An empirical study on the source of vendors’ relational performance in offshore information systems outsourcing

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\textbf{A R T I C L E  I N F O}\\
Article history:
Available online 2 May 2012

Keywords:
Offshore information systems outsourcing
Relational view
Client-specific capabilities
Trust
Learning about client

\textbf{A B S T R A C T}\\
Despite keen interest in long-term strategic outsourcing and attention to factors affecting outsourcing success, the examination on relational performance, i.e., the difference between a vendor's performance with a particular client and that with its average client base, can be hardly found. This study adopts a relational view to offshore information systems (IS) outsourcing from a vendor's perspective to explore the source of relational performance. Results highlight the importance of client-specific capabilities and trust as a self-enforcing governance mechanism in a vendor's relational performance in terms of service quality. Project management and client-specific capabilities act as substitute for each other in affecting relational service quality. In addition, while trust and learning about client contribute to client-specific capabilities, trust is also positively related to learning about client. These findings enrich our understanding of the source of outsourcing relational performance and contribute to the literatures on vendors’ capabilities in IS outsourcing.

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\section{1. Introduction}

Offshore information systems (IS) outsourcing is a contractual arrangement involving transferring IS development and related services to overseas vendors. In recent years, there has been an increasing trend for firms to realize their strategic aspiration through outsourcing initiatives. However, the success of such initiatives is largely determined by the vendor’s value proposition (Levina & Ross, 2003). In light of a growing popularity of long-term strategic partnership-oriented outsourcing (Lee & Kim, 1999; Quinn, 1999; Simeon, 2010), it is likely that a vendor can provide super value proposition for a particular client over time with the same capabilities. It reflects gains exclusive to a particular relationship, which can persist over time (Dyer & Hatch, 2006). It is referred to as relational performance (Mesquita, Anand, & Brush, 2008), which is the difference between a vendor’s performance with a particular client and that with its average client base (Dyer & Singh, 1998).

Prior studies have examined the effects of vendor relationships on a client’s competitive advantage (Kotabe, Martin, & Domoto, 2003), and advocated the importance of effective client–vendor relationship management for outsourcing success (Berger & Lewis, 2011; Levina & Ross, 2003; Rai, Maruping, & Venkatesh, 2009).

However, it is not clear under what inter-firm linkage conditions a vendor can provide super value proposition for a given client relative to its average client base, i.e., relational performance. Although various aspects of outsourcing outcomes and their determinants have been investigated (Berger & Lewis, 2011; Blumenberg, Wagner, & Beimborn, 2009; Dibbern, Gole, Hirsheim, & Jayatilaka, 2004; Ethiraj, Kale, Krishnan, & Singh, 2005; Lacity, Khan, Yan, & Willcocks, 2010), relational performance and its impacting factors have been largely overlooked in the extant literature.

This study adopts a relational view (Dyer & Singh, 1998) to offshore IS outsourcing from the vendor’s perspective, exploring the source of relational performance. According to the relational view, partners in exchange relationships can potentially generate relational performance through relation-specific capabilities investment, inter-partner knowledge sharing, and employing an effective self-enforcing governance mechanism (e.g., informal safeguard of trust, Dyer & Singh, 1998). A relational view to offshore IS outsourcing can enrich our understanding of the source of relational performance, which helps clients to reap more benefits from their vendor in the long term. Correspondingly, we investigate the contributions of a vendor’s client-specific capabilities, learning about client, and trust to relational performance in this paper.

Another oft-mentioned factor contributing to outsourcing performance is vendors’ capabilities. Offshore IS outsourcing critically depends on the vendor’s capabilities. Two sets of distinct capabilities, project management and client-specific capabilities, have been found critical for outsourcing success (Ethiraj et al., 2005;
Feeny, Lacity, & Willcocks, 2005; Levina & Ross, 2003). However, our understanding of the marginal contributions of the different types of capabilities to outsourcing performance is still limited (Ethiraj et al., 2005). Do the client-specific capabilities and project management capabilities have the same marginal contributions to relational performance in offshore IS outsourcing? Do they play a substitute or complementary role in increasing relational performance? These questions are not well answered in prior literature. Understanding the contribution of each capability helps vendors decide what capabilities to develop with limited learning, financial, and managerial resources. Therefore, we attempt to compare their marginal contributions to relational performance.

This research is conducted in the context of China-based offshore IS outsourcing business. The context is appropriate for developing theories and practical guidelines for several reasons. First, China represents a typical emerging economy, where most vendors have experienced rapid capabilities development (Zheng, Willcocks, & Yang, 2010), which is ideal for this research on the vendor's capabilities and relational performance. Most existing literature adopts the client's perspective, which makes it hard to observe and test the relational performance and antecedents of it. Second, the focal context is a knowledge extensive business, which entails a high level of human resource specificity (Williamson, 1985). Most Chinese vendors, with a relationship-oriented business culture, are involved in long-term strategic partnerships, which facilitate learning about client, trust and client-specific capabilities development, and therefore relational performance generation. Lastly, the extant literature focuses on the offshore IS outsourcing to India vendors, especially U.S.–India business, whereas offshoring to Chinese vendors, which are mostly small to medium sized with limited resources, is under studied. Therefore, this research can broaden our understanding of different offshoring settings.

This paper is organized as follows. Next, Section 2 presents a literature review and the theoretical framework for this research. Subsequently, Section 3 describes the research methods including the measurement development process and survey. Then, results of data analysis are offered in Section 4. Section 5 follows with the discussion and conclusions.

2. Theoretical framework

2.1. Relational view of offshore IS outsourcing

Because of the challenges in cross-nation collaboration, how to achieve success has been one of the central issues in offshore IS outsourcing literature (King & Torkzadeh, 2008; Lacity et al., 2010). IS research on outsourcing success has considered various aspects, such as client characteristics, vendor characteristics, and the vendor-client relationship (Levina & Ross, 2003). Particularly, considerable efforts have been devoted to investigating the role of a vendor's value proposition potential and the relational factors in outsourcing success, such as the vendor's capabilities in providing value proposition (Levina & Ross, 2003), partnership quality (Lee & Kim, 1999), relationship governance (Gopal & Koka, 2009; Poppo & Zenger, 2002), cultural differences (Berger & Lewis, 2011), social embeddedness (Rai et al., 2009), and relational asset and capability (Fink, 2010).

However, despite a growing interest in these relational factors and vendors' value proposition, it remains unclear under what inter-firm linkage conditions vendors can offer super value proposition for a given client. As outsourcing arrangement runs towards strategic oriented (Willcocks & Kern, 1998), this gap limits our understanding of how clients can achieve competitive advantage through outsourcing initiatives. By considering what antecedents promote vendors' super value proposition, both vendors and their client can start to build strong collaborative relationships aimed at achieving competitive advantage.

This paper specifically demonstrates that certain factors pertaining to a specific relationship can result in different levels of vendor performance among different clients of the same vendor. We adopt the relational view to explore the source of relational performance heterogeneity from the vendor's perspective (Dyer & Singh, 1998; Lavie, 2006). The relational view can be a relevant and sound theoretical lens for investigating relational performance owning to its emphasis on long-term strategic collaboration with repeated exchanges and its focus on the role of idiosyncratic relational factors pertaining to a specific relationship in relational performance generation.

The relational view was proposed to explain the differences in interorganizational performance across exchange partnerships. According to the relational view, those relational factors reflecting idiosyncratic inter-firm linkages can be the clues to understand the source of performance heterogeneity across trading partnerships (Dyer & Singh, 1998). Relational performance can be created through investing in relation-specific assets and capabilities, knowledge sharing, and setting up effective relationship governance mechanisms to safeguard the relational performance gains (Dyer & Singh, 1998). Evidence has also been found in strategic alliances concerning their importance in relational performance generation (Dyer & Chu, 2003; Dyer & Hatch, 2006; Dyer & Noboeoka, 2000; Kale, Dyer, & Singh, 2002).

2.2. Source of outsourcing relational performance

Relationship-specific assets in the relational view can be operationalized as client-specific capabilities in our focal context. The relational view has recognized inter-firm learning as another source of relational performance. Those relationships with effective knowledge-sharing mechanisms facilitating interorganizational learning are suggested to generate more relational performance. From the vendor's perspective, we argue that learning about client is such a critical source of relational performance in outsourcing. Governance is also deemed to be a critical enabler for the creation of relational performance, especially the informal self-enforcing safeguard of trust. Trust lies in the center of the outsourcing relationship literature. Trust can be more conducive to safeguard and generate relational performance than the third-party enforcing mechanisms (Dyer & Singh, 1998). As such, it is incorporated as another source of outsourcing relational performance.

The three factors mentioned above, i.e., client-specific capabilities, learning about client, and trust, cover three sources of relational performance put forth by Dyer and Singh (1998). They are coherently linked in that client-specific capabilities and learning about client can be the basic conditions for relational performance generation, whereas trust can partially directly generate relational performance through lowering transaction cost and boosting value-creation initiatives, and partially safeguarding relational performance generation through motivating client-specific capabilities investment and promoting learning about client.

Apart from client-specific capabilities, previous work has also identified another set of vendor's capabilities, project management capabilities, critical to offshore IS outsourcing success (Ethiraj et al., 2005; Levina & Ross, 2003). Client-specific and project management capabilities are different in nature and usage scope, and have different explanatory power in relational performance (Mesquita et al., 2008). Therefore, we also attempt to compare their relative contributions to relational performance.

It is imperative for vendors to provide high-quality service to cater for their client's competitive advantage aspiration (Gopal & Koka, 2009). As such, outsourcing service quality is central to both the vendor and client's concern (Poston, Kettinger, & Simon, 2009;
Ramachandran & Gopal, 2010). Previous studies have also deemed service quality as one of the critical indicators for outsourcing success (Grover, Cheon, & Teng, 1996; Kim, Chen, & Aiken, 2005).

Clients tend to form long-term partnerships with their vendor, which facilitates the vendor’s learning about the client’s specific requirements and forging client-specific capabilities, thereby achieving higher service quality (Grover et al., 1996). Therefore, we adopt relational service quality, i.e., a vendor’s service quality heterogeneity across different clients, to capture the relational performance.

Owning to the intangible and process nature of service, service quality evaluation can be difficult, especially for IS outsourcing service. Three dimensions seem particularly relevant to the focal context, service reliability, responsiveness, assurance of service level, and can be taken as the cues to capture service quality in offshore outsourcing (Grover et al., 1996; Kim et al., 2005; Parasuraman, Zeithaml, & Berry, 1988). Reliability refers to performing the promised service dependably and accurately, and it ensures the service level that the client expects. Responsiveness means the timeliness and willingness to help and to provide service. Assurance shows the vendor’s courtesy and capabilities to inspire the client’s trust.

### 2.2.1. Learning about client

Learning about client refers to a vendor’s acquisition of knowledge about a specific client, and it is necessary for better cooperation through understanding the particular partner (Doz & Hamel, 1998; Inkpen & Currall, 2004; Tsang, 1999). It includes the understanding of the collaboration environment, objectives and requirements, work process, and business domain of the client (Doz & Hamel, 1998).

According to the relational view, a partner’s inter-organizational learning in a partnership is deemed essential for achieving relational performance (Dyer & Singh, 1998; Mesquita et al., 2008). The partners generally are the most important source of new ideas and know-how. Vendors’ learning about client results in better service quality for the particular client. Vendors with a higher level of learning about client can better understand a client’s requirements, environment, expectation, and hence focus on those activities that improve the service quality (Zhao & Stank, 2003). Additionally, learning about client improves the level of information sharing, which is generally argued as an important antecedent of outsourcing performance (Blumenberg et al., 2009; Lee, 2001; Rai et al., 2009). However, performance gains through learning in a particular relationship have a certain level of specificity, which means that it is difficult to dissipate to other exchange relationships through knowledge spillover (Dyer & Hatch, 2006). In sum, learning about client can be a significant enabler for outsourcing relational service quality, as hypothesized below:

**H1.** A vendor’s learning about client will have a positive impact on the vendor’s relational service quality.

### 2.2.2. Trust

Trust refers to a positive judgment of the level of credibility of one’s partner. Trust may be a result of mutual affect based on interaction, or a cognition that the partner will not do harm based on understanding and enough information of the partner’s opportunism inclination (McAllister, 1995). This paper focuses on a vendor’s trust in the client.

Research in relational view has advocated the importance of informal safeguarding governance mechanisms in relational performance (Dyer & Singh, 1998). Trust is in the center of such informal safeguarding mechanisms. It plays a key role in reducing transaction cost related to conflict management, monitoring, and bargaining. Trust may promote relational performance through safeguarding specialized assets investment and providing incentives to devote into value-creation activities, thereby generating and safeguarding relational performance.

There has been substantial evidence supporting the contribution of trust to IS outsourcing success (e.g., Lee, Huynh, & Hirschheim, 2008; Poppo & Zenger, 2002). A vendor’s trust in a given client may motivate the vendor to focus on those value-creating activities that can provide better service for the client, rather than unnecessary efforts devoted to conflict settlements or prevention. Therefore, we propose:

**H2.** A vendor’s trust in the client will have a positive impact on the vendor’s relational service quality.

### 2.2.3. Vendor’s client-specific and project management capabilities

Client-specific capabilities refer to a stable pattern of collective activities and routines (Zollo and Winter, 2002) in dealing with or serving a specific client, generated through repeated interaction with this client (Ethiraj et al., 2005; Levinia & Ross, 2003). It can be considered as a result of investment in human assets specificity, which is commonly contextually embedded in tacit knowledge and routines that are developed through accumulating specialized information and know-how after long-term repeated interaction with a specific client (Dyer & Singh, 1998; Ethiraj et al., 2005). It reflects mutual idiosyncratic understanding of the effective communication and collaborative routines (Asanuma, 1989; Fichman & Levinthal, 1991; Simeon, 2010), which has a level of specificity in the dyad relationship. Client-specific capabilities allow vendors to deal with a given client efficiently and effectively, thereby generate surplus performance.

Project management capabilities are skills in software development, effective project planning and controlling according to established processes and methodologies (Ethiraj et al., 2005). It can be re-deployed across different clients, and therefore is not client-specific. It generally includes software design and development capabilities, capabilities in accurate project planning, and capabilities to control project quality, schedule, and cost.

According to the resource-based view (RBV), firms that have forged valuable, rare, non-imitable, and non-substitutable capabilities can gain competitive advantage (Barney, 1991). Both client-specific and project management capabilities are valuable and costly to imitate, which can be leveraged to achieve superior performance (Asanuma, 1989; Zhao & Stank, 2003). However, as Mesquita et al. (2008) suggested, the relational view can be more important in explaining superior relational performance than the RBV perspective. Based on the relational view, partnership exclusive relational performance is more critically dependent on client-specific capabilities than on project management capabilities (Mesquita et al., 2008). The importance of client-specific capabilities for relational performance can be attributed to the following reasons.

First, client-specific capabilities enable a vendor to capture its client’s idiosyncratic working practices and routines, and hence deal with them in a more effectively way (Simeon, 2010), whereas project management capabilities can only help in a general way. The contributions of client-specific capabilities to relational performance have been documented in supplier–buyer relationships. They can promote relational performance through higher communication efficiency and effectiveness, lower transaction cost, greater service differentiation, higher quality, and faster service responsiveness (Asanuma, 1989; Dyer & Singh, 1998). Client-specific capabilities can be particularly valuable when a client’s requirements are expressed in an intricate manner as observed in communication with Japanese clients. As a result, the vendor will be more effective and proactive in addressing a particular client’s...
requirements and providing a better service. In addition, client-specific capabilities can also promote process integration between the partners, resulting in seamless collaboration and effective client service.

Second, the specificity nature of client-specific capabilities motivates the vendor to derive value from existing client-specific capabilities. Client-specific capabilities are tailored and specific to a dyad relationship, and unlikely to generate the same level of performance outside the dyad relationship through knowledge spillover (Dyer & Hatch, 2006). Therefore, compared to re-deployable project management capabilities, vendors are more willing to fully devote existing client-specific capabilities to the present offshoring relationship aiming at fully extracting value from the existing client-specific capabilities, which promotes relational performance more significantly. As such, we expect:

**H3a.** A vendor’s client-specific capabilities have a stronger positive impact on the relational service quality than project management capabilities.

The effects of client-specific capabilities on relational performance are moderated by the magnitude of project management capabilities. In other words, contributions of client-specific capabilities to relational performance should be guaranteed by some level of project management capabilities. For those vendors with a higher level of project management capabilities, the positive effects of client-specific capabilities on relational performance can be achieved to a larger extent as they are armed with greater expertise and skills to address a given client’s requirements (Zhao & Stank, 2003). In contrast, those vendors armed with limited project management capabilities will find it tough to provide a high level of service quality even if they have forged a high level of collaborative know-how and know well what should be done for the particular client. Therefore, it is hypothesized:

**H3b.** A vendor’s project management capabilities positively moderate the relationship between its client-specific capabilities and its relational service quality.

### 2.3. Effect of trust on learning about client

The importance of trust in inter-organizational learning has been well documented (Dhanaraj, Lyles, Steensma, & Tihanyi, 2004). Trust promotes learning about client for the following reasons. First, trust can facilitate learning about client through increasing a vendor’s common sense of value and identity of the client’s organizational culture, requirements, and goals. The common identify and mutual understanding brought about by trust helps the vendor absorb and utilize the acquired knowledge. Second, trust promotes the vendor’s willingness to ask for help and acquire knowledge from the client. With trust in the client, the vendor is more willing to ask for help and follow the advice of the client, which leads to changes in behavior and mentality, resulting in a more effective learning (Szulanski, Cappetta, & Jensen, 2004). Lastly, trust can facilitate learning about client by reducing the needs and costs of knowledge verification (Levin & Cross, 2004; Szulanski et al., 2004). Therefore, we propose:

**H4.** A vendor’s trust in the client will have a positive impact on learning about client.

### 2.4. Effects of trust and learning about client on client-specific capabilities

There is a long history of research on vendors’ capability development. Early researchers emphasized the accumulated process of learning-by-doing in capabilities development (Nelson & Winter, 1982). Capabilities can be developed not only through learning-by-doing, but also from deliberative investment in active learning mechanisms aimed at knowledge acquisition (Zollo & Winter, 2002). In this paper, we argue that a vendor’s collaborative knowledge acquisition in terms of learning about client and trust contributes to the vendor’s client-specific capabilities development.

#### 2.4.1. Trust

Based on the relational view, client-specific capabilities development is costly and relation-specific, which entails necessary safeguarding mechanisms. Trust may be deemed as such a mechanism (Dyer & Singh, 1998). It has been suggested that trust is highly associated with partners’ specific asset investments in buyer–supplier relationships (Suha & Kwon, 2006). It is likely that over time, partners appeal to trust rather economic safeguards to protect specific assets. Therefore, trust can promote vendors’ willingness to invest in client-specific capabilities.

In addition, trust can enable a vendor’s client-specific capabilities development by providing a better learning environment. Under a mutual trust environment, the client may actively provide support for the vendor’s client-specific capabilities development, such as training in business domain knowledge. The vendor will also show a high learning intention, and hence forge more client-specific capabilities (Jarvenpaa & Mao, 2008). Following this argument, we expect:

**H5a.** A vendor’s trust in the client will have a positive impact on the vendor’s client-specific capabilities.

#### 2.4.2. Learning about client

It has been suggested that capabilities development is not merely through passive experience accumulation (Simontin, 1997). It relies heavily on the effectiveness of knowledge acquisition mechanisms (Tsang, 2002). Those who actively practice relationship management (Tsang, 2002) and invest in the mechanisms aimed at capturing and coding tacit knowledge from the alliance experience will acquire more collaborative know-how from the interaction experience (Kale & Singh, 2007). Lessons learned from partnering must be internalized into specific know-how before they can effectively guide future action (Simontin, 1997). These insights highlight the critical role of knowledge acquisition in client-specific capabilities development.

In our research setting, a vendor’s knowledge acquisition through learning about client can be leveraged to forge client-specific capabilities. Learning about client ultimately helps vendors work out complex idiosyncratic collaborative routines in which their client-specific capabilities will evolve and be developed (Mesquita et al., 2008). Thus, we conclude:

**H5b.** Learning about client will have a positive impact on the vendor’s client-specific capabilities.

According to the foregoing discussion, the research model is depicted as Fig. 1.

### 3. Methods

#### 3.1. Measurement

The measures were developed and validated through the following processes.

First, some measures were developed based on previously validated ones, whereas the rest were generated from interviews with industry experts. The questionnaire was pre-tested for content validity by experts on IS outsourcing. Then it was showed to an expert in IS outsourcing and two doctoral students for feedback, through which the measurements were refined (e.g., dropping the
reverse-worded items) and content validity and wording (such as overloading and ambiguity problems) were improved.

Second, the questionnaire was refined according to the results of two rounds of qualitative assessment via card sorting (Moore & Benbasat, 1991). Items were written on small notes with each item on one card. In the first round, after randomly mixing the cards, four judges (graduate students specializing in knowledge management or IS outsourcing) were asked to separate the cards into categories according to their own understanding, and then labeled the corresponding categories independently. The number of categories divided by the four judges was consistent with the number of constructs, and each individual judge’s labels reflected the meaning of the underlying constructs. The overall correct item placement ratio was high. The problematic items were dropped. The more confirmatory second round of card sorting was conducted by a practitioner in offshore IS outsourcing and a doctoral student with relevant industry experience. They were provided with cards as well as the definitions of constructs to be measured, to classify these items into target constructs according to their understanding independently. There was no significant misclassification. Through assessment and refining, the content validity and discriminant validity were deemed acceptable.

Lastly, a pilot test was conducted through a convenience sample of 33 project managers or team leaders with experience in dealing with clients from fourteen local firms specialized in offshore IS outsourcing. Items with relative low item-total correlation were dropped. An exploratory factor analysis using the principal component method and varimax rotation also showed that, for each group of items measuring one construct, only one component was extracted.

3.1.2. Relational service quality

We measured offshore IS outsourcing service quality from the vendor’s perspective. It was measured based on three items adapted from the instrument of SERVQUAL (Parasuraman et al., 1988) according to interview transcripts, covering three dimensions, i.e., service reliability, responsiveness, assurance of service level, with each dimension measured by a single item. This approach has also been adopted by relevant prior literature in outsourcing (Gopal & Koka, 2009; Grover et al., 1996; Kim et al., 2005). Following Mesquita et al. (2008), relational service quality was extracted by subtracting the average of a certain vendor’s service quality for all clients (i.e., average of the service quality among the sub sample of a vendor) from the vendor’s reported service quality for “this” client.

3.1.3. Source of relational service quality

There exists little guidance for measuring client-specific capabilities and project management capabilities in prior empirical studies. Therefore, we generated new items according to the interview transcripts based on operational definitions of the two capabilities. Client-specific capabilities were measured by four items covering the following dimensions: idiosyncratic communication and collaborative routines, common understanding of effective communication and collaborative routines, familiarity with and deep-understanding of the client’s specific or tacit requirements and environment, and proficiency in dealing and collaborating with the client. Four items were generated to measure project management capabilities covering the following dimensions: cost and schedule estimation skills, quality control skills, cost control skills, and software development productivity.

Because of the tacit nature of knowledge, it is difficult to measure knowledge acquisition. In empirical studies, respondents were typically asked to report the perceived level of knowledge learned from a source (Dhanaraj et al., 2004; Lyles & Salk, 1996; Tsang, 2002). A similar approach was adopted in the measurement of learning about client. However, despite the recognized importance of domain knowledge acquisition (Chua & Pan, 2008; Faraj & Sproull, 2000), there exist few studies on learning about client. In offshore IS outsourcing, at least three collaboration knowledge dimensions are needed to maintain successful outsourcing collaboration: collaboration environment (such as the client’s development environment and organizational culture), domain knowledge, and processes of collaboration (Doz & Hamel, 1998). Four items were developed to measure the vendor’s perceived level of learning about above dimensions based on interview transcripts, with each dimension measured by one or two items.

Moreover, the measurement of trust consists of four items covering both the dimensions of affect trust and cognition trust (McAllister, 1995), including three items revised from McAllister (1995) and one item generated from the interview material.

Lastly, a seven-point Likert-style questionnaire was developed. The full questionnaire is showed in the Appendix A. Many of the questions were adapted from existing items in English. They were translated into Chinese by the first author in a meticulous manner. The second author checked the accuracy of the translation by comparing with the original English version, and made sure the Chinese translation was consistent.

3.2. Sample and data collection procedures

A survey was adopted to test the hypotheses. Ideally the respondents should be project managers or team leaders who are doing projects for different clients and with experience in dealing with clients and responsible for at least one module of the project in the team. In the instruction part, respondents were asked to answer the questions based on a specific client.

A convenience sample was used, consisting of eight IT outsourcing firms based in Beijing and Chongqing city. We contacted an executive in each company through the researchers’ personal network, and requested their assistance and permission to distribute questionnaires to the focal respondents. This top-down approach was considered effective to ensure response from the busy project managers. It also ensured that the respondents were the information providers whom we targeted, and data quality. A total of 98 questionnaires were obtained through this way. The questionnaire was also distributed directly to project managers or team leaders through personal networks and referrals, which resulted in additional 21 responses. At last, a total of 119 questionnaires were collected from seventeen vendors, with 88% of the respondents above the team leader level. These vendors ranged from leading vendors including two listed companies in New York and Hong Kong Stock Exchange, respectively, two small-sized vendors with about 100 employees still in their start-up stage. The majority of the vendors were medium-sized and rapidly developing players in Chinese markets.
Almost one half of the sampled projects undertaken by the vendors involved one or more kinds of upstream work, e.g., systems analysis, conceptual design, system integration and integration tests. About eighty percent of the clients were Japanese. Moreover, the mean duration of client history was almost four years, and the average number of previously completed projects for the current client was about seven. The results suggest that the vendors were engaged in a long-term relationship with their offshore clients, which facilitates the relational performance development.

4. Data analysis and results

To make full use of sample information, the sporadic missing values were replaced by the average value. PLS method was adopted to examine the measurement model and structural model with SmartPLS 2.0 developed by Ringle, Wende, and Will (2005). The PLS method is appropriate for this research because of its ability to work with relatively small sample sizes, our needs to test moderating effects, and the exploratory nature of this study as the first attempt to examine relational performance in offshore IS outsourcing (Chin, Marcolin, & Newsted, 2003; Marcolides, Chin, & Saunders, 2009). Bootstrapping of the 119 cases was performed with 200 samples to draw the significance level.

4.1. Measurement validation

Table 1 presents the correlations of constructs and the reliability coefficients. It shows that the values of Cronbach’s α and composite reliability are all well above the recommended value of 0.7. Therefore, scale reliability is acceptable. In addition, AVE are greater than 0.666. The square roots of AVE in diagonal terms are greater than any of the elements in the row or the column corresponding to that number, which suggests that the discriminant validity is acceptable.

As in other research based on all self-reported data, common method bias can be a potential problem. Following Podsakoff, MacKenzie, Lee, and Podsakoff (2003), we enforced the procedural remedy through protecting respondent anonymity, counterbalancing question order, and improving scale items, such as providing examples to help the respondents understand the unfamiliar concept of routine. In addition, statistical assessments were performed with multiple methods. First, all items were put together to perform a Harman’s single factor test. Results show that single-factor model did not well match the sample data, while the multi-factor model matched the sample data with significant improvement. Thus, there seemed to exist no common factor. Second, the technique of controlling for the effects of an unmeasured latent method factor suggested by Podsakoff et al. (2003) was adopted. We tested the theoretical model with and without a latent common method variance factor (LCMVF) with all of the measures as indicators, following the PLS modeling approach of Liang, Saraf, Hu, and Xue (2007) and Herath and Rao (2009). As shown in Table 2 and Fig. 2, the loadings and structural path coefficients in the two models are of similar magnitude and with same significance level. The measurement loadings are all well above 0.7. In the model with LCMVF, the average weight of LCMVF is 0.049, far less than that of substantive factors (0.302). In addition, it has been suggested that the problem of common method bias can be less serious for research with a moderation effect (Dong, Xu, & Zhu, 2009). Therefore, we conclude that common method bias may not be a serious concern in this research.

4.2. Structural model

To test the moderating effect of project management capabilities, we generated four new interaction indicators to measure the interaction term of client-specific*project management capabilities through a matching way (Marsh, Wen, & Hau, 2004). The matching process is according to the values of loading, following a “high to high” and “low to low” rule. To avoid serious collinearity problem, the new interaction indicators were calculated after the items of the two types of capabilities were transformed to Z scores.

Results of the structural model are showed in Fig. 2, including structural coefficients for models with and without LCMVF, and R-square for model without LCMVF. The R-square value of relational service quality is high at 0.545, and that of client-specific capabilities and learning about client are 0.539 and 0.208, respectively.

As Fig. 2 shows, three out of the four hypothesized factors contribute to relational service quality significantly, i.e., trust, client-specific and project management capabilities. However, the impact of learning about client is not significant. In addition, the stronger influence of client-specific capabilities than project management capabilities is not supported. The magnitude of the impact of project management capabilities (0.318) seems to be even higher than that of client-specific capabilities (0.222). The results indicate
that H2 is supported and H1 is not supported in this paper. And H3a is only partly supported.

Results also show a significant interaction effect of project management and client-specific capabilities on the relational service quality. However, the result is opposite to H3b. Project management capabilities negatively moderate the relationship between client-specific capabilities and relational service quality. As project management capabilities increase, contributions of client-specific capabilities to relational performance decrease.

In addition, results also highlight the importance of trust in improving learning about client, indicating H4 is supported.

Lastly, this study reveals that trust and learning about client both have a significant impact on client-specific capabilities. Therefore, H5a and H5b are supported. Combined with the insignificant impact of learning about client on relational service quality, it seems that client-specific capabilities fully mediate the effect of learning about client on relational service quality. Learning about client is significantly related to the vendor’s capabilities development rather than relational performance improvement.

Notably, results also indicate the importance of trust for relational service quality. Trust not only has a direct effect on relational service quality, but also it imposes an indirect influence through the partial mediator of client-specific capabilities.

The hypothesis test results are showed in Table 3.

<table>
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<th>Constructs</th>
<th>Items</th>
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### 5. Discussion and conclusions

#### 5.1. Discussion

This study adopts the relational view to explore the source of relational performance heterogeneity in offshore IS outsourcing, in terms of vendors’ service quality. Results indicate that relationships with client-specific capabilities and trust as an informal self-enforcing safeguarding mechanism will create superior relational performance, i.e., the performance gains above the performance between a vendor and its average clients. The importance of trust for outsourcing performance has been well documented in prior studies (e.g., Mao & Deng, 2008). However, these studies are mostly concerned with the impact on re-deployable performance. Our results show that trust, as an informal safeguarding mechanism, is also important for relational performance.

Results do not support the hypothesis that client-specific capabilities are more important for relational service quality than project management capabilities. Project management capabilities are also important for relational performance. One potential reason may be that the current vendors located in emerging markets such as China are still under the constraints of weak project management capabilities (Jarvenpaa & Mao, 2008). At present, the re-deployable project management capabilities can be a basic condition for providing a satisfactory service level for a given client. Additionally, results indicate that the two types of capabilities play a substitute role in relational performance. The potential reason may be that there exits a combination of lower project management capabilities and higher client-specific capabilities, or a combination of lower client-specific capabilities and higher project management capabilities in achieving a high level of relational performance (Zhao & Stank, 2003).

Results also show that learning about client significantly contributes to client-specific capabilities rather than relational performance. Learning about client impacts on relational performance mainly through the vendor’s client-specific capabilities development. It suggests that the direct effect of learning about client on
performance is not as strong as the influence of that on the capabilities evolution. Relational performance can be promoted by the acquired knowledge only after the knowledge being fully utilized to forge capabilities.

This paper suggests two important enablers for a vendor’s client-specific capabilities development, i.e., learning about client and trust. These findings contribute to the client-specific capabilities literature. Traditionally, client-specific capabilities are mainly deemed to be a result of repeated interaction with a specific client (Ethiraj et al., 2005; Levina & Ross, 2003), with little attention on what may promote client-specific capabilities development from a given interaction experience. The similar long-term collaboration experience cannot guarantee the vendor’s achievement of the same amount of specific collaborative know-how (Tsang, 2002).

Our results suggest that learning about client might be one of the critical factors influencing client-specific capabilities. Vendors should carefully consider the role of learning about client when they internalize collaboration experience into client-specific capabilities. In addition, our results also suggest that client-specific capabilities development, as a kind of costly and human assets specificity investment, entails the informal safeguarding mechanism of trust.

Lastly, this paper also highlights the importance of trust in learning about client, which is similar to findings in the knowledge acquisition literature (e.g., Szulanski et al., 2004).

5.2. Contributions and managerial implications

This paper contributes to IS outsourcing literature by empirically examining the source of vendors’ relational performance based on the relational view. It suggests a new approach to investigate the antecedents of outsourcing performance. Results imply that a vendor may be on its outsourcing value proposition possibility frontier for each client but the actual value proposition level will be different for each client.

In addition, we also contribute to the capabilities theory in IS outsourcing literature. We compare the marginal contributions of a vendor’s different types of capabilities to offshore IS outsourcing relational performance, and reveal that client-specific capabilities and project management capabilities play a substitute role in relational service quality, which enriches our understanding of the role of a vendor’s capabilities. Notably, we also advance research on client-specific capabilities development by revealing the role of trust and learning about client in client-specific capabilities development.

In fact, this paper also contributes to general interorganizational exchange relationship literature. Although the relational view advocates a promising perspective to explain interorganizational competitive advantage, the empirical evidence is extremely limited. We show valuable evidence in terms of the source of relational performance and its antecedents.

Managerial implications lie in the following aspects. First, our results advocate joint effort from both the vendor and client to achieve relational performance improvement. For vendors, investing in client-specific capabilities and maintain trust as an effective informal self-enforcing safeguarding mechanism can result in attractive returns in terms of better service quality. Although trust development can be a challenging long-term task, a vendor may consider promoting mutual trust through mechanisms such as effective communication, inter-firm adaptation, mutual visiting, and cultural blending. As to the client-specific capabilities, in addition to knowledge sharing through learning about client and trust building, vendors can invest in human resource capabilities such as recruiting veterans who are experienced in dealing with clients and familiar with the client’s domain knowledge, business routines, and organization culture, or those who have working or education experience on the client’s country side. Additionally, undertaking more projects from a given client can be the key to accumulate client-specific capabilities.

As for the client, our results suggest that it is in the client’s best interest to actively participate in knowledge sharing to facilitate the vendor’s learning about client and promote the vendor’s trust and client-specific capabilities level. Our results also suggest that the client can reap value by increasing their dependence on few key vendors, which facilitates knowledge sharing and motivates client-specific capabilities investment. The practices of Japan–China offshoring business provide an interesting pattern for practical guidance. The Japanese clients tend to develop a long-term strategic alliance relationship with few vendors, and actively provide support for vendors’ learning about client through various ways, such as mutual visiting, sponsoring training, providing project management tools, manuals, and offering repeated projects, which helps vendors to develop client-specific capabilities and promotes mutual trust.

Second, the vendor should carefully consider what capabilities to develop as the client-specific and project management capabilities can substitute each other in relational service quality improvement, especially for vendors still in their early stage of development with limited managerial and financial resources. One suggestion is to devote into partnership relationships with few clients through which client-specific capabilities investment can be limited and thereby develop more project management capabilities with surplus resources. Another option is to look into the trade-off between the two sets of capabilities investment according to strategy plan and the armed capabilities level.

5.3. Limitations and future research

Several limitations need to be considered when interpreting the results. First, this study is conducted with a convenience sample and relatively small sample size despite our efforts, which may limit the statistic power of this research. Second, the measures are all based on the vendor’s perspective, without the measurements of relational service quality and trust based on the client’s perception. Moreover, part of the samples is related to Japan–China offshore IS outsourcing with potential unique cultural influences, which poses a threat to the generalizability of the findings.

These limitations need future in-depth investigation. Other promising research directions include how to retain relational performance, how to divide it between partners, and if there are differences between the two typical contexts of offshore IS outsourcing business, i.e., U.S.–India and Japan–China offshoring.

Acknowledgements

This work was supported by research grants from the Natural Science Foundation of China (Project No. 71002100) to the first author, (Project No. 70888001) to the second author, and (Project No. 71172183) to the third author.
Appendix A. Operational definitions and questionnaire items

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<th>Constructs</th>
<th>Origin</th>
<th>Operational definitions</th>
<th>Questionnaire items</th>
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<tr>
<td>Relational service quality (RSEQUAL)</td>
<td>Mesquita et al. (2008) and Parasuraman et al. (1988)</td>
<td>The difference between a vendor’s performance with a particular client and that with its average client base</td>
<td>1. If we commit to resolving the problem raised by the client in a certain time period, we can always accomplish it. (RSEQUAL1) 2. No matter how busy we are, we can guarantee a timely response to the client’s requirements. (RSEQUAL2) 3. The quality of our deliveries is reliable. (RSEQUAL3)</td>
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<td>Client-specific capabilities (CSCAPA)</td>
<td>Ethiraj et al. (2005), Levina and Ross (2003) and Zollo and Winter (2002)</td>
<td>A stable pattern of collective activities and routines in dealing with or serving a specific client that generated through repeated interaction with this client</td>
<td>Through collaboration with the client, our team: 1. has developed many idiosyncratic effective collaborative routines with them (such as requirements understanding). (CSCAPA1) 2. has a common understanding with them concerning what is effective communication and collaborative routines. (CSCAPA2) 3. is proficient in dealing with them thanks to acquisition of much know-how about how to collaborate with them. (CSCAPA3) 4. can thoroughly understand the true meaning behind the client’s idiosyncratic words when communicate with them. (CSCAPA4)</td>
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<td>Project management capabilities (PMCAPA)</td>
<td>Ethiraj et al. (2005) and Levina and Ross (2003)</td>
<td>The skills in software development, effective project planning and controlling according to established processes and methodologies</td>
<td>1. Our team can accurately estimate the labor-input and schedule when doing project plan. (PMCAPA1) 2. Our team can effectively control the bug rate per thousand lines of code. (PMCAPA2) 3. Our team can effectively control project cost. (PMCAPA3) 4. Our team has a high level of software development productivity. (PMCAPA4)</td>
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<tr>
<td>Learning about client (LEARNABC)</td>
<td>Doz and Hamel (1998), Inkpen and Currall (2004) and Tsang (1999)</td>
<td>Acquiring the knowledge about a specific client necessary for better cooperation through understanding and learning about the particular partner</td>
<td>Through interaction with the client, our team has learned about the client’s: 1. organizational culture. (LEARNABC1) 2. business domain knowledge. (LEARNABC2) 3. work processes. (LEARNABC3) 4. development environment (such as the technology platform and business environment). (LEARNABC4)</td>
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<tr>
<td>Trust (TRUST)</td>
<td>McAllister (1995)</td>
<td>The positive judgment of the level of credibility of the client.</td>
<td>1. Both the client and we devote a certain level of affection in the work relationship. (TRUST1) 2. If we cannot work together anymore, our client and we will both feel it would be a kind of loss. (TRUST2) 3. Those teams that have dealt with this client all trust them and are willing to collaborate with them. (TRUST3) 4. We appreciate the work style of this client. (TRUST4)</td>
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References


