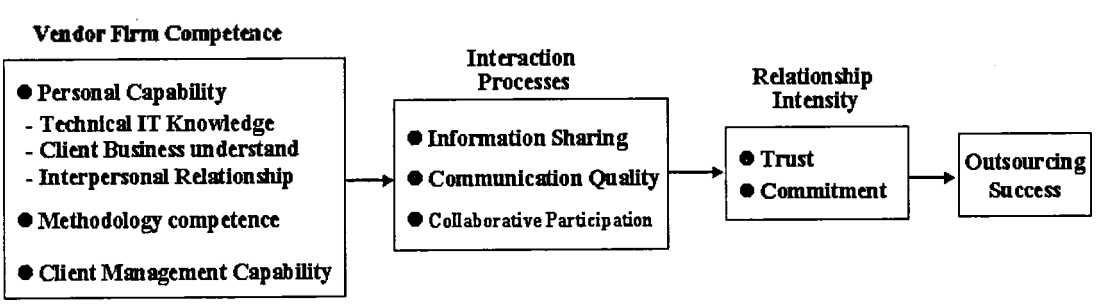


Figure 1. Research Model

H1-5:The methodology competence is positively associated with communication quality.
H1-6:The methodology competence is positively associated with collaborative participation.

The client management capability reduces the uncertainty, thereby creating clearer expectations and enhancing an acceptance of limits. Thus, It makes clients possible recognize services that exceeded contract requirements, and enhance the quality of interaction process through ongoing communication, information sharing, collaborative participation between the client and vendor [17].

Therefore, we can say that the client management capability has a positive effect on the interaction process of outsourcing process.

H1-7:The client management capability is positively associated with information sharing.
H1-8:The client management capability is positively associated with communication quality.
H1-9:The client management capability is positively associated with collaborative participation.

Information sharing refers to the extent to which critical, often proprietary, the information is communicated to one's partner [20]. In addition, the information sharing contractually agreed communication mechanisms such as regular meetings and report exchanges [12]. By sharing information, business partners are able to act independently in maintaining the relationship over time. Therefore, the information sharing is an important predictor of relationship intensity [20].

The communication is defined as the formal as will as informal sharing of meaning and timely information between a key aspect of information, while the communication quality includes the accuracy, timeliness, adequacy, and credibility of information exchange [20]. The communication quality is associated with the partnership quality [16].

The participation refers to the extent to which partner engages jointly in planning and goal setting [20]. Collaborative participation between partners plays a significant role in enhancing the sustainability of their relationship over time [10]. So, it is related to the partnership quality [20]. Thus, the following hypotheses are proposed.

H2-1:The information sharing is positively associated with trust.
H2-2:The information sharing is positively associated with commitment.
H2-3:The communication quality is positively associated with trust.
H2-4:The communication quality is positively associated with commitment.
H2-5:The collaborative participation is positively associated with trust.
H2-6:The collaborative participation is positively associated with commitment.

Many researchers have emphasized that the intensity of relationship in IS outsourcing is very important for outsourcing success [8, 11, 12, 16]. Accordingly, the relationship intensity can be a key determinant of outsourcing success. We hypothesize that:

H3-1:The trust is positively associated with outsourcing success.
H3-2:The commitment quality is positively associated with outsourcing success.

3. Research Methodology

3.1. Measures

This paper adopted constructs that had already been used and validated by other researchers. The vendor's competence-related variables were measured based on Levina & Ross (2003), Lee et al. (1995), and Bassellier et al. (2003)'s studies. The processes variables were developed based on the partnership theory by Mohr & Spekman (1994) and Lee & Kim (1999). The measures of the relationship intensity variables were based on the commitment-trust theory of Morgan and Hunt (1995) study. Finally, outsourcing success was measured in terms of strategic, economic, and technological outsourcing gains developed by Grover et al. (1996). A five-point Likert-style questionnaire was developed.

3.2. Data Collection

The initial version of the questionnaire was pretested by faculty members, managers in IT organizations, and IS workers in client firms.

Each item was reviewed by them to improve content and construct validity. The final questionnaire consisted of 51 items for 9 constructs. Data collection involved 25 outsourcing project teams between clients and vendors. Totally, we collected 185 responses, consisting of 84 from clients and 101 form vendors, from 20 outsourcing projects.

3.3. Reliability and Validity of the Measures

We analyzed the gathered data using the confirmatory approach. Before analyzing the

structural model, the validity of the measurement model was examined. Among 51 items, 12 were discarded due to lower consistency between the measurement items. Finally, 39 items were used for the final measurement analysis.

The reliability was then estimated by examining composite reliability. The value of composite reliability ranged from 0.842 to 0.883, as shown in Table 1, which is higher than a commonly used threshold for acceptable reliability, 0.7. The validity was assessed in terms of the convergent and discriminant validity of the measures [9]. Average variances extracted (AVE) by our measures ranged from 0.561 to 0.737, while its threshold for acceptable convergent validity is 0.5 [9]. For discriminant validity, it was assessed by looking at the square root of the average variance extracted. The square root of the average variance extracted for each construct was greater than the correlations between it and all other constructs, as described in Table 2.

4. Analysis and Finding

4.1. Measures of Model Fit

Before evaluating the structural equation model, we assessed the overall fit of the model to ensure that it was an adequate representation of the entire set of causal relationships. Three type of goodness-of-fit measures were assessed; absolute fit measures, incremental fit measures, parsimonious fit measures. As in Table 3, the chi-square result was nonsignificant (($\chi^2_{(884)} = 471$, p=0.00), whereas the GFI (0.78) and AGFI (0.73) were lower than threshold values. Normed Chi-Square (1.87) for the model was found to be within acceptable threshold limits (1.0–2.0 or 3.0). Thus, overall model fit measures indicate that this model is marginally acceptable

Table 1. Results of Reliability and Validity Analyses

Measure	Composite Reliability	AVE
Personnel capability	0.883	0.561
Methodology competence	0.887	0.606
Client management capability	0.845	0.647
Communication quality	0.893	0.737
Information sharing	0.842	0.641
Collaborative participation	0.879	0.644
Trust	0.847	0.735
Commitment	0.830	0.620
Outsourcing Success	0.881	0.598

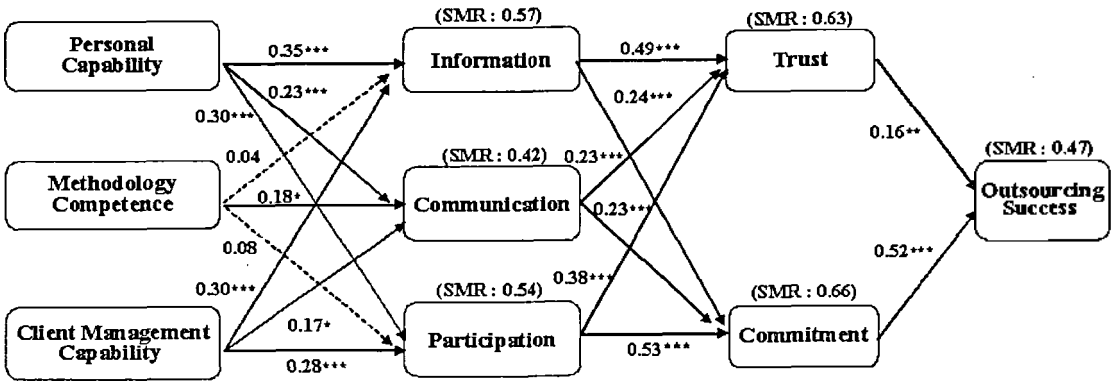
Table 2. Correlation between Constructions

	1	2	3	4	5	6	7	8	9
1. Personnel	0.75								
2. Methodology	0.56***	0.78							
3. Client	0.65***	0.70***	0.80						
4. Communication	0.55***	0.57***	0.59***	0.86					
5. Information	0.68***	0.59***	0.70***	0.48***	0.80				
6. Participation	0.66***	0.58***	0.67***	0.47***	0.56***	0.80			
7. Trust	0.62***	0.56***	0.64***	0.55***	0.70***	0.67***	0.86		
8. Commitment	0.62***	0.56***	0.64***	0.57***	0.62***	0.76***	0.63***	0.79	
9. Success	0.46***	0.42***	0.47***	0.42***	0.48***	0.54***	0.54***	0.63***	0.77

The members on the diagonal are the square roots of the average variance extracted
*p<0.10, **p< 0.05, ***p< 0.001

Table 3. Measures of Model Fit

Measures	Recommended Level	Research model
Absolute fit Measures		
Chi-Square; df (p-value)	p>0.05	471; 884 (P=0.00)
Goodness of Fit Index (GFI)	Higher	0.78
Root Mean Square Residual (RMR)	lower	0.049
Root Mean Square Error of Approximation (RMSEA)	<0.08	0.068
Incremental fit Measures		
Non-Normed Fit Index (NNFI)	>0.9	0.97
Adjusted Goodness of Fit Index (AGFI)	>0.9	0.73
Normed Fit Index (NFI)	>0.9	0.95
Parsimonious fit Measures		
Normed Chi-Square	1.0~2.0/3.0	1.87
Comparative Fit Index (CFI)	High value	0.98
Critical N (CN)	>100-150	185
Overall model fit Measures		
Normed Chi-Square	1.0~2.0/3.0	1.87



*p<0.10, **p< 0.05, ***p< 0.001

Figure 2. Results of the model analysis using LISREL

4.2. Testing Hypotheses

Path significance and its explanatory power were examined using LISERL 8.52. The hypotheses were estimated by calculating the significance of path coefficients. The level of significance $p<0.10(t>1.64)$ was employed.

Looking at the results of the impact of vendor's competence on interaction process, the personal capability (H1-1~H1-3) and client management capability (H1-7~H1-9) are significantly related to information sharing, communication quality and collaborative participation of interaction process respectively.

Regarding the methodology competence, it is significantly related to communication (H1-5), but insignificantly related to information sharing (H1-4) and collaboration participation (H1-7). Three variables of interaction process are significantly associated with trust and commitment (H2-1~H2-3), respectively.

Also, trust and commitment influence the success of outsourcing (H3-1, H3-2). The results of hypotheses testing are shown in Figure 2.

5. Conclusion

In this study, we examined the competence of vendor to check whether it is an antecedent of client-vendor interaction processes and outsourcing success.

The result indicates that the vendor competence positively influences the success of outsourcing through interaction process and relationship intensity. Especially, personal capability and client management capability are very important factors of outsourcing relationship and success.

The contributions of this study are to develop an outsourcing relationship model encompassing vendor firm's competence and to explain its impact on the intensity of the relationship between client and vendor as well as outsourcing success. We believe that the model provides a better understanding of the outsourcing relationship and of how it can be managed to ensure outsourcing success.

The first limitation of this study was the composition of the sample. Somehow it lacks randomness in the sense that the number of project units is limited, and they are selected mostly via personal acquaintances. However, the authors believe that it won't significantly affect the research findings considering the difficulties of obtainnig quality data in case questionnaires are randomly distributed. Second, this study was conducted as a snapshot research without considering the dynamic nature of outsourcing relationship.

On the base of this research, we suggest the following future directions. This study only examined vendor competence, but client's capability needs to be added into the interaction process. Second, the external environment needs to be considered for the effective management of outsourcing relationship.

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