IT Outsourcing Success: A Psychological Contract Perspective

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Information technology (IT) outsourcing success requires careful management of customer-supplier relationships. However, there are few published studies on the ongoing relationships, and most of these adopt a customer perspective, de-emphasizing suppliers. In this study, we look at both customer and supplier perspectives, by means of the psychological contract of customer and supplier project managers. We apply the concept of psychological contract to perceived mutual obligations, and to how such fulfillment of obligations can predict success. Our research questions are (1) What are the critical customer-supplier obligations in an IT outsourcing relationship? and (2) What is the impact of fulfilling these obligations on success?

We use a sequential, qualitative-quantitative approach to develop and test our model. In the qualitative study, we probe the nature of customer-supplier obligations using in-depth interviews. Content analysis of interview transcripts show that both customers and suppliers identify six obligations that are critical to success. Customers perceive supplier obligations to be accurate project scoping, clear authority structures, taking charge, effective human capital management, effective knowledge transfer, and effective interorganizational teams. Suppliers perceive customer obligations as clear specifications, prompt payment, close project monitoring, dedicated project staffing, knowledge sharing, and project ownership. In the second quantitative study, we assess the impact of fulfilling these obligations on success through a field study of 370 managers. Results show that fulfilled obligations predict success over and above the effects of contract type, duration, and size.

Key words: IT outsourcing success; postcontractual issues; contracts; psychological contracting theory; outsourcing relationship management; mixed methods approach; hierarchical regression
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1. Introduction

The management of IT outsourcing continues to challenge organizations today, despite its widespread diffusion over the years (Ang and Straub 1998, Levina and Ross 2003, Hu et al. 1997). The reported success rates of traditional outsourcing is only 56% (Lacity and Willcocks 1998). Even for newer forms of outsourcing such as Application Service Provision (ASP), satisfaction among users is low (Susaria et al. 2003). Why would this be the case? One reasonable interpretation is that research to date has not modelled all possible factors affecting IT outsourcing success. Our study extends understanding of these factors through the new theoretical lens of psychological contracting by looking at success through the eyes of both customers and suppliers. Given that this area of research is novel in both the general and IT sourcing literature, two research questions seem to be particularly pertinent. They are (1) What are the critical customer-supplier obligations in an IT outsourcing relationship? and (2) What is the impact of fulfilling these obligations on success?

Research on managing outsourcing relationships has focused either on the legal contract, with tight contractual mechanisms recommended to reduce opportunistic behaviors (e.g., Ang and Beath 1993, Lacity and Hirschheim 1993), or on advocating strategic partnerships for managing the relationship (e.g.,

Willcocks and Kern 1998). Recent research has acknowledged that contractual mechanisms and strategic partnerships complement each other, with the legal contract providing the context in which the relationship exists and defines the interactions between parties (Saunders et al. 1997). Although research in outsourcing management has increased our collective understanding of factors influencing success, the vast majority of prior studies adopt only the customer perspective. Those that have looked at suppliers employ a macro, industry-level perspective, studying supplier strategies and core capabilities (e.g., Currie and Seltsikas 2001, Levina and Ross 2003). Studies that incorporate customer and supplier perspectives remain comparatively rare (exceptions, inter alia, are Sabherwal 1999, Willcocks and Kern 1998), even though outsourcing involves actions from both sides of the relationship.

The purpose of the current study is to present a new perspective on managing outsourcing by focusing on both customers and suppliers through the unique lens of psychological contracting. A psychological contract refers to an individual's mental beliefs about his or her mutual obligations in a contractual relationship (Rousseau 1995). Psychological contract theory offers a highly relevant and sound theoretical lens for studying IT outsourcing management because of its three distinctive principles: (1) its focus on mutual (rather than one-sided) obligations between contractual parties, (2) its emphasis on psychological (as distinct from legal) obligations, and (3) its emphasis on an individual (rather than interorganizational) level of analysis.

The paper proceeds as follows. In the next section, we clarify the concept of a psychological contract and its relevance to IT outsourcing. Using a sequential, mixed-methods design (Creswell 1994), we develop and empirically validate our research models of customer and supplier obligations in IT outsourcing. In our first study, we conduct in-depth interviews with customer and supplier project managers to identify the nature of these obligations. In our second study, we assess the impact of fulfilling these obligations on outsourcing success through a field sample of 179 customer managers and 191 supplier managers. We conclude with the theoretical and practical importance of our findings.

2. Psychological Contract Perspective on IT Outsourcing

Psychological contracts have attracted much research interest since the 1990s; Rousseau's (1989) seminal research triggered much of the contemporary empirical work on the employment psychological contract. Thus, for our purposes, we adopt Rousseau's view of a psychological contract as the contractual parties' mental beliefs and expectations about their mutual obligations in a contractual relationship, based on perceived promises of a reciprocal exchange. In this section, we elaborate on three distinctive principles of psychological contract theory to explain how these help us better understand factors leading to outsourcing success.

2.1. Mutual (Rather Than One-Sided) Obligations

The first principle in psychological contracting is the recognition of mutuality of the parties involved in the contractual relationship. Mutuality is anchored in the reciprocal relationship between the two parties. Mutual obligations entail a belief in what one is obliged to provide based on perceived promises of a reciprocal exchange. The concept of mutuality, therefore, highlights the importance of looking at perceived obligations from the perspectives of both parties involved, rather than from only one perspective. A psychological contract exists only if both parties believe that an agreement exists, that promises have been made, and that considerations have been offered in exchange (Rousseau 1995). Mutuality essentially means "that the parties involved do in fact hold the same beliefs regarding their obligations to each other" (Rousseau 2001, p. 534).

Although prior research has studied the employment psychological contract, we believe that the concept can be applied to IT outsourcing. Similar to the contract between an employer and employee, IT outsourcing involves a contract and a set of mutual obligations between a customer and a supplier (Ho et al. 2003). We posit, therefore, that mutual obligations are the essence of an IT outsourcing contract—that is, the supplier agrees to make specific contributions to the customer in return for certain benefits from the customer. A psychological contract perspective offers a more inclusive view of the mutual obligations between both parties, compared with prior research

that has focused mostly on one side, namely, the customer side.

2.2. Psychological (as Distinct from Legal) Obligations

Early theories on contracts posit that interorganizational relationships (IORs) such as IT outsourcing are in reality governed by more than legal exchanges (Macaulay 1963, 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. Even when a legal contract exists, written obligations can never be complete and must be supplemented by unwritten promises (Macneil 1980). In reality, the everyday working of the contractual relationship is governed by the individual's subjective interpretation, because "all contracts, whether written or unwritten, are fundamentally psychological, existing in the eye of the beholder" (Rousseau and Parks 1993, p. 19). The psychological contract is, therefore, distinct from the legal contract, which represents an implied contract subject to third-party interpretations (such as the judicial system). This distinction is important because, regardless of whether a formalized contract exists, individuals develop psychological contracts. Ultimately, it is the individual's beliefs and perceptions of these obligations (i.e., the psychological contract), rather than the actual written contract, that drive her behavior. The psychological contract, therefore, encompasses the parties' perceptions and beliefs of both explicit written terms found in the legal contract and implicit unwritten terms (Rousseau 1995).

We want to emphasize, however, that we are not diminishing the value of a written formal contract in this elaboration. In fact, psychological contract researchers have often recommended making the contract as explicit as possible in that "the more explicit are the terms, well-specified orally or in writing, one might reasonably expect wider agreement among contract parties as to the meaning of the contract. Agreement reduces the likelihood of breach of contract due to misunderstanding regarding its meaning" (Rousseau and Tijoriwala 1998, p. 690). In sum, whereas a psychological contract (one that reflects a belief system of implicit expectations) can be made

distinct from the legal contract (one that reflects a statutory system of explicit expectations), the psychological contract is really a broader concept, encompassing beliefs about both unwritten, implicit terms and written, explicit terms incorporated into a legal contract.

Outsourcing research has similarly emphasized the legal contract, and the literature is replete with examples of contractual guidelines (e.g., Ang and Beath 1993, Lacity and Hirschheim 1993). Reliance on the legal contract alone is insufficient, however, given the complexities of real-life outsourcing arrangements and the rapid changes in technology and organizational environments. This has led some researchers to recommend managing the outsourcing venture as a strategic partnership, with emphasis on trust and flexibility (Willcocks and Kern 1998). This work suggests strongly that, despite the importance of the legal contract, trust must also be placed in unwritten promises and obligations between the parties. This is especially true in outsourcing involving multimillion dollar deals, where the legal contract is usually so long and complex that it is impractical to distribute the legal contract to all individuals involved. Often, individuals in the organizations only receive a summary of the legal contract, and must rely on their set of beliefs about the legal contract. The DuPont outsourcing is a case-in-point, where ". . . the contract is 30,000 lines long. Because it is impossible to execute the relationships from the contract, a two-inch summary document was distributed. However, DuPont found that even a summary document is open to interpretation" (Lacity and Willcocks 2001, p. 75).[1]

We posit, therefore, that successful IT outsourcing relies heavily on a psychological contract between the customer and the supplier. These psychological contract obligations may be written into the terms of a legal contract, or based simply on oral promises and other expressions of commitment made by the parties.

2.3. Individual (Instead of Interorganizational) Level of Analysis

The psychological contract is an individual-level construct, and one may argue whether it is even applicable to an organizational-level phenomenon such as

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[1] We thank an anonymous reviewer for the DuPont example.

IT outsourcing. As Rousseau fervently argues, "individuals have psychological contracts, organizations do not" (Rousseau 1989, p. 126). Nevertheless, we believe that the concept of a psychological contract is highly relevant to the context of IT outsourcing. In fact, we show that by focusing on the individual level of analysis the use of psychological contracts provides a unique and hitherto understudied perspective on the outsourcing relationships that develop between organizations.

IT outsourcing, similar to any other IOR, is inherently multilevel in nature. In an IOR, "individuals are nested within organizations, which are nested within networks of organizations, which are nested within industries and national economies and cultures" (Klein et al. 2000, p. 269). IORs can, therefore, be studied and explored at any and all levels of analysis. IOR research to date, however, has focused primarily on the customer-supplier relationship at the level of organizations, with very little attention focused on the level of individuals (Klein et al. 2000). The scarcity of micro-studies on IORs is unfortunate because, in reality, IORs emerge and evolve "as a consequence of individual activities" (Ring and Van de Ven 1994, p. 95). Similarly, in the context of IT outsourcing, there is an urgent need for research to complement our existing understanding of the relationship between customer and supplier organizations by studying the relationships among individuals in these organizations (Lacity and Willcocks 2000a). As explained by Lacity and Willcocks (2000a), "...in the context of IT outsourcing relationships, we found that the dyadic customer-supplier relationship perspective sheds only limited understanding. Instead, we found that a more microanalysis of multiple stakeholders within the trading partners is required for in-depth understanding" (p. 357).

Consistent with the principles in psychological contract theory and the stakeholder perspective of IT outsourcing, we chose customer and supplier project managers as our focal stakeholders. There are several reasons for our choice. First, studies of employment psychological contracts have often used managers as agents representing the employers' perspective. From an agency's perspective, managers are usually thought of as agents expressing the interests of the firm through the inducements they offer to workers

(see Coyle-Shapiro and Kessler 2000). Similarly, in the IT outsourcing relationship, project managers are typically viewed as representing their organizations, and, therefore, the other contractual party is likely to view his actions as being those of the organization. Second, customer and supplier project managers play a pivotal role in facilitating long-term relationships (Webber and Torti 2004) through their direct contact. Project managers are usually vested with the day-to-day responsibility of managing the relationship, and unlike IT staff and users, project managers usually do have decision-making authority. Third, project managers play a critical role in the assessment of the outsourcing relationship, which is important in determining whether the relationship is continued or terminated.

In studying such customer and supplier project managers' views of their psychological contracts, we do not make an explicit distinction between the individual's formal role relationships and their informal or interpersonal relationships. Hence, the psychological contract could be derived from both formal role relationships and interpersonal relationships between the two parties, because formal role relationships between customer and supplier project managers need not necessarily be identical to their interpersonal relationships (Ring and Van de Ven 1994, Zaheer et al. 1998). Most IORs start with formal roles, with organizational roles serving to guide and constrain actions of the individuals. Over time, even as interpersonal relationships emerge, formal role relationships of individuals remain, and continue to act as a boundary guiding individual actions (Ring and Van de Ven 1994). Therefore, formal role relationships and interpersonal relationships are closely intertwined and cannot be totally separated (Ashforth et al. 2000, Kern and Blois 2002). A psychological contract in IT outsourcing, therefore, incorporates both formal organizational roles and interpersonal relationships, as seen through the eyes of the role incumbent.

3. Study 1: Identifying Psychological Contract Obligations in IT Outsourcing

In Study 1, we started our investigation with a content-oriented assessment of the outsourcing psychological contract (Rousseau and Tijoriwala 1998).

In this, we elicited elemental beliefs about the mutual obligations in an IT outsourcing relationship. We employed in-depth interviews with content experts. In this way, we were able to draw supplier obligations from customer sources and customer obligations from supplier sources and to ensure that the essence of the construct components was based on the perceptions of those parties ultimately evaluating how well the obligations are met. Such an approach is consistent with Rousseau's original conceptualization (1989) of psychological contracts.

3.1. Study 1: Method

3.1.1. Participants and Data Collection Procedures. Data for both studies were collected in Singapore. Although some outsourcing research has been carried out in Asian countries such as Korea (e.g., Lee et al. 2004), little recent work has been reported from Singapore other than that of Ho et al. (2003). Given trends in globalization and the increasing prevalence of offshore outsourcing (Carmel and Agarwal 2002) and the relative dearth of outsourcing research outside the United States and selected parts of Europe (Barthelemy and Geyer 2001), we believe that this dataset is timely and useful in helping the information systems (IS) community to understand outsourcing practices in other countries such as Singapore.

The Singapore IT Dispute Resolution Advisory Committee (SITDRAC) commissioned the study to examine best IT outsourcing practices. SITDRAC is a local committee established by the Singapore National Computer Board, with sponsorship by the IT Management Association (ITMA) and the Singapore IT Federation (SITF). The ITMA professional society represents IT user organizations, and members are all senior IT managers with responsibility for sourcing decisions; the SITF professional society represents IT suppliers. Because the two societies were able to provide lists of both IT outsourcing customers and suppliers, we drew our samples from their membership.

For an initial list of participants, we contacted four of the largest customer organizations and four of the largest supplier organizations from ITMA and SITF, respectively, and requested permission to interview managers with at least three years of experience in managing outsourcing contracts. In total, we interviewed nine customer project managers and

six supplier project managers. Interviews were conducted during the first half of 1999, and all interviewees were promised anonymity. We employed the critical incident technique (Flanagan 1954) and asked interviewees to identify an outsourcing project that was currently underway or had been recently completed. We probed interviewees to describe critical incidents illustrating situations where meeting these obligations was particularly challenging. Interviewees were asked to discuss their obligations to the other contractual party in relation to the project, especially those obligations that were challenging to meet. Interviewees were also asked similar questions regarding the obligations of their contractual party.

Respondents declined our request to tape-record interviews, so three members from the research team (one of the authors and two research assistants) took extensive field notes at each interview session. This ensured that transcripts of each interview were as complete as possible. At each interview, the first author focused on conducting the interview using an interview script, and the accompanying research assistants acted as amanuenses and took copious notes of the interview, which were transcribed the same day. We generated a total of 89 pages of single-spaced text of transcripts, comprising 31,882 words. At the end of the study, we asked interviewees to review the interview summaries and findings. We also presented a confidential executive report (with interview quotes as supporting evidence) to the SITDRAC, and conducted an executive briefing to the public on our findings. This supportive feedback lends additional credence to the validity of the information gathered.

3.1.2. Qualitative Analysis and Interrater Reliability. The approach used by Miles and Huberman (1994) served as the benchmark for coding and analyzing the interview data. We did not have an a priori list of obligations, because this was a first study to identify the contents of customer-supplier obligations in IT outsourcing. As such, we used a more grounded approach to generate the list of customer-supplier obligations from the data. The first and second authors examined the transcribed notes in detail for components representing what customers and suppliers believed their mutual obligations were in the contract. We collated all references to obligations,

then discussed them, and categorized them into major components representing customer and supplier obligations. For each component, a memo was written, including an operational definition and a sample quotation illustrating the component.

Next, we checked codes for definitional clarity and reliability (Miles and Huberman 1994). Two graduate research assistants, blind to the study purposes, independently read the transcripts and coded the data along the lines of these 12 components. We provided the assistants with a one-page write-up containing the operational definition of each component. The assistants then coded the transcript paragraph by paragraph. Each paragraph could contain (and therefore be coded for) one or multiple components. Similarly, if none of the components was mentioned, no code was assigned to that paragraph. The assistants conducted initial coding on one interview transcript, discussed any discrepancies, and developed explicit coding rules to reconcile discrepancies before proceeding to code the rest of the transcripts. The final Cohen's Kappa was 0.86, well above Landis and Koch's threshold of 0.70 (1977) for interrater reliability.[2]

3.2. Study 1: Results and Discussion

Qualitative analysis identified six major components of what customers believe are supplier obligations in an outsourcing project. These were (1) accurate project scoping, (2) clear authority structures, (3) taking charge, (4) effective human capital management, (5) effective knowledge transfer, and (6) building effective interorganizational teams. Similarly, six major components representing what suppliers believe are customer obligations in an outsourcing project were determined to be (1) clear specifications, (2) prompt payment, (3) close project monitoring, (4) dedicated project staffing, (5) knowledge sharing, and (6) project ownership. Table 1 provides a summary of these obligations, with definitions of each obligation, comments relating them to extant research, and sample interview quotes.

Several interesting observations can be gleaned from the obligations identified. First, there are a number of symmetrical obligations between the customer and supplier. For example, supplier obligation for effective human capital management appears to be symmetrical with customer obligation for project staffing. The symmetrical obligation for IT personnel suggests that there must be adequate and high-quality staff available from both sides for the outsourced operations to function smoothly on a day-to-day basis. Similarly, supplier obligation for knowledge transfer appears to be symmetrical with customer obligation for knowledge sharing, suggesting that knowledge-transfer and knowledge-sharing activities are crucial for the success of outsourcing relationships. Furthermore, supplier obligation for clear authority structures is closely related to customer obligation for close project monitoring, because clear authority structures form the essential basis for effective monitoring. This highlights the mutuality of the obligations.

Furthermore, the obligations highlight the reciprocity of the exchange between the parties. For example, supplier obligation for accurate project scoping and customer obligations for clear specifications and prompt payment all relate to the terms of the exchange (Kern and Willcocks 2000). Interestingly, actual delivery of the product or service was not mentioned as an obligation in any of the interviews.[3] One possible reason is that when parties enter into the contractual relationship, there is the default assumption of both parties that a product or service will be delivered. It is, therefore, obvious that the actual product or service forms the essence of the contract; consequently, any dispute is unlikely to be over actual delivery of the specified product or service, but, rather, over interpretation of what is or is not within the specified scope of the product or service (and therefore what might be subject to additional charges). In other words, interviewees may have viewed actual delivery of product or service as being subsumed under the supplier's obligation for accurate project scoping.

Interestingly, the obligations identified also highlight the differences in mindsets and expectations between the two parties. For example, there seems to be an underlying mismatch between the customer's expectation for the supplier to "take charge" of the outsourcing project (supplier obligation for taking

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[2] Additional information on Study 1 participating organizations and coding frequencies are available directly from the authors on request.

[3] We thank an anonymous reviewer for pointing this out.

Table 1   Summary of Customer and Supplier Obligations

Obligation and definition	Sample interview quotes
Supplier obligation for:	
(1) Accurate project scoping—define precisely the nature and range of services covered in the outsourcing contract, and be flexible in handling customers' requests for changes in these services.	• "When the supplier lacks experience in scoping, he is likely to underestimate the costs involved, and underbid on the project. The supplier ends up losing money on the project, and so do[es] it in a slip-shod manner. Ultimately, we are the ones who suffer."—CO1, CM1 • "A major problem we face is that suppliers tend to exercise too tight control over the project scope. Any small change, they will insist on additional charges. The supplier must recognize that there will always be changes in scope during the project."—CO1, CM1
(2) Clear authority structures—delineate the decision-making rights and reporting structures in the project, in terms of the roles and responsibilities of all parties involved.	• "What we learned is that, in any project, there must be clear roles and responsibilities. A major dispute we had [in an earlier project] was over the roles and responsibilities of the parties. The supplier kept on pushing tasks and responsibilities to us, and we ended up escalating [them] to management."—CO4, CM9 • "When there was a problem, the suppliers ended up blaming it on each other. In the end, we were stuck between the two suppliers. We had to call a meeting and ensure that the roles are clearly defined."—CO3, CM4
(3) Taking charge—complete the job and solve problems independently, with minimal customer involvement.	• "Supplier management must be actively involved to make decisions and resolve issues. After all, we are paying the supplier to do the work. It doesn't make sense if they keep coming back to us."—CO3, CM7 • "We came to the stage where we had pages and pages of unresolved issues. The project was slipping, so we had to escalate to the [supplier] CEO, to make sure that the [supplier] managers spent time with us to resolve the issues and make the necessary decisions. Otherwise, the project simply could not go on."—CO2, CM2
(4) Effective human capital management—assign high-quality staff to work on the project, and to minimize staff turnover during the project.	• "The supplier must bring in the right people with the right skills. They must have both content knowledge and industry experience, within-industry as well as cross-industry experience. The supplier must assign a trained experienced manager to oversee the project."—CO2, CM2 • "Initially, the supplier had many good people working on our account, but later on, they replaced these with new ones. But the new staff knew nothing about the project. In the end, the supplier's turnover became our problem. We were very frustrated, as they were learning at our expense."—CO3, CM6
(5) Effective knowledge transfer—educate customer in terms of the necessary skills, knowledge, and expertise associated with using the outsourced system or service.	• "The supplier is the subject matter expert, and so must be prepared to educate us on the latest technology for the industry. In the end, we are paying for intangibles like knowledge."—CO2, CM2 • "Whenever a new technology is involved, we will make sure that the necessary knowledge is transferred to us. A team is assigned to work together with the supplier, and we make sure they document all the information and conduct training for us. Also, the brown bag lunches the supplier organizes are very useful, for our staff to learn new things. Beyond that, we also get our staff to follow the consultant around and learn by doing it together with him."—CO3, CM3
(6) Building effective interorganizational teams—invest time and effort to foster a good working relationship among the team of customer and supplier staff working on the project.	• "The supplier staff must be assimilated into our firm, otherwise, it will always be us versus them. They must be seen as a single project team. Social integration is necessary."—CO3, CM4 • "The supplier needs to break the suspicions, by increasing interactions with our people. This usually includes formalized social events, as well as informal activities like bowling, dinner together, and so on. We had this supplier who spent a lot of time and effort on different team-building activities. They interacted freely with our employees, and organized various social events to get to know them better."—CO2, CM2

Notes. CO = customer organization; CM = customer manager.

Table 1 **(cont'd.)**

Obligation and definition	Sample interview quotes
Customer obligation for:	
(1) Clear specifications—understand and articulate explicitly and comprehensively the requirements for the services covered by the outsourcing project.	• "The project scope and specifications must be well-defined. Otherwise, it is hard to know whether a change is within the project scope or not, and this can often lead to disputes."—SO2, SM4 • "There was this project where the customer had no idea what he wanted. What he requested initially was just a simple database tree search. But after detailed analysis, we realize that what he wants is actually a complex AI database with intelligent search engine. This makes our initial quotation way out!"—SO2, SM2
(2) Prompt payment—pay suppliers on time and not withhold payments unreasonably.	• "Payment is usually not a problem for us. But sometimes, if the customer is not happy with us, he will not sign-off on the project deliverables, and this delays the payment process."—SO4, SM6 • "There was this project where we were late in delivering, and because of the delay, we missed the customer's budget cycle, and the customer ended up not having the money to pay."—SO2, SM2
(3) Close project monitoring—be actively involved in overseeing the project progress by attending project meetings and discussions regularly.	• "The key to a successful project is to reduce disputes from the start. This requires close monitoring of the contract from day one of the project . . . [on this project], the customer tracked the project status very closely. Project meetings were held every week to trace the daily activities, and ad hoc meetings called when critical issues arose."—SO1, SM1
(4) Dedicated project staffing—assign key employees who possess the required skills and knowledge to work with supplier staff on the project.	• "The customer people must be involved, since they are the ones who understand their business. They must also be technically knowledgeable."—SO2, SM3 • "The customer must be willing to commit people to work on the project. We typically negotiate with the customer for employees to give uninterrupted time dedicated to the project. But this is usually difficult, as the [customer] employees still have their own jobs to do. This is especially difficult for the best people . . . We must also make sure that customer staff are not overloaded, else they may just quit their jobs.'"—SO2, SM2
(5) Knowledge sharing—provide information required by supplier, and to educate supplier with the industry- and firm-specific knowledge necessary to build or operate the system.	• "In long term contracts especially, we need to also learn from the customer's applications."—SO3, SM5 • "Many times, we also learn from our customers, the way their business runs. This helps us build up our industry expertise."—SO2, SM4
(6) Project ownership—ensure that senior management provides strong leadership, support, and commitment toward the project.	• "The customer must own the project. He must be involved and be willing to make decisions, and not just rely on us to decide everything for them."—SO4, SM6

Notes. SO = supplier organization; SM = supplier manager.

charge) and the supplier's expectation for the customer to "own the outsourcing project" (customer obligation for project ownership). Customers often outsource in order to be relieved of the administrative hassles of managing the related IT tasks. Thus, it is not surprising that customers expect their suppliers to take charge of the entire project. However, such a "hands-off" attitude is inconsistent with the supplier's expectation that customers fulfill their obligations in the area of project ownership. The apparent conflict highlights the differences in mindsets and expectations and the underlying goal incongruence between the parties (Lacity and Hirschheim 1993).

Overall, although our results show considerable agreement regarding the terms of the psychological contract, they also highlight some differences reflecting the underlying different perspectives of the two parties. This reflects the fact that psychological contracts must be conceptualized as entire bundles of obligations, representing the party's mental model or schema of the relationship (Rousseau 1995). Specifically, this reciprocal exchange involves the entire bundle of obligations rather than the exchange of a discrete or specific obligation for another. This is consistent with empirical research on employer-employee psychological contracts, which has shown that the discrete elements of employer and employee obligations are not matched in pairs. For example, Rousseau's (1990) set of employer obligations include advancement, high pay, performance-based pay, training, job security, development, and support, whereas employee obligations include overtime, loyalty, extra role behaviors, notice, transfer, no competition, protection of proprietary information, and minimum stay. In the next section, we describe the second phase of the research, a field study designed to assess the impact of these obligations on outsourcing success.

4. Study 2: Assessing Effects of Fulfilled Obligations on Success

In Study 1, we identified the contents of the outsourcing psychological contract. The underlying premise is that outsourcing success requires that customers and suppliers understand and fulfill their mutual obligations. This is important: Research on psychological contracts has shown that obligations are often unfulfilled, and psychological contract violation is "not the

exception but the norm" (Robinson and Rousseau 1994). For example, in this study the authors found that the majority (54.8%) of the respondents reported violations of their psychological contracts. A later study (Coyle-Shapiro and Kessler 2000) similarly found that the majority of the employees surveyed reported psychological contract breach, and that this view was also found in their managers (who represent the employer).

More importantly, unfulfilled psychological contracts have also been shown to lead to significant negative effects for the parties involved. Research in the employment context consistently demonstrates that psychological contract breach or violation can lead to various negative employee attitudes and behaviors, including reduced job satisfaction, reduced trust, and reduced organizational commitment (Robinson and Rousseau 1994), higher turnover intention, and higher actual turnover (Turnley and Feldman 2000). Furthermore, psychological contract breach or violation can negatively impact important work-related outcomes, such as work performance and organizational citizenship behavior (Turnley and Feldman 2000). Conversely, research has similarly demonstrated that psychological contract fulfillment can lead to increased organizational support, commitment, and organizational citizenship behavior (Coyle-Shapiro and Kessler 2000). Based on the extensive empirical evidence of the positive relationship between fulfillment of obligations and performance outcomes, we thus hypothesize the following.

HYPOTHESIS 1. *Perceived outsourcing success by the customer is positively associated with the extent to which supplier obligations have been fulfilled.*

HYPOTHESIS 2. *Perceived outsourcing success by the supplier is positively associated with the extent to which customer obligations have been fulfilled.*

To test our hypotheses, we conducted a second study, a quantitative field study using a survey methodology. We developed a questionnaire instrument to measure customer and supplier perceptions of the degree to which each of the identified obligations had been fulfilled. These obligations represent interorganizational level obligations, but they were perceived at the individual level. This is consistent with our emphasis on the psychological contract as being seen

through the eyes of the role incumbent, encompassing both formal organizational roles and interpersonal relationships.

4.1. Study 2: Methods

4.1.1. Participants and Data Collection Procedures. Data collection was conducted in several stages. In the first round, we sent invitation letters to members of the ITMA and SITF, together with cover letters encouraging participation from the chairmen of the societies. In addition, we contacted each member by telephone a week after the mailing. Organizations that agreed to participate in the study furnished names and contact information of managers with responsibility for managing outsourcing projects. From this first round, 90 of 180 customer organizations (50% participation rate) and 68 of 158 supplier organizations (43% participation rate) agreed to participate in the study. Chi-square analysis showed no significant difference between participating and non-participating organizations for either firm size ($\chi^2 = 1.16$, $p = $ ns) or firm type ($\chi^2 = 1.36$, $p = $ ns), suggesting that nonrespondent bias was not a problem.

In the second round, we telephoned all identified managers to inform them about the purpose of the study and invite them to participate. To eliminate primacy effects and hypothesis guessing, we excluded the 15 managers who participated in Study 1 interviews. Respondents were guaranteed confidentiality and access to the summarized survey results. We mailed each respondent a packet containing the invitation letter, the cover letter from the association's chairman, the survey questionnaire, and a self-addressed stamped envelope. This was followed by telephone calls to all nonrespondents two weeks after the initial mailing, to encourage participation. A second copy of the questionnaire was mailed or faxed when needed. We examined all returned questionnaires for completeness, and contacted respondents by telephone to obtain any missing information. At the end of the study, we sent all respondents a "thank you" letter and an executive summary of the results.

In this second round, we sent out survey questionnaires to 262 customer project managers from the 90 customer organizations, and 341 supplier project managers from the 68 supplier organizations. We received completed returns from 179 (68% response rate) customer project managers from the 90 customer organizations, and 191 (56% response rate) supplier project managers from the 68 supplier organizations. In sum, we received completed returns from 179 customer project managers and 191 supplier project managers, representing a total of 158 organizations. These relatively high rates of participation also suggest that response bias was not a severe problem.

On average, customer respondents were 36.6 years old (s.d. = 6.5 years) and supplier respondents were 35.2 years old (s.d. = 5.7 years). About 65% of customer respondents and 64% of supplier respondents were male. Customer respondents reported an average of 4.2 years (s.d. = 4.4 years) of work experience in their current position, and supplier respondents averaged 3.3 years (s.d. = 3.1 years). Dispersion of respondents across the population of interest was quite good. Customer respondents represented a variety of industries, including government, banking, retail, health care, transport, and manufacturing. Supplier respondents also came from a breadth of industries, including hardware vendors, software developers, telecommunications firms, and software consulting firms. The majority of the contracts (54%) were for application development and maintenance. About half of the contracts (51%) lasted less than one year, and the average duration was 1.4 years. The contract amount represents a wide spectrum of contract size, with 42% of the contracts costing less than 0.5 million Singapore dollars and ranging up to 6 billion Singapore dollars.

4.1.2. Study 2: Measures and Pretest.

Psychological Contract Obligations. Lacking standard scales, we developed our own instrumentation for psychological contract obligations. Building from the content-validation process described in Study 1, we used a multistage iterative procedure. First, a set of three to five items was crafted for each obligation. These were then pilot tested with three senior project managers from ITMA and SITF. Minor modifications were made based on feedback from these managers. Throughout the scale development process, we made a considerable effort to ensure that each statement captured the intended meaning of each construct. All items were measured on a five-point scale (1 = not fulfilled at all, 5 = fulfilled to a very large extent).

Outsourcing Success. We operationalized outsourcing success through items for overall satisfaction with the contract as well as the desire to retain the outsourcing partner (Saunders et al. 1997). Satisfaction is a common measure of success in IT outsourcing research (e.g., Susaria et al. 2003), and is used as a proxy for the perceived effectiveness of the relationship. Satisfaction is also predictive of future actions (Poppo and Lacity 2002), and is closely related to the parties' intention to continue the relationship, either in the current contract or in subsequent repurchase. Continuance of the contractual relationship is important because outsourcing customers have to incur high switching costs when changing suppliers, costs deriving from suppliers needing to learn the customers' business and systems. Similarly, it is more costly for suppliers to acquire new customers than to retain existing ones. We measured outsourcing success with a single index comprising of six items (1 = strongly disagree, 7 = strongly agree). The index thus taps into both satisfaction (adapted from Poppo and Lacity 2002) and intention to continue the outsourcing relationship (adapted from Kristensen et al. 2000).

Control Variables. We controlled for three project characteristics that are often thought to influence outsourcing success. Project type (0 = non-systems-development project, 1 = systems development project) was chosen because systems development projects typically involve higher uncertainty and asset specificity (Ang and Beath 1993). Given that short-term contracts involve less uncertainty and exhibit a higher frequency of success than long-term contracts (Lacity and Willcocks 1998), we also controlled for project duration (contract length in days, with log-normal transformation). Finally, project size (contract amount, with log-normal transformation) was a possible rival hypothesis because large projects are more complex, with the multiple parties involved, and they are higher in uncertainty (Lacity and Willcocks 1998).

4.1.3. Quantitative Analyses. To assess construct validity—namely, convergent and discriminant validity—we conducted an exploratory principal components factor analysis (PCA), using, respectively, customer and supplier data. In each case, PCA was run with the six obligations and perceptions of outsourcing success. To assess the effects of obligations on success, we conducted hierarchical regressions, again

using customer and supplier data, respectively. In each case, we entered control variables (project type, duration, and size) in Step 1 and obligations in Step 2. We interpreted results based on the change in F (ΔF) at Step 2, and t-values of individual parameters.

4.2. Study 2: Results

4.2.1. Results of Construct Validity. Exploratory factor analysis (principal component analysis with Varimax rotation and eigenvalues >1.0) produced the hypothesized seven-factor solution (perception of outsourcing success and six obligations) in both customer and supplier samples.[4] The seven-factor solution accounted for 77.6% of the variance for the customer sample, and for 76.9% of the variance for the supplier sample. Five items with inadequate loadings were dropped and excluded from further analyses. All retained items (see Table 2) loaded on their expected factors (loadings ranged from 0.52 to 0.91). Table 3 shows descriptive statistics, correlations, and Cronbach's α. Cronbach's α values for all constructs were above the recommended level of 0.60 for exploratory work, indicating that the constructs are reliable.

4.2.2. Assessment of Common Methods Variance. To ensure that common methods bias was not a significant problem in our data, we conducted Harman's single-factor test. The logic underlying the single-factor test is that if method variance is largely responsible for the covariation among the measures, factor analysis should find a single (method) factor fitting the data. As reported earlier, PCA found that a multifactor solution was a better fit than a single-factor model. Confirmatory factor analysis similarly showed that a single factor model did not fit the data well; our hypothesized seven-factor model was a significantly better fit than a single-factor model in both the customer sample [$\Delta \chi^2(21 \, df) = 1484.34$, $p < 0.001$] and supplier sample [$\Delta \chi^2(21 \, df) = 1867.85$, $p < 0.001$].

We also conducted further analysis to partial out the effects of common method variance. Factor analyzing both independent and dependent variables,

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[4] Exploratory factor analysis using oblique rotation produces the same seven-factor structure, with all retained items loading on the hypothesized factors.

Table 2   Questionnaire Items[a]

Supplier obligation	Customer obligation
(1) Accurate project scoping Estimates the contract scope accurately (i.e., not underbid or overbid) Accepts scope change without additional charge Builds buffer into contract to accommodate scope changes	**(1) Clear specifications** Understands customer's own product or systems requirements clearly Defines clearly the deliverables required Defines clearly specifications of product or service
(2) Clear authority structures Defines precisely the roles of each party Defines precisely the responsibilities of each party Lays out clearly what each party is to perform	**(2) Prompt payment** Is prompt in payment Makes payment on time Gives necessary approval for payment at predefined milestones
(3) Taking charge Works independently (i.e., minimal reliance on you [customer]) in getting the job done Completes the job with minimal disruption to your (customer's) operations Solves problems with minimal involvement from you (customer)	**(3) Close project monitoring** Attends your (supplier's) presentation of project milestones Attends key project meetings regularly Conducts ongoing discussions during project
(4) Dedicated project staffing Assigns adequate staff dedicated to the project (i.e., few staff changes) Keeps customer staff turnover low during the project Replaces any leaving customer staff with someone more qualified or with equivalent expertise	**(4) Effective human capital management** Assigns adequate staff dedicated to the project (i.e., few staff changes) Keeps supplier staff turnover low during the project Replaces any leaving supplier staff with someone more qualified or with equivalent expertise
(5) Knowledge sharing Transfers knowledge to your (customer's) staff Shares best industry practices with you (customer) Transfers know-how of the product or service to you (customer) Delivers complete and comprehensive documentation (e.g., manuals, product and design specifications)	**(5) Effective knowledge transfer** Provides necessary information to you (supplier) to do the job Transfers business know-how to you (supplier) Transfers knowledge to your (supplier's) staff
(6) Building effective interorganizational teams Invests time in building a good relationship with you (customer) Has a common or joint sense of mission and purpose with you (customer) Works as a team with you (customer)	**(6) Project ownership** Responds promptly whenever you (supplier) need information Provides fast turnaround to your (supplier's) requests Responds beyond call of duty to urgent requests

[a] Items measured on a five-point scale (1 = not fulfilled at all, 5 = fulfilled to a very large extent).

Table 3   Means, Standard Deviations, Scale Reliabilities, and Intercorrelations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
(a) *Customer respondents*[a]												
1. Project type[b]	0.51	0.50	—									
2. Project duration[c]	2.55	0.43	0.07	—								
3. Project size[d]	5.65	0.81	0.12	0.41**	—							
4. SO for accurate project scoping	2.69	1.02	−0.15*	0.00	−0.17*	(0.67)						
5. SO for clear authority structure	3.43	0.94	−0.15	−0.04	0.00	0.22**	(0.94)					
6. SO for taking charge	3.08	0.94	−0.08	−0.17*	−0.25**	0.37**	0.40**	(0.88)				
7. SO for effective human capital management	2.90	1.08	−0.01	0.01	0.02	0.27**	0.38**	0.47**	(0.70)			
8. SO for effective knowledge transfer	2.84	1.03	−0.10	−0.15	−0.06	0.33**	0.38**	0.52**	0.55**	(0.88)		
9. SO for building effective interorganizational teams	3.22	0.91	−0.09	−0.12	0.00	0.35**	0.38**	0.44**	0.50**	0.59**	(0.85)	
10. Perceived outsourcing success	4.58	1.36	−0.21**	−0.12	−0.09	0.30**	0.46**	0.56**	0.50**	0.58**	0.54**	(0.96)
(b) *Supplier respondents*[a]												
1. Project type[b]	0.57	0.50	—									
2. Project duration[c]	2.47	0.42	0.07	—								
3. Project size[d]	5.82	0.80	0.02	0.56**	—							
4. CO for clear specifications	3.27	1.07	−0.14*	0.03	−0.01	(0.89)						
5. CO for prompt payment	3.10	1.27	−0.02	0.20**	0.20**	0.19**	(0.90)					
6. CO for close project monitoring	3.72	0.89	−0.06	0.13	0.20**	0.35**	0.30**	(0.86)				
7. CO for dedicated project staffing	3.00	1.13	−0.13	0.00	0.02	0.26**	0.20**	0.30**	(0.75)			
8. CO for knowledge sharing	3.12	1.11	−0.02	0.14*	0.12	0.37**	0.21**	0.48**	0.33**	(0.90)		
9. CO for project ownership	3.03	0.98	−0.19*	0.02	0.02	0.47**	0.34**	0.53**	0.24**	0.49**	(0.88)	
10. Perceived outsourcing success	5.33	1.24	−0.10	−0.09	0.04	0.43**	0.33**	0.44**	0.28**	0.37**	0.53**	(0.94)

Notes. SO = supplier obligation; CO = customer obligation.
[a] $n = 179$ and 191, respectively. Reliability coefficients are in parenthesis along the diagonal.
[b] Coding: 0 = non-systems-development projects, 1 = systems development projects.
[c] Coding: length of contract in days with log-normal transformation.
[d] Coding: dollar amount of contract with log-normal transformation.
Success items measured on a seven-point scale (1 = strongly disagree, 7 = strongly agree); obligation items measured on a five-point scale (1 = not fulfilled at all, 5 = fulfilled to a very large extent).
* $p < 0.05$; ** $p < 0.01$.

we extracted the first factor, which should contain the best approximation of common method variance. We then reanalyzed the relationships between independent and dependent variables after partialling out the variance accounted for in the first factor. Results showed that addition of the six obligations explained a significant amount of variance in outsourcing success, over and above a general methods factor, in both the customer ($\Delta F = 36.49$, $p < 0.001$) and supplier ($\Delta F = 65.74$, $p < 0.001$) samples. The significant relationships remained unchanged even after the method effects were partialled out, providing further support that common method variance was not overly influencing results.

4.2.3. Effects of Obligations on Success. Table 4 summarizes the hierarchical regression results. For the customer sample, the model explained 51% of the variance in outsourcing success ($F = 19.24$, $p < 0.001$). The set of control variables in Step 1 was marginally significant ($F = 3.35$, $p < 0.05$), and addition of the six supplier obligations was significant ($\Delta R^2 = 0.46$, $\Delta F = 25.76$, $p < 0.001$). In terms of individual paths, five of the six hypothesized relationships were significant. Outsourcing success showed a significant positive relationship with supplier obligations for clear authority structures ($\beta = 0.15$, $p < 0.05$), taking charge ($\beta = 0.25$, $p < 0.001$), effective human capital management ($\beta = 0.13$, $p < 0.05$), effective knowledge transfer ($\beta = 0.21$, $p < 0.01$), and building effective interorganizational teams ($\beta = 0.17$, $p < 0.01$). Contrary to expectations, supplier obligation for accurate project scoping was not significantly related to success ($\beta = 0.00$, $p =$ ns).

For the supplier sample, the model explained 41% of the variance in outsourcing success ($F = 13.80$, $p < 0.001$). The set of control variables in Step 1 was not significant ($F = 1.94$, $p =$ ns), but addition of the six customer obligations was significant ($\Delta R^2 = 0.38$, $\Delta F = 19.17$, $p < 0.001$). In terms of individual paths, four of the six hypothesized relationships were significant. Outsourcing success showed a significant positive relationship with customer obligations for clear specifications ($\beta = 0.20$, $p < 0.01$), prompt payment ($\beta = 0.16$, $p < 0.01$), close project monitoring ($\beta = 0.14$, $p < 0.05$), and project ownership ($\beta = 0.27$, $p < 0.001$). Contrary to expectations, customer obligations for dedicated project staffing ($\beta = 0.07$, $p =$ ns)

Table 4   Results of Hierarchical Regression Analysis[a]

Variables	Model 1	Model 2
Customer perception of outsourcing success		
Project type[b]	−0.20**	−0.13*
Project duration[c]	−0.09	−0.01
Project size[d]	−0.03	0.00
SO for accurate project scoping		0.00
SO for clear authority structures		0.15*
SO for taking charge		0.25***
SO for effective human capital management		0.13*
SO for effective knowledge transfer		0.21**
SO for building effective interorganizational teams		0.17**
F	3.35*	19.24***
ΔF		25.76***
R^2	0.05	0.51
ΔR^2		0.46
Adjusted R^2	0.04	0.48
Supplier perception of outsourcing success		
Project type[b]	−0.09	0.01
Project duration[c]	−0.16*	−0.22**
Project size[d]	0.14	0.10
CO for clear specifications		0.20**
CO for prompt payment		0.16**
CO for close project monitoring		0.14*
CO for dedicated project staffing		0.07
CO for knowledge sharing		0.06
CO for project ownership		0.27***
F	1.94	13.80***
ΔF		19.17***
R^2	0.03	0.41
ΔR^2		0.38
Adjusted R^2	0.01	0.38

Notes. SO = supplier obligation; CO = customer obligation.
[a] Model statistics are standardized betas.
[b] Coding: 0 = non-systems-development projects, 1 = systems development projects.
[c] Coding: length of contract in days with log-normal transformation.
[d] Coding: dollar amount of contract with log-normal transformation.
Success measured on a seven-point scale (1 = strongly disagree, 7 = strongly agree); obligations measured on a five-point scale (1 = not fulfilled at all, 5 = fulfilled to a very large extent).
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

and knowledge sharing ($\beta = 0.06$, $p =$ ns) were not significantly related to success.

4.3. Study 2: Discussion

Results from Study 2 showed that psychological contract obligations explained a significant amount of the variance in perceived outsourcing success (46% for customer data, 38% for supplier data) over and above the effects of the control variables of project type, duration, and size. In addition, five supplier obligations and four customer obligations demonstrated a significant positive relationship with success.

From the customer's perspective, outsourcing success was significantly related to supplier obligation for clear authority structures and taking charge. A major reason customers outsource is to be relieved of the day-to-day administration and management of the IT tasks. This requires clear authority structures to be in place so that the parties involved have a clear understanding of their roles and responsibilities. For example, some outsourcing contracts could specify responsibility matrices in the body of the contract to address this issue (Lacity and Willcocks 2001). However, given that roles and responsibilities evolve, with new roles emerging and existing roles made redundant, the supplier must show initiative in taking charge during the project, and must resolve any arising issues without repeatedly reverting to the customer.

Outsourcing success was also significantly related to supplier obligation for effective human capital management and effective knowledge transfer. Customers often outsource to gain access to technical skills and expertise. For this to take place, suppliers must manage their human capital effectively by ensuring that they assign sufficient employees with the required skills to work on the project and to minimize turnover. It also requires suppliers to put in place policies and procedures to ensure effective knowledge transfer to the customer.

Outsourcing success was also significantly related to supplier obligation for building effective interorganizational teams. This is consistent with research demonstrating the importance of a partnership approach to outsourcing (Kern and Willcocks 2000).

Surprisingly, supplier obligation for accurate project scoping was not significantly related to success. To understand the possible reasons, we approached several supplier project managers post hoc. Discussions with these supplier project managers revealed that suppliers usually try to be accommodating and accept changes to project scope without additional charges. This is because the outsourcing market in Singapore is relatively small, and suppliers need to remain highly competitive. As a result, even when the initial scoping is not accurate, suppliers tend to absorb the scope changes to build a good reputation and gain repeat business.

From the supplier's perspective, outsourcing success was significantly related to customer obligation

for clear specifications and prompt payment. This is consistent with recent work demonstrating the importance of the terms of the exchange (Kern and Willcocks 2000), within which specifications and payment are the essential elements. Outsourcing success was also significantly related to customer obligation for close project monitoring and project ownership. This reflects the fact that outsourcing is essentially an agency relationship; therefore, the customer's active involvement during the project in terms of psychological ownership and close monitoring is required to reduce the risks of moral hazard.

Contrary to expectations, customer obligation for knowledge sharing and dedicated project staffing were not significantly related to success. Again, we approached several customer project managers after the fact. Discussions with these customer project managers revealed that, for projects such as transaction processing systems, suppliers typically possessed sufficient expertise to carry out the work, thereby rendering knowledge sharing less critical. Suppliers might have culled their expertise from other sources such as previous contracts. This would also account for the nonsignificant relationship between customer obligation for dedicated project staffing and success. If the supplier possessed sufficient knowledge to carry out the projects, it would be less crucial to have the customer's employees dedicated to the project, because customer tacit knowledge would be less necessary. Clearly, more work needs to be done to understand the effects of customer obligation for dedicated project staffing and knowledge sharing, and the circumstances under which they might be important for outsourcing success.

5. Overall Conclusion, Implications, and Limitations

The objective of this paper was to examine the psychological contract between outsourcing customers and suppliers, an alternative approach that would focus uniquely on both parties' perspectives. To that end, we conducted a qualitative study to identify the nature of the psychological contract obligations in IT outsourcing, and a quantitative field study to assess the effects of fulfilling these obligations on success. Results from our study showed the existence of a psychological contract between outsourcing customers

and suppliers, and that fulfilling these obligations explained a significant amount of the variance in outsourcing success.

5.1. Contributions

Results of this study have both theoretical and practical implications. The greatest theoretical contribution of this paper is the introduction of a new theoretical perspective—the psychological contract perspective—to help understand the ongoing IT outsourcing relationship. To the best of our knowledge, this paper represents the first attempt to formulate the outsourcing relationship as a psychological contract between a customer and a supplier project manager.

The psychological contract perspective provides a more complete understanding of outsourcing in several ways. First, our study on the mutuality of obligations contributed to existing research by focusing on both the customer *and* supplier perspectives in managing the outsourcing relationship. The extant research, with its primary focus on the customer perspective, ignores the reciprocal nature of outsourcing contracts, and provides only a one-sided view. Second, our study goes beyond the legal contract and shows that an individual's psychological contract, which reflects the way the parties interpret and understand their mutual obligations in the contract, can influence success. Third, by focusing on the individual level of analysis, our study complements existing research that has, hitherto, been restricted to measures of interactions between customer and supplier organizations. As far as we are aware, our study is one of the first to explore the individual level of analysis of a macro-phenomenon such as IT outsourcing. Finally, by identifying the nature of these obligations and showing their relationship to success, our work provides a useful starting place for further refinements of the psychological contract perspective in IT outsourcing. Some of these obligations have been discussed in the literature, but this study also highlights the importance of other oft-neglected obligations, such as customer obligation for prompt payment and supplier obligation for taking charge.

From the perspective of practice, two important implications follow. Most importantly, our study identifies the specific issues on which customers and suppliers should focus. Through the combination of qualitative and quantitative methods, we identify the obligations of both customers and suppliers, and demonstrate their effect on success. Customers and suppliers should pay particular attention to ensure that these specific obligations are met. In addition, the concept of a psychological contract highlights the fact that not all promises are incorporated into the legal contract. Ambiguous promises are more likely to lead to perceived psychological contract breach, so customers and suppliers should work toward clarity of the promises and make the obligations as explicit as possible.

5.2. Limitations

Although our study found evidence for the importance of the psychological contract to outsourcing success, it is important to note boundary conditions of the study. The obligations were identified using a grounded approach based on interviews with customer and supplier project managers in Singapore. We have taken every effort to ensure validity of the results, but we cannot ensure that the list of obligations identified is exhaustive, and there remains a possibility that certain obligations were not mentioned by the interviewees or identified by the authors. Furthermore, results were based on data collected from only ITMA and SFCI members in Singapore, thereby opening up the possibility that findings are specific to the Singapore context. IT outsourcing practices in Singapore are similar in many respects to the U.S. and U.K. environments in that IT outsourcing contracts are contracted through arms-length competitive bidding between major IT service providers such as Accenture, IBM, CSC, and customer organizations; this differs from practices in other parts of Asia such as Korea and Japan where suppliers are from the same chaebol or affiliated companies (Lee et al. 2004). In terms of differences, outsourcing practices tend to be more mature in the U.S. and U.K. markets, and are also likely to be more developed compared with Singapore markets, given the lower level of experience with management of IT outsourcing in Asian countries. Also, contracts in our study are relatively short in duration (average 1.4 years), compared with outsourcing deals in the United States averaging 4.0 years and the United Kingdom averaging 4.7 years (Lacity and Willcocks 2000b), and involve primarily systems development outsourcing, unlike the United States and United Kingdom, where infras-

tructure operations are the most commonly outsourced activities (Lacity and Willcocks 2000b). The results of our study provide interesting insights into the outsourcing practices in Singapore; we recommend future research in other settings to determine the generalizability of our findings, however.

With the changing landscape in IT outsourcing, it would also be interesting to explore how our findings apply to newer forms of outsourcing such as ASPs and offshore outsourcing contracts. Although many of the issues and managerial problems associated with ASPs are similar to traditional outsourcing, there are subtle differences between the two (Currie and Seltsikas 2001). Similarly, offshore outsourcing usually involves higher complexity because of the need to control the project remotely and to interact cross-culturally (Carmel and Agarwal 2002). Future research could explore whether the nature and importance of the customer-supplier obligations differ in such new outsourcing contracts.

Last but not least, our study was cross-sectional in nature, and assessed respondent perceptions of the obligations at a specific time. Consequently, we cannot adequately address the issue of causality among the variables. An ideal empirical design would be to conduct a longitudinal study, and measure the parties' perceptions of what they were promised at the start of the project, then their perceptions of what they had received by the end of the project.

5.3. Future Research
These limitations notwithstanding, we feel that our study has provided meaningful insights into the importance of the psychological contract in IT outsourcing. The application of psychological contract theory to IT outsourcing is still new, and research in this area is scant. We encourage others to carry out further research in this area.

IT outsourcing relationships, like any other interorganizational relationships, are inherently multilevel. Our study looks at the individual interpersonal level of analysis, but we have limited our study to only two key stakeholders—customer and supplier project managers in Singapore. Customers and supplier project managers are typically the key interface in the relationship, but many other individuals at different levels in the hierarchy are involved. Future research should explore the views and perspectives of other stakeholders, such as senior customer and supplier managers, customer end-users, and customer and supplier IT support staff.

Researchers could also build on the wealth of current outsourcing research at the interorganizational level, and explore whether research findings at the interorganizational level translate to the individual interpersonal levels. For example, prior work has demonstrated the importance of interorganizational trust on outsourcing success. It would be interesting to find out whether the nature of trust at the organizational level (i.e., interorganizational trust) differs from the individual level (i.e., interpersonal trust) (see Zaheer et al. 1998). Cross-level analysis can also be conducted to explore how individual-level variables (e.g., interpersonal trust) affect organizational-level variables (e.g., firm performance).

Our study focuses on the impact of individual obligations on success, but it would also be interesting to look at intellectual connections between the various obligations, and to explore how these obligations complement one another. For example, one may speculate that in projects where clear authority structures do not exist, it may be particularly desirable for the parties to work together to build an effective interorganizational team. Future work could explore whether such obligations are compensatory in nature.

Finally, longitudinal studies of a smaller number of outsourcing projects can be carried out to establish causality effects in the theoretical model. Future research can also explore antecedents to the obligations, the process by which the obligations are formed, and whether they have evolved or changed over time.

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