2007

An Empirical Study on the Importance of Psychological Contract Commitment in Information Systems Outsourcing

Hyung Jin Kim
Yonsei University, wmistop@yonsei.ac.kr

Sang Hoon Lee
Yonsei University, ymis@yosei.ac.kr

Ho Geun Lee
Yonsei University, h.lee@yonsei.ac.kr

Follow this and additional works at: http://aisel.aisnet.org/pacis2007

Recommended Citation
http://aisel.aisnet.org/pacis2007/119

This material is brought to you by the Pacific Asia Conference on Information Systems (PACIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in PACIS 2007 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.
111. An Empirical Study on the Importance of Psychological Contract Commitment in Information Systems Outsourcing

Hyung Jin Kim  
School of Business  
Yonsei University  
wmistop@yonsei.ac.kr

Sang Hoon Lee  
School of Business  
Yonsei University  
ymis@yosei.ac.kr

Ho Geun Lee  
School of Business  
Yonsei University  
h.lee@yonsei.ac.kr

Abstract
In IS outsourcing relationship literature, research has focused on detailed legal contracts and partnerships. We investigate the role of psychological contracts between client and vendor in the IS outsourcing context. The aim of this paper is to put the concept of “psychological contract commitment” (PCC) under the spotlight, finding out its mediating effects between legal contracts/partnerships and IS outsourcing success. By analyzing 50 matched survey responses gathered from project managers, vendor firms, and end-users, we found that psychological contract commitment has both direct and mediating effects on outsourcing success. Along the same lines, the key findings suggest that psychological contract commitment explains why legal contracts and partnerships are still crucial to IS outsourcing success.

Keywords: information systems outsourcing relationship, detailed legal contract, partnership, psychological contract commitment, outsourcing success

Introduction
In IS (Information Systems) outsourcing, vendors provide clients with services such as data center operations, system development and maintenance, equipment and network management, and general management of IS functions (Lacity and Hirschheim 1993). Clients can take advantage of IS outsourcing with low-cost specialized services and opportunities to focus on focal tasks and resources.

Focusing on relationship management, legal contracts and partnerships are regarded as representative factors for IS outsourcing success. Although IS outsourcing proponents have emphasized the importance of managing outsourcing relationships (Kern and Willcocks 2001), few researchers have provided insights into the IS outsourcing relationship between clients and vendors (Goles and Chin 2002). Furthermore, some studies dealing with this issue have produced inconclusive results (Kern and Willcocks 2002). Although prior research has identified legal contracts and partnerships as key success factors for IS outsourcing, there has been no single practical model that fully explains the dynamics of the IS outsourcing relationship (Alborz et al. 2003).

Although the focus of much research attention has been more towards detailed legal contracts and partnerships, recently a new concept, the psychological contract between client and vendor, has been introduced. Apart from their widely examined economic and legal aspects, contracts also have a psychological component (Macneil 1980), which is inherently
perceptual and deals with implicit details and perceived obligations beyond those that can be explicitly described in formal legal terms (Pavlou and Gefen 2004).

Through the new theoretical lens of the psychological contract, Koh et al. (2004) extended our understanding of possible factors affecting IS outsourcing success. They applied the concept of the psychological contract to perceived mutual obligations, and to how fulfillment of such obligations can predict success. They confirmed the fact that IS outsourcing success requires careful management of customer-supplier relationships. However, this area of research is still largely unexplored in the IS outsourcing context.

Our study explains why detailed legal contracts and partnerships are still crucial by investigating the role of commitment to psychological contracts. Findings from analyzing 50 matched samples of clients and vendors show that PCC (Psychological Contract Commitment) has a direct impact on IS outsourcing success; in addition, it plays mediating roles between legal contracts/partnerships and success. Based on the results, we explained the importance of legal contract and partnership in IS outsourcing from a new perspective. We examine the role of implicit factors such as PCC in behavior motivation.

**Literature Review**

**Legal contracts, partnerships, and success**

Contractual arrangements with vendors are important to the success of an outsourcing arrangement (Rohde 2004). As in any principal-agent setting, problems arise when the goals of clients and vendors diverge (Loh and Venkatraman 1995). Without a legal contract, there is no guarantee that a supplier would not indulge in self-serving behavior. However, legal contracts are often ineffective as an enforcement mechanism because of the complexity and ambiguity of the working relationship, which could not be defined explicitly (Henderson 1990). The risk of opportunism is especially pertinent given the extensive and complex range of details and contingencies for IS outsourcing (Brandon and Halvey 1990).

In addition to legal contracts, partnerships have been proposed as an important factor for IS outsourcing success. Partnerships can supplement legal contracts in managing the relationship between client and vendor. As the nature of the outsourcing relationship shifts from relatively independent to tightly coupled, organizations consider the outsourcing partnership as a strategic alternative (Lee 2001). The social exchange theory explains why organizations enter into a closer relationship. The theory assumes that processes evolve over time as the actors mutually and sequentially demonstrate their trustworthiness (Klepper 1995). DiRomualdo and Gurbaxani (1998) suggest that, when uncertainty is high and a high level of flexibility is required, the partnership approach is desirable. In a good partnership, client and vendor share the responsibilities and risk involved with the IS projects, which leads to success (Grover et al. 1996; Lacity and Hirschheim 1993).

**Psychological contract theory**

A psychological contract refers to an individual's mental beliefs about his or her mutual obligations in a contractual relationship (Rousseau 1995). An employment psychological contract, which is a widespread concept in psychology, refers to employer and employee expectations of the employment relationship, i.e. mutual obligations, values, expectations and aspirations that operate over and above the formal contract of employment (Smithson and Lewis 2003). A psychological contract emerges when one party believes that a promise of future returns has been made, a contribution has been given, and thus, an obligation has been created to provide future benefits (Rousseau 1989). Similar to the psychological contract
between an employer and employee, IS outsourcing involves a contract and a set of mutual obligations between client and vendor (Ho et al. 2003).

Psychological contract theory offers a highly relevant and sound theoretical lens for studying IS outsourcing management because of its six distinctive principles: (1) it focuses on mutual (rather than one-sided) obligations between contractual parties, (2) it’s more comprehensive than the concept of legal contract, (3) it’s an individual-level construct, (4) it changes over time, (5) it affects organizational behaviors, and (6) it’s susceptible to organizational factors (Koh et al. 2004; Rousseau 1996; Coyle-Shapiro 2000).

**Mutuality**
Psychological contracts deal with mutual obligations. Mutual obligations entail a belief in what one is obliged to provide based on perceived promises of a reciprocal exchange (Koh et al. 2004). In the IS outsourcing context, the supplier agrees to make specific contributions to the customer in return for certain benefits from the customer. Therefore, mutual obligations are the essence of an IS outsourcing contract. The concept of mutuality highlights the importance of looking at perceived obligations from the perspectives of both parties involved, rather than from only one perspective (Koh et al. 2004).

**Comprehensiveness: beyond the legal contract**
The psychological contract encompasses both parties’ perceptions and beliefs in explicit written terms, found in the legal contract, and implicit unwritten terms (Rousseau 1995). The idea of the psychological contract is really a broader concept (Koh et al. 2004). At least a part of any psychological contract will be interpretation of the legal contract. Expectations in legal contracts are specified, explicit and defined, while expectations associated with the psychological contract are unspoken, implicit and imprecise (Levinson 1966). Even when a legal contract exists, written obligations can never be complete and must be supplemented by unwritten promises (Macneil 1980). Many times, important terms and conditions are not explicitly incorporated in the legal contract; contractual parties rely, instead, on the spirit of the contract as embodied in a handshake (Koh et al. 2004).

**Individual-level construct**
The psychological contract is an individual-level construct (Koh et al. 2004). Prior research (i.e. Koh et al. 2004) that applied the concept in the IS outsourcing context provided a unique and hitherto understudied perspective on outsourcing relationships by focusing on the individual level of analysis. To avoid individual bias, they elicited information about psychological obligations through in-depth interviews with project managers. Though represented at the inter-organizational level, those obligations were actually perceived at the individual level.

**Changeability over time**
A number of researchers have noted that the psychological contract is dynamic and that it naturally changes over time as a result of changing needs and relationships (Smithson and Lewis, 2003). It can be continually re-negotiated, changing with individual and organizational expectations. Similarly, in an outsourcing relationship, the psychological contract between client and vendor is unstable as their expectations change during the project.
Impact on organizational behavior
A great deal of attention has been given to the aversive consequences of psychological contract violations on organizational behavior in employment research (Turnley and Feldman 1999). Robinson (1996) reserves the term “psychological contract violation” to refer to the emotional and affective state, characterized by disappointment and anger, that sometimes results from the belief that the organization has failed to adequately maintain the psychological contract and live up to the commitments it made to employees. Psychological contract violations result in reduced performance on both in-role and extra-role behaviors (Turnley and Feldman 1999).

Susceptible to organizational factors
Psychological contracts are influenced by factors that define the roles and obligations of each party. Organizational factors influencing the development of the psychological contract include organizational policies and practices, which may aid in forming an individual’s belief in different obligations according to different positions (Guest and Conway 1998). Observing these policies and practices during the socialization process, s/he perceives the obligations implied by various positions.

Research Model and Hypotheses
Our interest is in the variable psychological contract commitment (PCC) or commitment to psychological contracts, which is the extent to which a partner consistently and deeply concerns with what the counter-party believes as obligations during the duration of the IS project. The basic premise for the hypothesized relationship between PCC and success is that for outsourcing success, client and vendor should continually commit to mutual obligations in which both parties believe, rather than to only superficial explicit obligations (see Figure 1). PCC is an important variable in IS outsourcing relationships like the one described below.

![Figure 1 Conceptual Model](image)

Commitment to psychological contracts can elicit positive evaluation from a counter-party. Psychological contracts play a pivotal role in evaluating a counter-party because they reflect what one party really expects from the other. If one party consistently showed high commitment to psychological contracts, the other party would evaluate it positively. In turn, positive reciprocation efforts would be increased, which is strongly influential to outsourcing outcomes (McNeeley and Meglino, 1994). In addition, based on prior research (i.e., Kern and Willcocks 2002), commitment to the source of benefits leads to active and cooperative behaviors on the part of outsourcing partners, which go beyond what are defined in legal contracts.
The concept of social exchange has been put forward as an explanatory mechanism whereby one party seeks to reduce indebtedness through reciprocation efforts directed to the source of the benefits (McNeeley and Meglino, 1994). One act of reciprocation takes the form of enhanced commitment to the source of the benefit (Coyle-Shapiro 2000). Thus, if the extent of both parties’ PCC were high, the quality of the relationship could also be good, which would lead to success in the end. This is because, according to equity theory, each party continually seeks an equitable balance in the extent of reciprocation (Kickul 2001). Thus, we expect that

**Psychological contract commitment will be positively related to IS outsourcing success.**

As implied in the principles of psychological contracts, the content of the legal contract provides the basis of the psychological contract because each party basically understands the terms in the legal contract. The psychological contract encompasses the parties’ perceptions and beliefs in both the explicit written terms found in the legal contract, and unwritten, implicit terms (Rousseau 1995). If legal contracts specify obligations well, each party better understands the psychological obligations in which s/he believes.

Contracting is a big negotiation process that requires much effort and cost. Well-defined legal contracts give a hint of the effective negotiation process that both companies made in order to diminish the gap between expected obligations. In doing so, both parties better understand the psychological contract and, taking the next step forward, they recognize their additional obligations which the other party implicitly expects. This process can naturally lead both parties to commit to psychological obligations. According to the theory of planned behavior (TPB), there are three factors influencing a person’s behavior intentions. Of the factors, *subject norm*, reflecting the extent to which a person thinks that others want him or her to perform a behavior (Taylor and Todd 1995), can take place during the in-depth contracting process in IS outsourcing. Given this, we expect that

**Detailed legal contracts will be positively related to psychological contract commitment.**

As expressed in the principles of psychological contracts, psychological contracts are susceptible to organizational factors that form an individual’s belief in mutual obligations and roles (Turnley and Feldman 1999). In the IS outsourcing literature, the partnership is regarded as a typical inter-organizational factor for shared goals and benefits between client and vendor. In addition, similar to partnership, the quality of the working relationship has an effect on attitudes toward psychological contracts, such as the response to psychological contract violation and psychological contract commitment (Turnley and Feldman 1999).

When a company enters into a partner-like relationship with others, social information processing occurs, and norms form concerning appropriate behaviors that conform to the trust-based relationship (Guest 1998). A good partnership can lead both companies to behave in the right way, seeking mutual benefits. Along the same lines, a company may show more interest in what its partner really expects than in a transaction-based relationship. Therefore, in a good partnership, partners commit more readily to explicit and implicit obligations because the companies in the partnership behave for their mutual benefits in recompense for the trust-based behaviors of their partners (Klepper 1995). Given this, we hypothesize that

**Partnerships will be positively related to psychological contract commitment.**

Any business relationship needs oversight and periodic review (Elliott and Torkko 1996), particularly of service to client; if this is lacking, it can be destructive to an outsourcing relationship (Alborz et al. 2003). The response of many organizations to problems with
vendors is to try to define and specify the contract more rigorously. For many, this has now become the established principle in outsourcing business as a way of overcoming problems and has led to an increased focus on contracts and involvement of both internal and external legal expertise in contract negotiation (Fitzgerald and Willcocks 1994).

A complete contract reduces the uncertainty faced by organizational decision-makers and the risks stemming from opportunism on the part of one or more contracting parties. It provides a safeguard against ex post performance problems by restraining each party’s ability to pursue private goals at the expense of common benefits (Gottschalk and Solli-Sæther 2005). An incomplete contract may bring about ambiguity, which creates a breeding ground for shirking responsibility and shifting blame, raises the likelihood of conflict, and hinders the ability to coordinate activities, utilize resources, and implement strategies (Luo 2002). Given the importance of a detailed legal contract, we propose that

**Detailed legal contracts will be positively related to IS outsourcing success.**

The partnership concept rests on the notion that performance can be significantly improved through joint, mutually dependent actions (Henderson 1990). Lasher et al. (1991) define the partnership as "a cooperative relationship in which partners are equally responsible for the business success or failure of the project or product." Partnership allows two organizations to achieve key organizational objectives and build competitive advantage in their respective industries (Grover et al. 1996). Thus, a good partnership with the outsourcing firm is proposed as the key to success in outsourcing strategy (Livingston 1992). Grover et al. (1996) showed that the correlation between partnership and outsourcing success is very high. A strong relationship between partnership and outsourcing success indicates that fostering a long-term interactive relationship based on trust, communication, satisfaction, and cooperation is critical to achieving the greatest benefits from outsourcing (Grover et al. 1996). Given this, we anticipate that

**A good partnership will be positively related to IS outsourcing success.**

**Research Method**

To assess the above hypotheses within the IS outsourcing context, we conducted a survey. Preliminary field interviews were conducted with two IT consultants in order to investigate how they view detailed legal contracts, partnerships, and psychological contracts. The unit of analysis for this study is the IS outsourcing project, where project teams consist of IS staff and vendor firm employees.

**Measures**

We used validated measures to assess the constructs of detailed legal contracts and partnerships, and measured IS outsourcing success in terms of project and system performance (see Table 1). Our measures for PCC are based on measures for psychological contracts of Koh et al. (2004) that first measured the concept in IS outsourcing context, and modified to add the concept of commitment. Waytes and Geyskens (2005) introduced the detailed contract drafting construct which describes the level of detail with which the contract prescribes roles, responsibilities, expected performance, and how to handle unexpected events and conflicts. We used the items to measure the concreteness of legal contracts. Similar to Lee (2001), we define partnership as an interorganizational relationship to achieve shared goals of client and vendor. The variable partnership has been assessed in terms of several sub-con structs such as communication, trust, cooperation, satisfaction, business
understanding, benefit/risk sharing and so on. Based on the definition of partnership, we adopt four measures, which are repeatedly used and validated in prior research.

Project performance (Karlsen and Gottschalk 2003) refers to criteria for project success in terms of cost, time, and quality. A successful project should obviously be completed within the scheduled time and according to the budget. In addition, technical requirements should be fulfilled. On the other hand, system performance is concerned with the successful introduction, installation, training, usage, and modification of the new information systems in a user’s eyes after the outsourced project is complete.

Table 1 Measures and Operationalization of Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definitions</th>
<th>Measures</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trust</strong></td>
<td>Degree of confidence and willingness between Partners</td>
<td>Be open in dealing with partners Do not make a false claims Competent in their field Promises are reliable Be ready and willing to assist and support partners</td>
<td>Gefen, 2004; Lee and Kim, 1999</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communications are timely Communications are accurate Communications are complete Communications are credible</td>
<td>Klepper, 1995; Thomas et al., 1999; Lee and Kim, 1999</td>
</tr>
<tr>
<td><strong>Communications</strong></td>
<td>Degree of timeliness, adequacy, and credibility of communication between partners</td>
<td>Understand business objectives clearly Understand business processes clearly Understand objectives of the information systems Understand roles clearly regarding business objectives</td>
<td>Lee and Kim, 1999</td>
</tr>
<tr>
<td><strong>Business</strong></td>
<td>Degree of understanding of behavior, goals, and processes between Partners</td>
<td>Understand business objectives clearly Understand business processes clearly Understand objectives of the information systems Understand roles clearly regarding business objectives</td>
<td>Lee and Kim, 1999</td>
</tr>
<tr>
<td><strong>Benefit/ risk sharing</strong></td>
<td>Degree of articulation and agreement on benefit and risk between partners</td>
<td>Actively concern risk and problem occurred during the period Share benefits of the project Have collective responsibilities of the project Continuously pursue shared goals of the project</td>
<td>Lee and Kim, 1999</td>
</tr>
<tr>
<td><strong>Detailed legal contract</strong></td>
<td>Degree of legal contracts describe mutual obligations in detail</td>
<td>Describes roles of both parties clearly Describes responsibilities of both parties clearly Describes obligations of both parties clearly Describes what would happen clearly</td>
<td>Fitzgerald and Wilcocks, 1994; Wuyts and Geyssens, 2005</td>
</tr>
<tr>
<td><strong>Commitment to psychological contracts (PCC) of client</strong></td>
<td>The extent to which client consistently and deeply concern with obligations vendor believes psychologically during the project duration</td>
<td>Care about the obligation of articulating requirements for the system explicitly Care about the obligation of paying on time Care about the obligation of overseeing the project progress regularly Care about the obligation of minimizing staff turnover during the project Care about the obligation of educating the vendor with industry and firm-specific knowledge necessary for the project Care about the obligation of continuously strong leadership during the project</td>
<td>Koh et al., 2004</td>
</tr>
<tr>
<td><strong>Commitment to psychological contracts (PCC) of vendor</strong></td>
<td>The extent to which vendor consistently and deeply concern with obligations client believes psychologically during the project duration</td>
<td>Care about the obligation of defining precisely the nature and range of outsourcing services Care about the obligation of delineating mutual roles and responsibilities Care about the obligation of solving problems independently Care about the obligation of minimizing staff turnover during the project Care about the obligation of educating the client with necessary skills, knowledge, and expertise about IS Care about the obligation of building effective inter-organizational teams with the client</td>
<td>Koh et al., 2004</td>
</tr>
<tr>
<td><strong>Project performance</strong></td>
<td>Project success in terms of cost, time, and quality</td>
<td>Be completed within the period Costs are not over the budget Requirements defined earlier are reflected enough in the outcome Functions defined earlier are reflected in the outcome</td>
<td>Karlsen and Gottschalk, 2003; Dvir et al., 2003</td>
</tr>
<tr>
<td><strong>System performance</strong></td>
<td>Degree of user’s evaluation in terms of introduction, installation, training, use, and modification of IS</td>
<td>IS is used throughout the enterprise IS meets users’ needs Minimal start-up problems exist Extensively use the system</td>
<td>Karlsen and Gottschalk, 2003</td>
</tr>
</tbody>
</table>
**Samples**

Data was collected using questionnaires. Organizations which outsourced information systems in 2004 provided the sampling frame of this study. The list was available in the periodical *White Papers of the IS Market in 2005*, published by the Knowledge Research Group. With 25 clients and 14 vendors, we searched for email addresses of those who were in charge of outsourcing projects through web pages and the KIS-LINE database. Email messages and reminder letters containing information about our research project were sent out several times.

One matched sample consisted of three respondents: a project manager, a project member from a vendor company with who a project manager cooperated, and an end-user who actually were using information systems. First, we sent a project manager three types of questionnaires. Specifically, we asked him/her to answer a type of questionnaires for his/her own answer. A project manager was also asked to leave the other types of questionnaires untouched and to deliver them to the other respondents. The other respondents were asked to answer a certain type of questionnaires respectively and to send responses to the researcher directly. It was conceived to avoid the evaluation apprehensions. When respondents send to or receive any questionnaires from each other, they were asked to make an entry of email address in order to inform the sender or the recipient. By matching the email addresses and other information included in all types of questionnaires (i.e., project type, project duration, the time of the project ended) we finally used 50 of 67 matched samples received because 17 sets were not complete.

A project manager answered questions about the DLC (Detailed Legal Contract), partnership, PCC of vendor, and project performance. A project manager is typically viewed as an individual representing their organizations and plays a critical role in the assessment of the outsourcing relationship (Koh et al. 2004). A project member from vendor answered questions about the PCC of clients. An end-user answered questions about system performance. As noted above, we asked about the PCC of each party’s counter-party to avoid response bias.

**Results**

The objective of the data analysis was to understand the importance of PCC for outsourcing success in the client-vendor relationship. Based on equity theory, we assume that both parties’ commitment to the psychological contract is equally important. Therefore, PCC was calculated by multiplying the PCC values for both client and vendor. The interaction of variables measured by an actor and a partner can be used to model synergy or reciprocity (Cook and Kenny, 2005). It highlights the effect of goodness of fit between two variables instead of each one.

To analyze the data, we utilized the partial least squares (PLS) technique. PLS is considered especially useful in the early stages of theory testing (Fornell and Bookstein 1982). Given that (1) our study represents an initial attempt to explore the linkage between DLC / partnership and PCC, (2) the sample size was small, and (3) our primary emphasis was on model prediction rather than model fit, the use of PLS was deemed appropriate.

**Measurement model analysis**

To assess the quality of the measurement model, we conducted several tests of convergent and discriminant validity, as prescribed by Chin (1998). To assess convergent validity, we assessed (1) individual item reliability and (2) construct reliability. With respect to item
reliability, we examined the item-to-construct loadings for all multi-item variables. Although standardized loadings of 0.7 or greater are needed for the shared variance between each item and its construct to exceed the error variance, loadings of 0.6 to 0.7 are considered acceptable, especially if the loadings of other items within the same construct are high (Chin 1998). Most of the items in our study exhibited loadings over 0.7, except TR4, TR5, CO4, V_PCC3, and SP3 (see Table 2). Given that SP3 had loadings over 0.6 and the remaining items for the construct had strong loadings (over 0.7), this did not raise too much of a concern.

Table 1 Factor Loadings and Cross Loadings

|       | TR1 | TR2 | TR3 | TR4 | TR5 | CO1 | CO2 | CO3 | BU1 | BU2 | BU3 | BU4 | BU5 | CO4 | CO5 | CO6 | SH1 | SH2 | SH3 | SH4 | LC1 | LC2 | LC3 | LC4 | LC5 | LC6 | LC7 | C_PCC1 | C_PCC2 | C_PCC3 | C_PCC4 | C_PCC5 | C_PCC6 | V_PCC1 | V_PCC2 | V_PCC3 | V_PCC4 | V_PCC5 | V_PCC6 | V_PCC7 | V_PCC8 | PP1 | PP2 | PP3 | PP4 | SP1 | SP2 | SP3 | SP4 | SP5 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| TR    | 0.88| 0.89| 0.88| 0.70| 0.59| 0.70| 0.57| 0.57| 0.59| 0.54| 0.57| 0.59| 0.56| 0.65| 0.68| 0.68| 0.62| 0.59| 0.62| 0.56| 0.56| 0.59| 0.57| 0.62| 0.65| 0.70| 0.58| 0.61| 0.68| 0.69| 0.70| 0.69| 0.70| 0.68| 0.59| 0.43| 0.52| 0.38| 0.57| 0.58| 0.60| 0.62| 0.61| 0.68| 0.62| 0.57|
| CO    | 0.52| 0.59| 0.71| 0.91| 0.88| 0.52| 0.71| 0.35| 0.46| 0.25| 0.49| 0.32| 0.49| 0.35| 0.37| 0.35| 0.38| 0.41| 0.41| 0.46| 0.49| 0.43| 0.46| 0.44| 0.47| 0.48| 0.47| 0.46| 0.46| 0.45| 0.45| 0.45| 0.45| 0.45| 0.46| 0.46| 0.46| 0.46| 0.46| 0.46| 0.46| 0.46| 0.46| 0.46| 0.46| 0.46|
| BU    | 0.59| 0.59| 0.60| 0.64| 0.67| 0.46| 0.67| 0.64| 0.61| 0.61| 0.66| 0.66| 0.63| 0.64| 0.64| 0.63| 0.61| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66| 0.66|
| SH    | 0.58| 0.60| 0.70| 0.56| 0.61| 0.63| 0.62| 0.62| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60| 0.60|
| LC    | 0.55| 0.54| 0.55| 0.61| 0.55| 0.49| 0.61| 0.43| 0.45| 0.39| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43| 0.43|
| C_PCC | 0.52| 0.47| 0.47| 0.32| 0.61| 0.53| 0.52| 0.45| 0.34| 0.33| 0.35| 0.34| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35| 0.35|
| V_PCC | 0.61| 0.67| 0.62| 0.75| 0.84| 0.68| 0.85| 0.75| 0.66| 0.55| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47| 0.47|

Table 2 Reliability and Discriminant Validity

<table>
<thead>
<tr>
<th></th>
<th>partnership</th>
<th>PCC</th>
<th>DLC</th>
<th>PP</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td># of items</td>
<td>reliability</td>
<td>partnership</td>
<td>PCC</td>
<td>DLC</td>
<td>PP</td>
</tr>
<tr>
<td>partnership</td>
<td>4</td>
<td>0.912</td>
<td>0.889</td>
<td>0.568</td>
<td>0.829</td>
</tr>
<tr>
<td>PCC</td>
<td>5</td>
<td>0</td>
<td>0.916</td>
<td>0.485</td>
<td>0.829</td>
</tr>
<tr>
<td>DLC</td>
<td>7</td>
<td>0.984</td>
<td>0.744</td>
<td>0.700</td>
<td>0.841</td>
</tr>
<tr>
<td>PP</td>
<td>4</td>
<td>0.921</td>
<td>0.744</td>
<td>0.723</td>
<td>0.579</td>
</tr>
<tr>
<td>SP</td>
<td>5</td>
<td>0.880</td>
<td>0.641</td>
<td>0.673</td>
<td>0.598</td>
</tr>
</tbody>
</table>

Structural model analysis

The next step was to assess whether the second-order construct, *partnership*, was measured reliably by the related first-order constructs. Partnership was conceptualized as a second-order construct measured by fifteen constituent elements of trust, communication, business understanding, and benefit/risk sharing. The weights of all 15 elements were statistically significant (see Figure 2).

![Figure 2 Second-order Factor Analysis](image)

The next step in testing the hypothesized model was to assess the relationships among various latent constructs in the PLS structural model. Figure 3 shows the effects for each hypothesized path, as well as the amount of variance explained (\(R^2\)) for all endogenous factors. In terms of explanatory power, our model indicates that 55.5 percent of the variance of PCC was explained by the variables DLC and partnership, 64.3 percent of the variance of PP was explained by partnership, and PCC. 51.6 percent of SP was explained by only PCC.

The path coefficients are shown Table 4. All of paths except three were significant at the 0.001, 0.01, or 0.05 level. Findings support all hypotheses of the model except H4a, H4b, and H5b (Figure 3). In sum, the results suggest that PCC of both parties has a significant association with PP and SP, providing strong support for hypotheses H1a and H1b (\(\beta=0.445, \ p<0.01\); \(\beta=0.404, \ p<0.05\), respectively). The direct impact of DLC on the two success measures was not significant. In addition, partnership has a direct impact on only PP (\(\beta=0.533, \ p<0.001\), suggesting that the cooperative relationship between client and vendor has limited ability to reflect end-user’s needs for measurement of outsource information systems.

Next, following Baron and Kenny (1986), we investigated the mediating effect of PCC. Table 5 shows that when the dependent variable is PP, there are significant and positive paths from DLC to PCC (\(\beta=0.417, \ p<0.001\)) and from PCC to PP (\(\beta=0.445, \ p<0.01\)) indicating a significant mediating effect. However, the path directly linking DLC to PP turns out to be insignificant, indicating an insignificant direct effect. Moreover, when the dependent variable is SP, the mediating effect is significant (\(\beta=0.417, \ p<0.001\); \(\beta=0.404, \ p<0.05\), respectively); in addition, the direct path from DLC to SP is not significant.

To investigate the mediating effect of PCC between partnership and outsourcing success, we did the same comparison. Table 6 illustrates that when dependent variable is PP, there are
significant and positive paths from partnership to PCC ($\beta=0.360$, $p<0.001$) and from PCC to PP ($\beta=0.445$, $p<0.01$). However, the path directly linking partnership to PP is also significant ($\beta=0.553$, $p<0.001$); thus, PCC has a partial mediating effect. On the other hand, when the dependent variable is SP, the mediating effect is ($\beta=0.360$, $p<0.001$; $\beta=0.404$, $p<0.05$, respectively); in addition, the direct path from partnership to SP is not significant.

![Figure 3 Structural Model Analysis]

Table 3 Hypothesis Testing

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Beta</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2 DLC</td>
<td>PCC</td>
<td>0.417</td>
<td>3.6119***</td>
</tr>
<tr>
<td>H3 Partnership</td>
<td>PCC</td>
<td>0.360</td>
<td>3.3456***</td>
</tr>
<tr>
<td></td>
<td>$R^2=0.555$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1a PCC</td>
<td>PP</td>
<td>0.445</td>
<td>2.6527**</td>
</tr>
<tr>
<td>H1b DLC</td>
<td>PP</td>
<td>-0.129</td>
<td>0.7925</td>
</tr>
<tr>
<td>H1c Partnership</td>
<td>PP</td>
<td>0.533</td>
<td>3.3006***</td>
</tr>
<tr>
<td></td>
<td>$R^2=0.643$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2b PCC</td>
<td>SP</td>
<td>0.404</td>
<td>2.5570*</td>
</tr>
<tr>
<td>H2c DLC</td>
<td>SP</td>
<td>0.103</td>
<td>0.5690</td>
</tr>
<tr>
<td>H2d Partnership</td>
<td>SP</td>
<td>0.285</td>
<td>1.6288</td>
</tr>
<tr>
<td></td>
<td>$R^2=0.516$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 Mediating Effect of PCC (between DLC and success)

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Beta</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct DLC</td>
<td>PP</td>
<td>-0.129</td>
<td>0.7925</td>
</tr>
<tr>
<td>Indirect DLC</td>
<td>PCC</td>
<td>0.417</td>
<td>3.6119***</td>
</tr>
<tr>
<td></td>
<td>PCC</td>
<td>0.445</td>
<td>2.6527**</td>
</tr>
<tr>
<td>Direct DLC</td>
<td>SP</td>
<td>0.103</td>
<td>0.5690</td>
</tr>
<tr>
<td>Indirect DLC</td>
<td>PCC</td>
<td>0.417</td>
<td>3.6119***</td>
</tr>
<tr>
<td></td>
<td>PCC</td>
<td>0.404</td>
<td>2.5570*</td>
</tr>
</tbody>
</table>
Table 5 Mediating Effect of PCC (between partnership and success)

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Beta</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>Partnership</td>
<td>PP</td>
<td>0.533</td>
</tr>
<tr>
<td></td>
<td>Partnership</td>
<td>PCC</td>
<td>0.360</td>
</tr>
<tr>
<td></td>
<td>PCC</td>
<td>PP</td>
<td>0.445</td>
</tr>
<tr>
<td>Indirect</td>
<td>Partnership</td>
<td>SP</td>
<td>0.285</td>
</tr>
<tr>
<td></td>
<td>Partnership</td>
<td>PCC</td>
<td>0.360</td>
</tr>
<tr>
<td></td>
<td>PCC</td>
<td>SP</td>
<td>0.404</td>
</tr>
</tbody>
</table>

* p<0.05, ** p<0.01, *** p<0.001

Conclusion

As the empirical results suggest, our hypotheses were largely supported, indicating the importance of commitment to psychological contracts (PCC) in the client-vendor relationship. Overall results indicate that PCC has direct and mediating effects on outsourcing success. The concept of PCC also allows us to form a new basis of understanding as to why DLC and partnership are still important variables in outsourcing success.

The importance of legal contract in IS outsourcing can be explained from a new perspective. Focusing on the risk of opportunistic behaviors, prior research emphasized the tight contract which described roles and obligations in detail. However, our research illustrates detailed legal contract has limited ability to affect outsourcing success as organizations enter into a close relationship. Instead, it provides concrete ground for each party to understand and commit to obligations in which the other party believes.

Based on the result of our study, partnership has both direct and indirect effects on outsourcing success. The noteworthy result is that partnership can affect system performance only through PCC. The extent to which information systems is actually used and/or assimilated by end-users is very important for the long run (Cronin and Taylor, 1992). In a good partnership, partners commit more readily to explicit and implicit obligations because the companies in the partnership behave for their mutual benefits. The potential of partnership can, therefore, be realized by commitment to psychological contracts of both parties in IS outsourcing.

Implications

Besides the new understanding of importance of legal contract and partnership, our study contributes to current and future research regarding implicit factors of relationship management in IS outsourcing. Research on psychological contracts in the IS outsourcing context has just begun. Theoretical and empirical topics in this research area should be continuously pursued. For instance, it will be important for future research to identify other psychological obligations in which both parties believe. It is also interesting to compare types of psychological obligations from client and vendor perspectives and to investigate whether or not the extent of fit between the obligations of the two sides affects outsourcing success. With future research on these topics, information about outsourcing relationship management will be more widely available.

For practitioners, the results have also implications. In reality, the process of contract negotiation is costly and requires expert legal advice (Rohde 2004). Without legal contracts, being close to partners is risky due to opportunism. In addition, management of partnerships is not easy work because of its invisibility. Instead, practitioners, through effective communication or consistent line of behaviors, must continuously commit to what partners
expect of them in order for both to benefit. Higher level of PCC leads to positive evaluations and reciprocation efforts from both parties due to the tendency of seeking fairness.

Limitations
Although our research findings have meaningful implications, this study has limitations. Our results could be influenced by individual differences because we asked only three respondents per sample, representing these three stakeholder groups: clients, vendors, and end-users. To reduce possible bias, we asked many questions of project managers, who we considered to be individuals representing an organization. In addition, our study relies heavily on cross-sectional data. Because of the changeability of the psychological contract, a longitudinal design for a psychological contract study could be effective in reducing common-method variance.

Acknowledgement
This research is supported by the ubiquitous Computing and Network (UCN) Project, the Ministry of Information and Communication (MIC) 21st Century Frontier R&D Program in Korea.

References
Coyle-Shapiro, J. "Psychological Contracts: What are the Measurement Trade-offs and are They Worth it?" Paper Presented at the Academy of Management Meeting, 2000, Toronto.


