

GOVERNING INTER-ORGANIZATIONAL RELATIONSHIPS IN THE
PRESENCE OF *EX POST* OPPORTUNISM AND UNCERTAINTY: AN
ALIGNMENT MODEL OF MANAGING OUTSOURCING

By

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ABSTRACT

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Despite the importance of outsourcing engagements, little research has been done on effectiveness of governance mechanisms. In particular, the effectiveness of governance mechanisms were not examined in the presence of risks such as *ex post* opportunism and uncertainty. Specifically, this research examines the effectiveness of transactional and relational governance mechanisms in the management of outsourcing engagements. Consequently, answers to three main research questions are sought as part of this dissertation.

First, this research examines the effective governance mechanisms in the presence of *ex post* opportunism and project uncertainty. The results indicate that the configurations of effective governance mechanisms are different for different configurations of risk. Second, the research explores if there are any specific patterns of governance mechanisms that are being currently used by outsourcing engagements. The results indicate that managers tend to choose specific patterns of governance mechanisms based on the strategic importance as well as risk faced in the engagement. Finally, this research examines if transactional governance mechanisms and relational governance mechanisms are complements or substitutes. The results indicate that transactional and relational governance mechanisms act as complements to each other. Specifically, the results depend on the level of opportunism exhibited by the supplier and the strategic importance of the outsourcing engagement. When the supplier is cooperative, relational governance mechanisms provide superior outsourcing performance. On the other hand, when the

supplier is uncooperative (i.e., behaves in an opportunistic manner), the results diverge.

Transactional governance mechanisms are beneficial when the outsourcing engagement is strategically important.

Based on the results, both transactional and relational governance mechanisms are seen as important. The effectiveness of the governance mechanisms differ based on the level of risk and the strategic importance of the outsourcing engagements. Managerial insights corresponding to these results are presented in this dissertation. The results provide clarity and recommendations to managers on instituting appropriate governance mechanisms in outsourcing engagements.

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Dedication

This dissertation is dedicated to my wife, Leila and my parents, Srinivasan and Janaki. They provided me the support and encouragement in following my dream of pursuing a doctoral degree.

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I would like to first thank my family for providing me the support and encouragement during my pursuit of the doctorate degree. My parents, Srinivasan and Janaki, instilled in me the love for knowledge and the necessary work ethic that immensely helped me during my doctoral years, especially during my dissertation. I would like to thank my wife, Leila, from the bottom of my heart. Her love, encouragement, patience and occasional admonition helped me stay focused during my doctoral years.

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CHAPTER 1: INTRODUCTION

This chapter introduces the research topic for this dissertation and provides motivations to study this topic. The research methodology used to collect data and analyze results is presented. Following this, the contributions to literature is discussed. Finally, the chapter concludes by providing an outline of chapters in this dissertation.

1.1 Research topic

This dissertation examines the effective management of buyer-supplier relationships in the context of outsourcing engagements. Specifically, this dissertation examines effective configurations of governance mechanisms in the presence of project uncertainty and supplier *ex post* opportunism. Researchers have established that transactional governance mechanisms enhance the performance of buyer-supplier relationships (Jap & Anderson, 2003; Mayer & Argyres, 2004; Stump & Heide, 1996). Furthermore, researchers have called for the use of relational governance mechanisms to effectively manage buyer-supplier relationships (Handley & Benton Jr, 2009; Li, Xie, Teo, & Peng, 2010; Liu, Luo, & Liu, 2009; Paulraj, Lado, & Chen, 2008).

However what is not clear is the effectiveness of transactional and relational governance mechanisms on outsourcing performance in the presence of risk. Specifically, do the configurations of governance mechanisms that effectively improve performance change with different risk profiles. Some research has argued for the examination of transactional and relational mechanisms as being complementary or substitutes (Li et al., 2010; Liu et al., 2009). This dissertation offers clarity by incorporating risk – both project and relational risks – to

examine the effectiveness of transactional governance mechanisms in achieving superior outsourcing performance.

Although the governance mechanisms examined are not exhaustive, general inferences can be made regarding management of buyer-supplier relationships. Typically, buyers institute mechanisms that are transactional in nature, such as monitoring, to ensure that suppliers are working toward the best interest of the buyer. Furthermore, recent calls for the use of relational governance mechanisms have been heeded by practitioners and increasingly have been instituted in the outsourcing engagements. Some clarity is still needed in effective deployment of these governance bundles when the buyer encounters risks in the outsourcing engagements.

In accordance with the above motivations, two principal questions are addressed in this dissertation. What are the effective configurations of governance mechanisms corresponding to risk profiles? What are the commonly occurring sets of governance mechanisms (i.e., *gestalts*) that correspond to the nature of the outsourcing relationship? Both these questions are asked with the implication that the effectiveness of governance mechanisms will lead to better outsourcing performance. Through examination of these questions, this dissertation also attempts to answer the question if transactional and relational governance mechanisms act as complements or substitutes. In the next section, the motivation for pursuing these questions is presented.

1.2 Motivations

This subsection describes both the theoretical and practical reasons for researching effective configurations of transactional and relational governance mechanisms in the presence of project uncertainty and supplier *ex post* opportunism.

1.2.1 Theoretical motivation

A resolution to the question of how the effective configurations of governance mechanisms change with changing risk profiles and nature of outsourcing engagements is of theoretical value. The key focus of this dissertation is to examine the effectiveness of governance mechanisms in the presence of project uncertainty and supplier *ex post* opportunism. Typically, researchers have claimed that relational governance mechanisms need to be implemented alongside with transactional governance mechanisms (Handley & Benton Jr, 2009; Li et al., 2010; Liu et al., 2009). These studies argue for universality of such an approach without consideration of contingent factors. Contingent factors considered are project related risks, relational risks and the strategic importance of outsourcing engagements. Both transaction cost economics and agency theory have argued for the importance of uncertainty and opportunism and their influence on inter-organizational relationships. In this dissertation, uncertainty is conceptualized as project related risks and relational risks as supplier *ex post* opportunism. Given the importance of risk mitigation in buyer supplier relationships, it is particularly important to address this gap in literature. In addition, this dissertation also provides insights on effective governance mechanisms based on strategic importance of the outsourcing engagements. Increasingly, researchers have recognized that firms are outsourcing activities that are considered strategic in nature (Gilley & Rasheed, 2000; Gottfredson, Puryear, & Phillips, 2005; Holcomb & Hitt, 2007). The paucity of research in examining effective governance mechanisms is addressed through this dissertation.

More recently, researchers have been calling for examination of transactional and relational governance mechanisms. One question that remains unanswered is if the two forms of governance mechanisms (transactional & relational) complement or substitute each other. This

dissertation provides insights by examining the effectiveness of governance mechanisms under different contingent conditions.

1.2.2 Practical motivation

Motivations to pursue outsourcing have changed in the recent years. Traditionally, firms were outsourcing activities that were considered peripheral to the firm. Increasingly, many firms are outsourcing strategic activities that are directly related to a firm's core competence. Furthermore, the firms are collaborating with specialist organizations to gain capabilities (Gottfredson et al., 2005). In addition to the varied motivations to outsource activities, the monetary value of outsourcing projects has increased. The average size of the top 20 outsourcing contracts is just under \$1 billion and on average outsourcing contracts were valued at around \$200 Million (Gartner, 2008). These trends suggest that the size and scope of outsourcing engagements has increased considerably.

Whereas the size and scope of outsourcing engagements has increased over the years, the problems with managing these engagements have persisted. In 2007, Gartner report cautioned that "sourcing strategies and governance structures are still immature, lacking altogether, or misaligned with enterprise objectives. Because these organizations lack the basic building blocks for successful vendor management and outsourcing success, expected cost savings and other benefits are difficult to obtain" (Potter 2007, p.2). Commenting on managing suppliers, Choi and Krause (2006, p. 637) state that, "With the recent trend of increasing levels of outsourcing, orchestrating activities with suppliers in the supply base from the perspective of a focal company has become a top strategic issue". This sentiment is also reflected in practitioner articles. For example, HR Outsourcing association mention in a report that, "arguably the hardest part of

outsourcing occurs after the deal is done: undertaking the transition and performing ongoing outsourcing management and governance (OM/G)” (HR Outsourcing Association, 2007). These statements provide the practical motivations to understand the effective management of outsourcing engagements.

Buyer-supplier relationships are mired with risks. For example, BusinessWeek (2006) reported that considerable delays in the design and development of Boeing 787 Dreamliner were encountered because Boeing was late in providing the requirements of the product to its suppliers. Furthermore, the use of competitors as suppliers working on related and interconnected components created additional problems. Partnerships between competing suppliers resulted in the suppliers undermining the best interest of Boeing and acting with self-interest. These issues bring to light important issues that are of interest to managers. First, it brings to light the importance of clarity in project requirements. Project related uncertainty can considerably influence the outsourcing performance. Second, the Boeing 787 example highlights the importance of managing suppliers, especially when they show self-interest and act in an opportunistic manner. Providing clarity in terms effective governance mechanisms countering supplier opportunism and project uncertainty will be of value to managers.

The above arguments motivate this research in the following ways. First, it examines the effectiveness of various governance mechanisms, already established in the literature, under different risk profiles. Second, it provides guidance to managers in allocating valuable resources in establishing transactional and relational governance mechanisms in managing outsourcing engagements.

1.3 Methodology

This dissertation utilized a configuration approach to examine governance mechanisms that are effective in providing superior outsourcing performance. Venkatraman (1989) suggested two forms of fit are best suited for configuration research - fit as profile deviation and fit as gestalts. Hypotheses are presented based on buyer-supplier relationship literature, transaction cost economics (Williamson, 1979, 1981; Williamson, 1983), agency theory (Eisenhardt, 1989) and relational norms (Heide & John, 1992; MacNeil, 1980). This dissertation intends to test the fit between different governance mechanisms and risk profiles that can maximize outsourcing performance. The data was collected using web survey methodology. Members from Project Management Institute (PMI) and International Association of Outsourcing Professionals (IAOP) were approached to provide feedback through surveys. Literature on buyer-supplier relationships and marketing channel relationships were used to develop theoretically grounded measurement model that was validated through appropriate measurement model analysis. Multivariate regression, cluster analysis and comparison of means were used to test the hypotheses based on fit as profile deviation and fit as gestalts. The results from the analysis provide a richer understanding of effective governance mechanisms in outsourcing engagements.

1.4 Contributions

The contributions of this dissertation are three-fold. First, the dissertation makes substantial contribution to the literature by showing that a deviation from the ideal profile of governance mechanisms can result in lowered outsourcing performance as well as learning outcomes. The negative relationship between outsourcing performance and the deviation from

the ideal profile does not change for strategic and peripheral outsourcing engagements. Similarly, the learning outcomes derived from the peripheral and strategic outsourcing engagements are lower when there is misalignment of governance mechanisms. In addition, this dissertation also provides further clarity on the effective governance mechanisms for different risk profiles based on supplier opportunism and project uncertainty.

Second, this dissertation identifies relationship configurations based on strategic importance and supplier opportunism. Gestalts of governance mechanisms for the relationship configurations are identified and the outsourcing performance for gestalts and non-gestalts is compared. The results indicate the importance of relational governance mechanisms. Whereas literature has claimed the importance of relational governance mechanisms, this dissertation provides further clarity by showing the importance of relational governance mechanisms when the supplier is uncooperative.

Finally, this dissertation examines if relational and transactional governance mechanisms are complements or substitutes. The results of the analysis show the importance of relational governance mechanisms. The results did not indicate the superiority of transactional or hybrid governance mechanisms over relational governance mechanisms. A key take-away from this dissertation is that firms should start developing shared values with their suppliers to gain superior outsourcing performance and learning outcomes.

1.5 Dissertation outline

The next chapter will review the extant literature related to the concepts in this dissertation – i.e., outsourcing, buyer supplier relationships, opportunism, uncertainty, transactional governance mechanisms and relational governance mechanisms. Chapter 3 presents

the research framework examined in this dissertation. In total, eight hypotheses are developed based on the research framework. Chapter 4 provides the details on data collection, measures and measurement validation. Chapter 5 presents the analysis method and the results of analysis. The theoretical and managerial implications of the results are discussed in Chapter 6. Chapter 7 concludes the dissertation by presenting a summary of the research, limitations and opportunities for further research that can extend the findings from this dissertation.

1.6 Summary of introduction

This chapter provided an introduction of the dissertation. The research topic was presented along with theoretical and practical motivations. The contribution of this dissertation to extant literature as well as practitioner community was discussed. Finally, the outline for the dissertation was presented. To understand the contributions of this dissertation, the extant literature must be reviewed. The details are provided in the next chapter.

CHAPTER 2: LITERATURE REVIEW

In this chapter, the literature relevant to this dissertation is presented. First, the extant literature on outsourcing is presented. Following this, the literature on two main risk components, opportunism and project uncertainty, is presented. This is followed by the literature on governance mechanisms.

2.1 Outsourcing

OM researchers have examined buyer-supplier relationships for many years. There is a growing trend among OM researchers to study outsourcing engagements in particular. Firms are choosing to outsource activities not only to gain cost efficiencies but also to gain capabilities (Gottfredson et al., 2005; Holcomb & Hitt, 2007). Literature on outsourcing has dealt mainly with three broad areas of research 1) antecedents and conditions leading to outsourcing specific activities within a firm 2) the determinants of successful outsourcing – including structuring of contracts and 3) utilizing appropriate governance mechanisms to improve outsourcing performance. Literature on all of these areas of research is presented.

Predominantly, researchers used transaction cost economics to study outsourcing as an *ex ante* decision making process. Typically, the reasons for outsourcing specific activities are examined in terms of the cost of governing outsourcing engagements. For example, (Balakrishnan, Mohan, & Seshadri, 2008) found that front end processes are outsourced when the requirement for customer contact and information intensity is low. The nature of activities being outsourced can depend on the outsourcing strategy of the firm (Bardhan, Mithas, & Lin, 2007). Supply risk and competency of the outsourcing firm also influence the activities that are

outsourced (Mantel, Tatikonda, & Liao, 2006). The key determinant of the make-buy decision is the cost of governing an outsourcing engagement. Some invisible costs exist when tasks are being outsourced to the supplier. The invisible cost can depend on the level of interaction required and the distance (geographic, language and cultural) between the outsourcing partners (Stringfellow, Teagarden, & Nie, 2008). Sometimes, fixed costs incurred by a firm can also be a key determinant in deciding whether to outsource an activity (Ellram, Tate, & Billington, 2008). Interestingly, some actions taken by a firm can reduce the transaction costs because there is a streamlined process in place. One such example is the implementation of enterprise resource planning system. Stratman (2008) found that firms have a higher propensity to outsource when they implement ERP systems. There are other considerations, in addition to costs, that influence outsourcing decisions. For example, Gray, Tomlin, and Roth (2009) found that power of a contract manufacturer affects the benefits gained from outsourcing. They suggest that partial outsourcing is an optimal strategy to outsource. Similarly, Hui, Davis-Blake, and Broschak (2008) find that the power of owner firms is an important determinant for controlling and coordinating among outsourcing partners.

Another focus of researchers is to identify sources of better firm performance. Jiang, Belohlav, and Young (2007) examined the impact of types of outsourcing on firm stock market valuation. They found that core business related outsourcing, offshore outsourcing and shorter-term outsourcing have positive influence on performance but non-core business related outsourcing, domestic outsourcing and longer-term outsourcing are not found to enhance value. Bhalla, Sodhi, and Son (2008) explored the link between company's performance and the extent of offshoring. They found that the extent of offshoring does not impact company performance. More recently, Kroes and Ghosh (2010) argue that outsourcing congruence on five competitive

priorities (cost, quality, delivery, flexibility and innovation) is significantly related to supply chain performance.

Governing outsourcing engagements has come to prominence in recent years. Evidence from literature suggests that there are many factors that can improve outsourcing performance. Supplier selection based on past performance has been shown to be an important indicator of future performance (Cui, Loch, Grossmann, & He, 2011; Handley & Benton Jr, 2009). Once the supplier is selected, appropriate incentives have to be put in place to align supplier's goals with the buyer's goals. Outsourcing contracts can be governed using contractual (i.e., transactional or formal) control mechanisms such as service level agreements. Goo, Huang, and Hart (2008) find that service level agreements can influence the benefits (functional, strategic and technological) gained from an outsourcing engagement. In contrast, Aron, Bandyopadhyay, Jayanty, and Pathak (2008) suggest that buying firms can avoid costly inspection by specifying a minimum threshold of quality. Gopal and Koka (2010) found that suppliers are more likely to provide quality outputs when the outsourcing engagement is structured as a fixed price contract rather than time & material contract. Increasingly, there is evidence that social (i.e., relational) control mechanisms are gaining prominence in governing outsourcing engagements. Handley and Benton Jr (2009) found that relationship management practices result in positive outsourcing performance. Some social mechanisms that affect outsourcing project performance include trust (Amaral & Tsay, 2009; Cui et al., 2011), information exchange (Cui et al., 2011; Narayanan, Balasubramanian, & Swaminathan, 2009) and distribution of rewards (Amaral & Tsay, 2009). There is also evidence suggesting that all control mechanisms are equal. Formal mechanisms are better suited for outsourcing engagements focused on incremental innovation and social mechanisms provide better outcomes from radical innovation projects (Li, Liu, Li, & Wu, 2008). There is general

consensus that relational governance serves either as a substitute or complement to contractual buyer-seller governance (Cousins, Handfield, Lawson, & Petersen, 2006; Griffith, Harvey, & Lusch, 2006; Li et al., 2010; Liu et al., 2009; Narasimhan, Nair, Griffith, Arlbjørn, & Bendoly, 2009). Though it is unclear as to the nature of this relationship and the conditions under which transactional and relational governance mechanisms act as substitutes or complements.

Whereas researchers have examined buyer-supplier relationships in general and outsourcing engagements in particular, few studies have considered the presence of uncertainty and opportunistic behavior. This study fills this gap in literature by examining the governance mechanisms that are related to superior outsourcing performance and learning outcomes in the presence of project uncertainty and *ex post* opportunism.

2.2 Opportunism

Transaction cost economics (Coase, 1937; Williamson, 1979, 1981; Williamson, 1983) has been the foundation for many studies in OM research. Opportunism is one of the behavioral assumptions of transaction cost economics (Williamson, 1981). The resultant uncertainty due to opportunism has been dubbed as behavioral uncertainty (Williamson, 1985). Jap and Anderson (2003) describe opportunism as “self-interest seeking with guile”. Williamson (1985, p. 47) describes guile as “lying, stealing, cheating, and calculated efforts to mislead, distort, disguise, obfuscate”. Opportunism can be exhibited *ex ante*, before the start of a relationship, where the supplier can misrepresent their capabilities (Wathne & Heide, 2000). Similarly, opportunism can also exist *ex post* (i.e., after the start of the relationship) where the partner can renege explicitly or implicitly by shirking or failing to keep promises and obligations (Jap & Anderson, 2003).

Opportunism has been originally conceptualized as an explicit violation of contractual agreements (Williamson, 1983). Wathne and Heide (2000) termed this conceptualization as “Strong form” opportunism. They suggest that opportunism can exist when a partner either engages in or refrains from certain actions. Thus, active opportunism is exhibited when a partner engages in activities that were either explicitly or implicitly prohibited (Wathne & Heide, 2000). For example, the supplier can exhibit active opportunism by demanding the buyer to pay more for correcting a problem. In addition, partners can exhibit opportunistic behavior in a passive manner by evading or shirking their responsibilities. For example, the supplier can exhibit evasion by promising to do certain things in the project but does not deliver on those promises. Together, the opportunistic behavior exhibited by the supplier can impact the success of an outsourcing engagement.

This research conceptualizes opportunism as actions exhibited by the supplier once the buyer and supplier are engaged in an outsourcing relationship. From a TCE perspective, opportunism increases the cost of coordination for the buying firm. Thus, supplier’s *ex post* opportunism has an impact on outsourcing performance due to increased cost of coordination. This increased cost of coordination occurs due to the requirement that the buyer has to closely monitor the supplier.

2.3 Project uncertainty

In addition to behavioral uncertainty (Williamson, 1985), the firms also encounter primary uncertainty (Koopmans, 1957) due to “lack of knowledge about states of nature, such as the uncertainty regarding natural events” (Sutcliffe & Zaheer, 1998, p. 3). In this dissertation, primary uncertainty is conceptualized as project uncertainty. These issues are encountered by the

project manager as well as the project team. The issues can be characterized in the form of variation, foreseen circumstances, unforeseen circumstances and chaos (Pich, Loch, & Meyer, 2002). Shenhar (2001) takes a different view where the projects are classified based on the scope and technological uncertainty encountered. Project scope is determined by the number of sub-systems and their interdependencies and technological uncertainty is based on the “newness” of the technology being used to implement the project. In contrast, Nidumolu (1995) identified two main sources of uncertainty when studying software development projects. First, uncertainty arises due to difficulty in “eliciting requirements from the users” (Nidumolu, 1995, p. 195). The source of requirements uncertainty is the lack of clarity or lack of consensus among the stakeholders of a project. Second, technological uncertainty arises when “state-of-the-art” technologies need to be used to carry out the requirements of the project. In addition, the project members should be able to prioritize the tasks and time of completing the tasks (Bendoly & Swink, 2007). Taken together, project uncertainty is conceptualized as the lack of clarity or consensus on the requirements of the project, lack of ability to prioritize the tasks that need to be executed in the project and the inability of the project team members to anticipate problems in advance.

2.4 Governance mechanisms

Increasingly, researchers have argued that firms should use both transactional and relational governance when managing outsourcing engagement (Handley & Benton Jr, 2009; Li et al., 2010; Liu et al., 2009). In line with the arguments from these researchers, the key elements of transactional and relational governance mechanisms that are relevant to managing and outsourcing engagement are discussed below.

2.4.1 Transactional governance

Agency theory has been used to examine exchange relationships between a buyer (principal) and supplier (agent) (Eisenhardt, 1989). The key focus of agency theory is to deal with resolving two main problems – agency problem and problem of risk sharing. Typically, in a principal-agent relationship the agent may not have similar goals in comparison to the principal. The goal of agency theory is to manage the contract most efficiently by either monitoring the behavior of the agent or monitoring the outcomes. The nature of monitoring (i.e. behavior vs. outcomes) is dependent on contingent factors such as bounded rationality, opportunistic behavior and risk aversion (Eisenhardt, 1989). There are strong similarities between agency theory and transaction cost economics. Both theories examine the most efficient form of contract under contingent conditions. The common assumptions between the two theories are self-interest (i.e., opportunistic behavior) and bounded rationality (Eisenhardt, 1989). Behavior based contracting under agency theory is similar to hierarchies in transaction cost economics where the principal is able to monitor the behavior of the agent. Market based contracting (in TCE) is similar to outcome based contracting in agency theory. The key difference between TCE and agency theory is that transaction cost economics does not take into account the risk propensity of the actors (i.e., principal and agent). Using the TCE and Agency theory arguments, researchers have identified monitoring, contractual flexibility and transaction specific investments as governance mechanisms to manage buyer-supplier relationships (Anderson & Weitz, 1992; N. Argyres & Mayer, 2007; Stump & Heide, 1996). These governance mechanisms are discussed in detail in the following subsections.

2.4.1.1 Monitoring

Monitoring has been recognized as an essential aspect of buyer-supplier relationships (Ellram et al., 2008; Metters, 2008; Modi & Mabert, 2007). Supplier's opportunistic behavior increases transaction costs in terms of monitoring the outcomes as well as safeguarding costs associated (Ellram et al., 2008; Modi & Mabert, 2007). Monitoring has been shown to reduce *ex post* opportunistic behavior even when the buyer and supplier are engaged in a long-term relationship (Morgan, Kaleka, & Gooner, 2007). Monitoring mechanisms are considered as transactional mechanisms and appropriate levels of supplier monitoring has been recognized as beneficial (D. E. Boyd, Spekman, Kamauff, & Werhane, 2007). Specifically, monitoring mechanisms are considered to reduce supplier's opportunistic behavior in two ways (Wathne & Heide, 2000). First, it applies social pressure on the supplier to comply with the requirements of the outsourcing engagement. Second, it helps the buyer to take necessary actions to curb supplier's opportunistic behavior by monitoring the quality of the deliverables (Stump & Heide, 1996).

Monitoring mechanisms have been advocated by researchers and practiced by managers for a long time. For example, Williamson (1993) recognized that *ex ante* effort in supplier selection and incentive design are largely incomplete and require firms to monitor their suppliers. Similarly, Heide (1994) suggests that monitoring is essential irrespective of whether the buyer resorts to market or hierarchical forms of governance. Furthermore, monitoring is essential because initial screening and qualification of supplier alone will not reduce opportunism, in particular *ex post* opportunism (Stump & Heide, 1996). Monitoring mechanisms have been established as part of service level agreements where the expectations of both parties involved is explicitly stated. In addition, service level agreements also specify the "metrics by which the

effectiveness of various contracted services and processes will be measured and controlled”,(Goo et al., 2008, p. 471). Typically, monitoring mechanisms are used to measure the outputs provided by the supplier by tracking the milestones in an outsourcing engagement (Lewis, Welsh, Gordon, & Green, 2002). In addition, buying firms can establish standards for quality and delivery and measure the compliance of the supplier with such established standards (Stump & Heide, 1996).

2.4.1.2 Contractual flexibility

Every contract is inherently incomplete (Grossman & Hart, 1981). Uncertainty in an outsourcing engagement manifests because of bounded rationality (Rindfleisch & Heide, 1997). Bounded rationality implies that the buyer is unable to specify all the contingencies that may occur in an outsourcing engagement *a priori*. Typically, transaction cost economics perspective suggests that hierarchy is the most efficient form of organizing when a firm is unable to anticipate contingencies. The implicit assumption in TCE is that the buyer is able to instantaneously learn about the contingencies associated with the outsourcing engagement (Mayer & Argyres, 2004). Furthermore, the buyer has a choice of either pursuing an alternate supplier or pursuing vertical integration based on the transaction costs of the contingencies. Mayer and Argyres (2004) refute this assumption and argue that both parties go through a learning process. Through this learning process, the parties in the relationship develop the ability to plan for contingencies (N. Argyres & Mayer, 2007). Thus, contingency planning is incorporated into the contract to provide flexibility to modify the requirements of the project as the parties learn the details of execution. Both parties are able to adjust to the changing nature of the outsourcing engagement and plan accordingly.

Contingency planning can be classified into two main types – generic contingency planning and specific contingency planning (N. S. Argyres, Bercovitz, & Mayer, 2007). In a

generic contingency plan, the process of future changes is agreed upon by the outsourcing partners. For example, the partners may agree on the process of changing the statement of work (SOW) through the use of change requests (N. S. Argyres et al., 2007). On the other hand, specific contingency plans can include details on contingencies that may occur during the life-cycle of the project and procedures that need to be followed (N. S. Argyres et al., 2007). Typically, specific contingency plans are associated with situations where the parties are aware of the possible contingencies that can happen in the due course of the engagement but lack information on the occurrence of a specific contingency. In an outsourcing engagement, the firms may pursue an option of renegotiating the terms of the contract to accommodate the changing nature of the engagement. Through this process of contingency planning, the details of outsourcing engagement can be clarified and the “hold-up problem” is avoided.

2.4.1.3 Transaction-specific investments

Transaction cost economics researchers have shown the importance of transaction-specific investments (TS investments) in acting as safeguards from opportunistic behavior in a relationship (Anderson & Weitz, 1992; Jap & Anderson, 2003; Williamson, 1993). Transaction-specific investments are relationship specific and hold very little value outside of the relationship context. These investments can be both tangible and intangible (Jap & Anderson, 2003). Tangible investments include investments in manufacturing facilities, logistics systems, specific tools, machines or systems. On the contrary, intangible investments include transfer of tacit knowledge, specific technology, capability or processes and procedures that requires both parties to work closely to extract rents from them. Nyaga, Whipple, and Lynch (2010) argue that transaction-specific investments enable the firms to appropriate higher rents because they can develop inter-firm routines and processes that are boundary spanning in nature. TS investments

also act as safeguards by creating a mutual hostage situation where both parties have to work out the differences and make the relationship work (Jap & Anderson, 2003; Liu et al., 2009). Thus, TS investments are used as signals to indicate commitment to the relationship (Nyaga et al., 2010). In an outsourcing engagement, the initial effort and time spent by both parties in understanding the nature of the activities that are outsourced can result in substantial reduction in effort and cost during later stages of the outsourcing engagement. The outsourcing partners can also establish processes and procedures that are specific to the outsourcing engagement that enable smooth functioning by establishing appropriate escalation mechanisms in case of ambiguities. Furthermore, it also establishes procedures for knowledge transfer that can result in higher relational rents between the buyer and supplier.

2.4.2 Relational governance mechanisms

In addition to agency theory and TCE, researchers have utilized social exchange theory (Emerson, 1962; Homans, 1958) to examine the relationships between buyers and suppliers. Relational norms (Heide & John, 1992; MacNeil, 1980) have been recognized in the literature as an important aspect of social exchange. Relational norms instill shared values and norms that can be used as a substitute for clan mechanism (Ouchi, 1979) resulting in behaviors where the buyer and supplier are not acting in an opportunistic manner. Two relational norms are considered – information exchange and joint problem solving through shared understanding. Information exchange is used by the parties to reduce information asymmetry and increase the quality of the relationship. Joint problem solving allows the buyer and supplier to mutually agree on new information that may influence the outcomes of an outsourcing engagement.

2.4.2.1 Information exchange

Researchers have examined the role of information exchange in reducing inefficiencies between the buyer and supplier firms. Intra-organizational communication has been found to improve performance of a firm (Monczka, Petersen, Handfield, & Ragatz, 1998; Narasimhan & Kim, 2002). Similarly, inter-organizational communication has been found to improve both strategic and operational performance of supply chain partners (Choi & Hartley, 1996; Narasimhan & Kim, 2002; Prahinski & Benton, 2004; Shin, Collier, & Wilson, 2000; D. Y. Wu & Katok, 2006). Information exchange allows the buyer and supplier to synchronize activities and harness knowledge that exists within the team toward effective problem solving (Fugate, Stank, & Mentzer, 2009). Information exchange between buyer and supplier fosters partnership and builds trust, resulting in lowered opportunistic behavior from both parties (Goffin, Lemke, & Szwajkowski, 2006; Paulraj et al., 2008). In addition, information exchange improves information processing capacity and hence reduces task uncertainty (Stock & Tatikonda, 2008). By investing in inter-organizational information exchange the buyer can harness strategic advantages from the relationship (Paulraj et al., 2008). In this study, we hypothesize that information exchange between buyer and supplier will foster better problem-solving and result in increased performance through effective risk mitigation.

2.4.2.2 Shared Understanding

Diversity of opinion and experience helps outsourcing engagements to explore and innovate. Shared language enables firms to effectively communicate and create knowledge (Cohen & Levinthal, 1990; Nahapiet & Ghoshal, 1998; Zenger & Lawrence, 1989). Shared language enables outsourcing partners to interpret, understand and respond to information in a similar manner (Zenger & Lawrence, 1989). Through shared understanding, “subtle and

technical experience” (Ingram & Simons, 2002) are exchanged between the buyer and supplier. It takes considerable effort, time and repeated interactions to develop a shared language and experience between buyers and suppliers (Carlile & Rebentisch, 2003; McFadyen & Cannella, 2004). In an experiment simulating a merger activity, (Weber & Camerer, 2003) find that subjects develop a shared language through repeated interactions and it takes considerable number of iterations to regain similar understanding (i.e., shared language) when partners are changed.

Shared language enables efficient communication that results in identification and organization of pertinent information for the outsourcing relationship (Kogut & Zander, 1992; Zenger & Lawrence, 1989). Suppliers that do not share a common language with the buyer are likely to misinterpret the information from the buying firm (Zenger & Lawrence, 1989). Shared understanding between the buyer and supplier results in higher efficiency and effectiveness of joint-problem solving. Shared understanding encompasses the participation (Nyaga et al., 2010) aspect of relational norm and adds to it the efficiency and effectiveness of problem-solving. In this study, we utilize these findings to argue that shared understanding helps in resolving uncertainty in an outsourcing engagement resulting in improved outsourcing performance.

2.5 Outsourcing engagement performance

Traditionally, outsourcing engagements have been measured on both efficiency and effectiveness criteria (Raz & Michael, 2001). The immediate concern for the buying firms in an outsourcing engagement is on-time and under-budget completion of tasks within the engagement (Clark, 1989; Hartley, Zirger, & Kamath, 1997; Swink, Talluri, & Pandejpong, 2006). In addition, learning outcomes are considered critical by the buying firms (Clark, 1989; Lewis et

al., 2002; Raz & Michael, 2001). Learning outcomes include gaining technical knowledge (Tatikonda & Rosenthal, 2000a; Lewis et al 2002), commercial knowledge, proprietary information and technology that is useful to other projects within the organization (Lewis et al., 2002). This dissertation examines effectiveness of governance mechanisms in gaining superior outsourcing performance as well as learning outcomes.

2.6 Summary of literature review

In this chapter, the pertinent literature for the dissertation was reviewed. First, the extant literature on outsourcing engagements was presented. Following this, the literature on risks and governance mechanisms were discussed. Finally, the performance of outsourcing engagements and learning outcomes were discussed. These concepts will be linked in the research framework to provide a configuration research perspective that provides insights into effective management of outsourcing relationships. This research framework and the relevant theoretical underpinnings are discussed in the next chapter.

CHAPTER 3: RESEARCH FRAMEWORK

This chapter presents the research framework in this dissertation. First, the research perspective is presented to lay the groundwork for the research framework. Following this, the theoretical underpinnings pertinent to the two configuration approaches – fit as profile deviation and fit as gestalts are presented. In total, eight hypotheses corresponding to the research framework are presented.

3.1 Research perspective

Researchers have studied the *ex ante* decision making of activities that need to be outsourced based on several criteria. For example, the level of customer contact required was used as a determinant in outsourcing activities within a firm (Balakrishnan et al., 2008). Similarly, other factors such as supply risk (Mantel et al., 2006), level of interaction and distance (Stringfellow et al., 2008), fixed costs (Ellram et al., 2008) and ERP system implementation (Stratman, 2008) were shown to influence a firm's outsourcing strategy. More recently, the interest in studying effective management of outsourcing engagement is increasing as witnessed by recent studies (Li et al., 2010; Liu et al., 2009). Researchers have determined that firms use different approaches to ensure success of an outsourcing engagement. For example, (Cui et al., 2011) found that supplier selection is critical to the success of an outsourcing engagement. Similarly, other factors such as service level agreements (Goo et al., 2008), nature of the contract (Gopal & Koka, 2010), relationship management practices (Handley & Benton Jr, 2009), communication (Narayanan et al., 2009) and distribution of rewards (Amaral & Tsay, 2009) were found to contribute toward successfully managing an outsourcing engagement. Even

though these governance mechanisms were examined, very few studies have incorporated the influence of risk in the success of an outsourcing engagement.

Albeit risk has been considered as an important construct to be considered, very few studies have explicitly used a risk management perspective when examining outsourcing engagements. This dissertation explicitly addresses this gap in literature and examines the salience of risk and its effective mitigation strategies in outsourcing engagement. Risk management literature identifies many forms of risk. Two primary sources of risks that are particularly salient to outsourcing engagements are considered. Koopmans (1957) argued that a buyer-supplier relationship can be plagued by primary uncertainty – risk due to the “state of nature” (Sutcliffe & Zaheer, 1998: pp3) and secondary uncertainty – risk due to the behavior of the supplier. Primary uncertainty in an outsourcing engagement manifests itself in the form of project uncertainty. The lack of clarity in terms of the priorities of tasks can result in wasted effort, inefficient execution of tasks and inability to anticipate problems. These factors contribute toward deterioration in outsourcing performance. In contrast, secondary uncertainty manifests itself in the form of supplier *ex post* opportunistic behavior. Studies have shown that an uncooperative supplier can contribute toward deterioration of performance in a buyer-supplier relationship (Jap & Anderson, 2003). Typically, researchers have considered either one or another form of risk. In contrast, this dissertation simultaneously examines effective governance mechanisms in the presence of both primary uncertainty (i.e., project uncertainty) and secondary uncertainty (i.e., supplier *ex post* opportunistic behavior).

Researchers have identified two main sets of governance mechanisms that firms use to manage outsourcing engagements. First, transaction cost economics (Coase, 1937; Williamson, 1979, 1981; Williamson, 1985) and agency theory (Eisenhardt, 1989) perspectives are utilized

and the effectiveness of transactional governance mechanisms in governing buyer-supplier relationships has been examined. Studies have shown the importance of monitoring, contract flexibility and transaction-specific investments in safeguarding buyer-supplier investments (N. Argyres & Mayer, 2007; Jap & Anderson, 2003; Stump & Heide, 1996). Second, increasingly, relational view has been shown to be important in managing buyer-supplier relationships by researchers (Handley & Benton Jr, 2009; Nyaga et al., 2010). Specifically, relational norms (Heide & John, 1992; MacNeil, 1980) have been shown to be effective in managing buyer-supplier relationships. Whereas researchers have examined these governance mechanisms, very few have examined the use of both transactional and relational mechanisms simultaneously (Li et al., 2010; Liu et al., 2009). In contrast with prior literature, this dissertation examines both transactional and relational governance mechanisms simultaneously.

In addition to the above stated reasons, this dissertation takes a different methodological approach than prior studies. Venkatraman (1989) identified six forms of fit – moderation, mediation, covariation, matching, profile deviation and gestalts. Appropriate use of each form of fit is dependent on the level of precision (i.e., functional form of the fit) and the relationship of fit to an external criterion (Venkatraman, 1989). In addition, Venkatraman and Prescott (1990) categorize coalignment research into two main perspectives, reductionistic and holistic. Other researchers have suggested analogous approaches such as interaction versus systems approach (Drazin & Ven, 1985). Interaction approach is similar to the reductionistic approach and systems approach is analogous to holistic approach. Reductionistic perspective suggests that the relationship between two constructs can be examined in terms of “pairwise coalignment among the individual dimensions that represent the two constructs” (Venkatraman & Prescott, 1990). The precise relationship between constructs can be specified and the relationship can be tested

for superior performance. By replicating the process and extending the constructs being examined, cumulative knowledge can be developed (Venkatraman & Prescott, 1990). In contrast, holistic perspective retains the systemic nature of the inter-linkages between many constructs and tests for the performance effects based on the simultaneous and holistic pattern of inter-linkages of the constructs. Venkatraman and Prescott (1990) contend that the use of reductionistic approach such as “co-alignment between individual dimensions” (pp. 2) provides a narrow perspective of the relationships between the variables of interest. The relationships are examined under *ceteris paribus* conditions and fit is conceptualized as a set of “bivariate co-alignments” (Venkatraman & Prescott, 1990, p. 2). In contrast, they suggest that the use of configurational approach is more “holistic” in nature and it lends itself to a richer understanding of the inter-linkages between variables. Numerous researchers have similarly called for configurational approach in examining research questions where the relationship between many variables can be simultaneously tested (Drazin & Ven, 1985; Hambrick, 1984; D. Miller, 1981).

This reliance on reductionistic perspective can be observed in buyer-supplier relationship literature as well. As mentioned earlier, researchers examined the influence of individual governance mechanisms on relationship performance. Few studies have simultaneously examined sets of governance mechanisms that can be classified as transactional or relational in nature. The studies that examined transactional and relational governance issues resorted to creating separate constructs rather than incorporating the governance mechanisms identified in the literature. For example, Liu et al. (2009) created two constructs – contract and relational norms – that correspond to transactional and relational governance mechanisms. Similarly, Li et al. (2010) created two constructs – formal control mechanisms and social control mechanisms – to examine domestic and international buyer-supplier relationships in China. This dissertation

uses a configurational approach to address this methodological problem. Venkatraman (1989) suggests that fit as profile deviation and fit as gestalts are appropriate to use when utilizing a configurational approach. Consequently, these forms of fit (profile deviation and gestalts) are utilized to address the research questions in this dissertation.

Fit as profile deviation is the “degree of adherence to an externally specified profile” (Venkatraman, 1989, p. 433) that allows for a multi-dimensional assessment of fit. Furthermore, the degree of adherence to an ideal profile by a business unit for a given environment can be related to performance (Venkatraman, 1989). Similarly, gestalts are defined as “degree of internal coherence among a set of theoretical attributes” (p.432). The goal of “fit as gestalts” is to identify commonly occurring attributes rather than be precise about the functional form that the attributes take. These methodological ideas are used in the examination of governance mechanisms in this dissertation. The commonly occurring gestalts of governance mechanisms are identified and their implication on outsourcing performance and learning outcomes are examined.

Taken together, the uniqueness of this dissertation results from examination of governance mechanisms by taking into account the risk from primary sources (project uncertainty) and secondary sources (supplier *ex post* opportunism). In addition, this study utilizes configuration approach (both fits as profile deviation and fit as gestalts) to examine if transactional and relational governance mechanisms can act as complements to each other. In doing so, this dissertation sets itself apart from prior research on buyer-supplier relationships. The following sections develop the research framework and develop hypotheses based on risk management perspective, buyer-supplier relationships and governance mechanisms.

3.2 Fit as profile deviation

Configurational approach uses fit as profile deviation as one of the methods of examining relationships. Using this approach, the performance implications of different configurations of variables can be examined simultaneously. This approach has been utilized in strategic management literature. For example, Venkatraman and Prescott (1990) identify eight different environments and correspondingly identify important elements of strategy that correspond to superior performance for each of the environment variables. Similarly, Lukas, Tan, and Hult (2001) found that firms in “transitional economies” like China use either a prospective or protective strategies based on the level of environmental uncertainty they encounter. Interestingly, fit as profile deviation has not been widely utilized in examining supply chain management phenomena with the exception of a few studies. For example, da Silveira (2005) utilized this methodology to analyze the order-winners framework proposed by (Hill, 1993). The study examined the ideal profiles of product and markets and manufacturing decisions and related them to alternative process choices. The results indicated that a “misfit” in process choices resulted in a deterioration of domestic market share.

Researchers have typically used a “reductionistic” approach and examined the impact of a limited set of governance mechanism variables and their effectiveness in managing outsourcing engagements. For example, Goo et al. (2008) relate the service level agreements to the benefits gained from the outsourcing engagement. In addition, they use the level of commitment in the relationship as a moderator and find support that service level agreements provide benefits in the presence of commitment. Whereas the study provides valuable insights on the impacts of service level agreements, it does not take into account the relational mechanisms that a buyer may use in

managing the relationship. Studies have also taken into account the relational norms between the buyer and supplier and relate it to performance. For example, Nyaga et al. (2010) found that information sharing, participation and dedicated investments improve the level of trust and commitment, thus improving the level of satisfaction in the relationship and performance. Similarly, Prahinski and Benton (2004) and Paulraj et al. (2008) argue for the importance of information exchange in improving performance of buyer-supplier relationships. Again, these studies take into account the relational governance mechanisms but ignore transactional mechanisms. More recently, some researchers have called for examining the two forms of governance mechanisms simultaneously. The results of these studies are not conclusive. For example, Li et al. (2010) studied domestic and international buyer-supplier relationships in China and found that formal controls and social controls are substitutes in domestic relationships but they are “neither pure substitutes nor complements” (pp. 340) in international relationships.

In contrast to the aforementioned studies, this dissertation uses fit as profile deviation to examine the effectiveness of transactional and relational governance mechanisms in managing outsourcing engagements. Fit as profile deviation allows for the creation of an ideal profile in an n-dimensional space (Venkatraman, 1989; Venkatraman & Prescott, 1990). Venkatraman and Prescott (1990) studied environment-strategy relationship and found ideal profile strategies that correspond to different environments. Similar to their approach, the fit between governance mechanisms and risk profiles is examined. The risk profiles are derived based on the level of relational risk (i.e., supplier opportunism) and project risk (i.e., project uncertainty) in an outsourcing engagement. Prior literature has shown that both supplier *ex post* opportunism and project uncertainty will negatively impact the performance of outsourcing engagement (Jap & Anderson, 2003; Nidumolu, 1995). Using this framework, we can examine the choices made by

managers based on the nature of risk encountered in outsourcing engagements. This framework allows us to formulate an ideal profile of governance mechanisms used by high performers.

An approach similar to Venkatraman and Prescott (1990) is followed. The environment of the relationship is characterized by two main sources of risk – relational risk (supplier *ex post* opportunism) and project risk (project uncertainty). The outsourcing engagements are classified into four groups based on the level of supplier *ex post* opportunism and project uncertainty. The groups are labeled as *unstable* (low supplier opportunism – high project uncertainty), *uncooperative* (high supplier opportunism – low project uncertainty), *routine* (low supplier opportunism – low project uncertainty) and *high-risk* (high supplier opportunism – high project uncertainty). The specific nature of risk encountered in each group is discussed.

First, let us consider the risk configuration characterized as *unstable*. Outsourcing engagements belonging to this risk configuration primarily encounter risk due to uncertainty in project specifications. The requirements of the outsourcing engagement lack clarity. The team members do not have complete understanding of the tasks that need to be completed because the details of the tasks are not specified in a timely manner. In addition, the sequence of activities that need to be completed may not be clarified. The difficulty in navigating the interdependencies of tasks can result in execution problems. Moreover, the execution problems cannot be anticipated by the project team members. Due to the interdependencies, outsourcing engagements may have to undertake rework of some tasks resulting in additional costs (Bendoly & Swink, 2007). Such delays can result in the outsourcing engagements to be delayed resulting in overall deterioration of outsourcing performance.

Now let us consider an *uncooperative* risk configuration. Even though there may be general clarity in requirements, sequence of tasks to be performed and the desired quality of the deliverables, the outsourcing engagement may not be able to achieve superior performance due to relational risk. Typically, the buyer is unable to switch the supplier once the outsourcing engagement is underway resulting in increased power in favor of the supplier. The supplier may take advantage of the situation through different actions. For example, the supplier may shirk the responsibilities creating possible delays in the outsourcing engagement. The supplier can also extract higher rents from the outsourcing engagement in many ways. For example, the supplier may use substandard material or assign lower skilled employees to the project. Employees belonging to the supplier may not be vested in the project and may work on activities that are more valuable to them than the client (Clemmons & Hitt, 1997). The supplier can opportunistically renegotiate by charging additional fees to the buyer for tasks that need to be performed, thus resulting in additional costs to the buyer. These actions, either taken separately or collectively, can result in substantial loss of productivity and consequently diminished outsourcing performance. For these reasons, it can be argued that the outsourcing performance will be affected due to uncooperative suppliers.

Now consider the risk configuration where the outsourcing engagement is affected by high levels of both project uncertainty and an uncooperative supplier. The outsourcing engagement is even more vulnerable in this risk configuration. This is characterized as *high-risk* configuration. There may be compounding effect because the managers have to not only contend with lack of clarity in the outsourcing engagement but also an uncooperative supplier. There is evidence in literature that the potential for supplier opportunism may increase in the presence of project uncertainty (Stump & Heide, 1996). Hence, the engagements in this risk configuration

are considered most vulnerable and may experience the highest deterioration in outsourcing performance.

Finally, the “*routine*” risk configuration is characterized by low project risk as well as relational risk. The outsourcing engagements with this risk configuration are relatively straightforward in their project requirements. The buyer is clear on the requirements of the project. The tasks that need to be undertaken are specified a priori with considerable level of clarity. The interdependencies between tasks are not complex and are easily specified. The team members have clarity in executing the tasks and are able to anticipate any execution issues and take actions before the risk materializes. In addition, the supplier is cooperative and works in conjunction with the buyer in proactively executing the tasks. The supplier provides adequate updates to the buyer and is responsive to minor changes in the project. It can be argued that the *routine* configuration provides the most stable risk profile for outsourcing engagements. The four configurations of risk are represented in Figure 3 below.

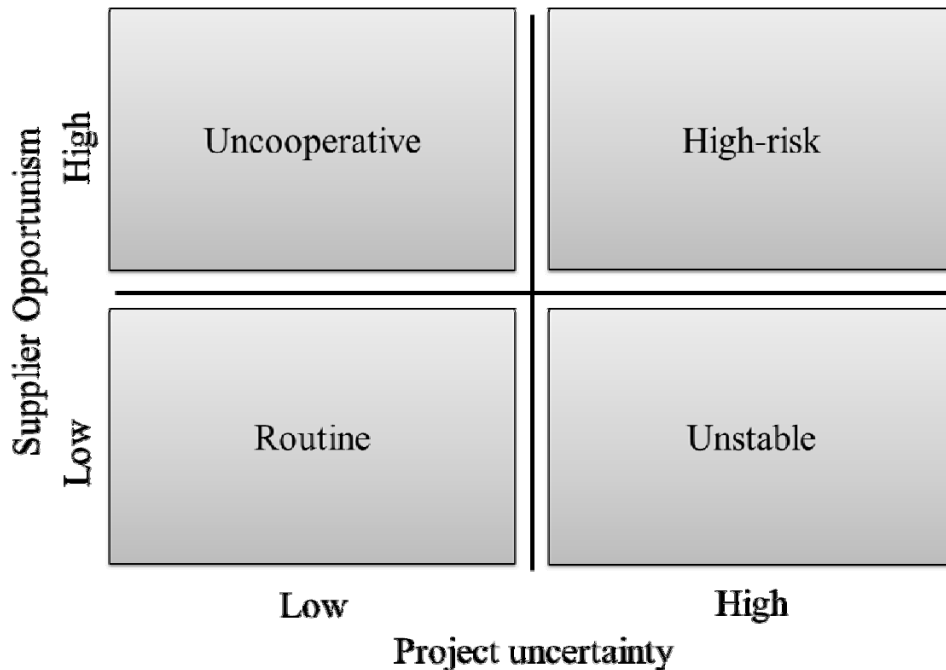


Figure 1: Configurations of risk in outsourcing engagements

Fit as profile deviation suggests that there is an “ideal profile” for each environment and deviation from this ideal profile may result in deterioration in outsourcing performance. An interesting implication of ideal profile is that the deviation can result from both underuse as well as overuse. This implies that there is possibly a curvilinear relationship between the antecedents and the dependent variable. Typically, studies have hypothesized a strictly linear relationship between constructs. A positive relationship between the variables implies that an increase (decrease) in the antecedent will result in an increase (decrease) in the dependent variable. In contrast, the use of ideal profile in analyzing the fit between governance mechanisms and risk in an outsourcing engagement suggests that the relationship is not strictly linear. Interestingly, a study by Hartley et al. (1997) found that the relationship between governance and performance is not strictly linear and that a firm can experience deterioration in performance through overuse of governance.

Two classes of governance mechanisms are considered when creating an ideal profile. First, transactional governance mechanisms such as monitoring, contract flexibility and transaction-specific investments are considered. Second, information exchange and shared understanding, aspects of relational norms (Heide & John, 1992; MacNeil, 1980) are considered. The theoretical arguments for choosing these specific set of transactional and relational governance mechanisms have been provided in the literature review section.

There is an implicit performance implication associated with fit as profile deviation. The method suggests that firms deviating from the “ideal profile” will experience deterioration in performance. In this research, it is hypothesized that firms deviating from the ideal profile will exhibit multiple performance issues. First, the classic project management metrics of the outsourcing engagement are considered. An outsourcing engagement will be unable to meet the goals of on-time and within-budget accomplishments of deliverables. Furthermore, the deliverables of the project may not be of the highest quality. Second, the buyer may not be able to achieve the desired learning outcomes when there is a misfit between the risks faced in the outsourcing engagement and the governance mechanisms used to manage the outsourcing engagement. It can be argued that when the risks associated with the outsourcing engagements are not adequately managed, the ability to learn new knowledge and assimilate it into the knowledge base of the firm is reduced considerably. Based on this reasoning, two hypotheses are proposed:

H1: Fit (as profile deviation) between risks to outsourcing engagement and governance mechanisms is positively associated with outsourcing performance

H2: Fit (as profile deviation) between risks to outsourcing engagement and governance mechanisms is positively associated with learning outcomes

Researchers have recognized that firms are increasingly outsourcing activities that are considered strategic in nature (Gilley & Rasheed, 2000; Gottfredson et al., 2005; Holcomb & Hitt, 2007). Taking a resource-based view perspective (Barney, 1991), it can be argued that activities that are strategic in nature are considered valuable to a firm. Furthermore, it is important to ensure that these activities are not easily imitated by competitors and partners. In addition, the firm should ensure that other firms do not develop products that can act as substitutes. That is, as a result of the strategic activity a firm can gain competencies that provide a sustained competitive advantage to the firm. Similarly, strategic activities can result in development or augmentation of core competence of a firm (Prahalad & Hamel, 1990). Core competence is considered as the collective learning of an organization and its ability “to coordinate diverse production skills and integrate multiple streams of technologies” (Prahalad & Hamel, 1990, p. 4). A firm can maintain core competence through its ability to organize work and its ability to communicate the necessary information to other functions within the firm (Prahalad & Hamel, 1990). Core competence of a firm enables it to apply its capabilities in creating new products and services that can result in higher rents. A subtle distinction between the two perspectives is that core competence can be considered as the realization by a firm of the capabilities it already possesses and is providing competitive advantage but RBV is the realization of capabilities that are needed by the firm to succeed. That is, core competence argues that there are certain activities that are fundamental to a firm and the firm should never let go of it. In contrast, RBV suggests that firms should identify capabilities that can provides sustained competitive advantage and develop them either organically within the firm or by

acquiring them from other suppliers. For example, Prahalad and Hamel (1990) argue that a firm such as Honda has developed technology for engines that allows it to enter into diverse markets such as motorcycles to airplane engines. Similarly, over the years, Canon has perfected its optics technology that allowed it to produce both personal photo copiers as well as introduce single-lens reflector (SLR) cameras. With the advent of digital storage technology, the firm was able to easily transition into digital SLR market.

Both core competence and RBV perspectives recognize that there are capabilities that are important for a firm and they should be safeguarded. Otherwise, it can result in loss of uniqueness of the capabilities, resulting in increased competition and lowered rents from products and services that can threaten the long-term success of the firm. This research argues for the importance of strategic activities based on the similarity between the two perspectives. When firms pursue strategic outsourcing engagements, they increase their vulnerability due to over-exposure of capabilities to their partners and competitors (Gilley & Rasheed, 2000). This vulnerability can manifest in many ways. For instance, strategic sourcing can impede the ability of a firm to compete in the market place. When Boeing decided to utilize strategic sourcing for their 787 Dreamliner, the company suffered significant delays in the completion of the project. The key issue cited was that the project was complex and was beyond the capability of Boeing to coordinate numerous suppliers in achieving the interdependent tasks. Failure to complete the project on time has significantly reduced Boeing's ability to compete, resulting in significant cutbacks in orders by its customers and at times cancellation of the orders (BusinessWeek, 2006).

Strategic nature of an activity can also pose a threat to the intellectual property of a firm and can result in knowledge leakage (McEvily & Chakravarthy, 2002; Narasimhan & Talluri,

2009). When interacting with the suppliers, firms should take extra caution in ensuring that the knowledge possessed by the firm does not leak to its partners. For example, a recent court-ruling in Germany found that Samsung, a supplier of video display for Apple, was in violation for encroaching into Apple's market for iPad (New York Times, 2011). Samsung released the Galaxy Tab that directly competes with Apple's iPad. This is an example of a threat to long-term success of a firm due to a supplier or customer encroaching on a firm's market (Porter, 1979). Engaging in outsourcing activities that are strategic in nature can result in transfer of knowledge to a firm's suppliers and customers (McEvily & Chakravarty, 2002). Firms need to ensure that the leakage of sensitive knowledge is prevented by instituting appropriate governance mechanisms that can act as deterrent for its suppliers.

When pursuing new innovation, firms have a choice of either developing the technology in-house or acquiring it from external sources such as a supplier. Gottfredson et al. (2005) argue that firms should pursue outsourcing to gain capabilities. They suggest that firms should evaluate activities for outsourcing based on the criticality of the activity, the capability of the firm and the level of control necessary to manage the outsourcing process. An example of sourcing for capability is fast prototyping (Shenhar & Dvir, 2007). Firms can collaborate with their suppliers to acquire capability that can result in fast turnaround of prototype products in the market. Typically, a firm may have to make changes to the product when introducing a "break-through product" (Shenhar & Dvir, 2007) to the market. Break-through products are considered new because they introduce a new concept or idea that was hitherto not available to the customers (Shenhar & Dvir, 2007). Firms can be vulnerable to opportunism from the suppliers when pursuing innovative projects and need to ensure that the suppliers do not take advantage of the vulnerable position and extract additional rents for continuation of the relationship.

Typically, strategic activities are closely related to the revenue stream of a firm. Loss of knowledge and the ability to compete can result in both short-term and long-term problems for a firm. In the short-term, the firm has a potential to lose revenue because of competing products or services are introduced by competitors. As stated above, Samsung's Galaxy tablet has a potential for reducing the revenue that can be garnered by Apple by selling iPad. In the long-term, the firm has a potential to lose the uniqueness of its capabilities. The capabilities may no longer be inimitable and rare resulting in loss of competitive advantage. Hence it can be argued that it is important for the firm to utilize appropriate governance mechanisms to safeguard against potential opportunistic behavior from the suppliers. Furthermore, the governance mechanisms should be deployed in order to ensure that the project uncertainty in the outsourcing engagement is reduced. That is, the fit between governance mechanisms and risks in the outsourcing engagements are even more critical when a firm is engaged in strategic outsourcing engagements. Ensuring high levels of outsourcing performance is critical because firms are able to introduce products and services on-time to the market. Furthermore, it can be argued that learning outcomes from strategic outsourcing engagements can be incorporated into the firm's core competence resulting in sustained competitive advantage. Therefore the following hypotheses are proposed:

H3: Strategic importance of the engagement positively moderates the impact of fit between risks to outsourcing engagement and governance mechanisms on outsourcing performance

H4: Strategic importance of the engagement positively moderates the impact of fit between risks to outsourcing engagement and governance mechanisms on learning outcomes

The research framework corresponding to the above hypotheses are depicted in figure 2 below.

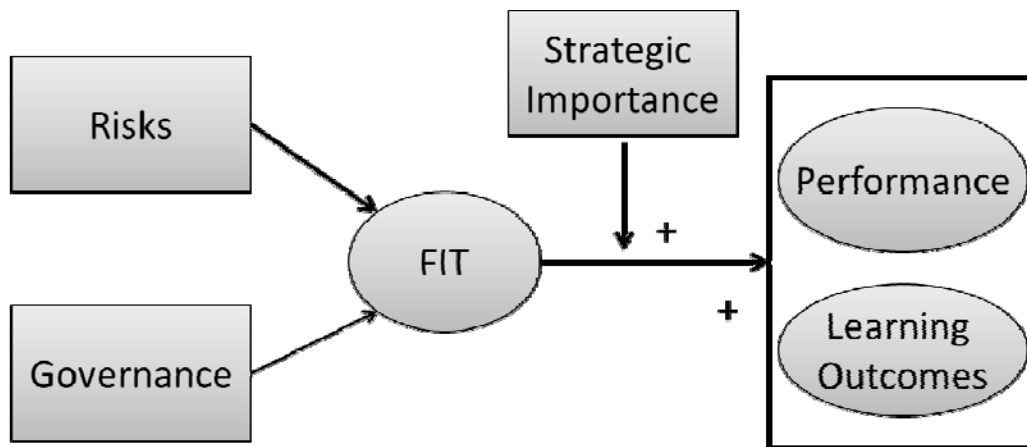


Figure 2 – Research framework – Fit as profile deviation

3.3 Fit as gestalts

Whereas fit as profile deviation provides an intuitive method of examining a choice model, there is a key criticism that has been laid against the method. The core premise of the approach is dependent on the definition of an ideal profile. The problem with an ideal profile is that few firms, if any, will be able to conform to the ideal profile (Lee, Miranda, & Kim, 2004). When applied to fit as profile deviation discussed in the previous section, this issue poses a limitation wherein the firms may not be able to deploy the necessary governance mechanisms. Hence, an alternate method of examining governance mechanisms through configurational research is explored.

Fit as gestalts suggests that there are internally congruent sets of variables that may occur together (Venkatraman, 1989). This idea is utilized to examine the set of governance mechanisms that may “naturally occur” based on the nature of outsourcing engagement. Lee et

al. (2004) argue that the “mutually constraining nature” (pp. 115) of the choices may result in ineffective and inefficient patterns of choices. Furthermore, they provide a density-dependence argument that suggests that more firms will choose “congruent patterns” over “incongruent patterns”, resulting in gestalts because incongruent patterns are inefficient and ineffective. In this dissertation, gestalts are developed based on the argument that for certain relationship configurations there are “congruent patterns” of governance choices that the firms may use to manage their outsourcing engagements. The relationship configurations, governance configurations and the gestalts are discussed in the following sections.

3.3.1 Outsourcing relationship configurations

Two important considerations have been examined in buyer-supplier relationship literature - strategic importance and supplier *ex post* opportunistic behavior (Gilley & Rasheed, 2000; Jap & Anderson, 2003). In this dissertation, they are used to develop configurations of buyer-supplier relationships in outsourcing engagements. First, consider the strategic importance of an outsourcing engagement. Gilley and Rasheed (2000) characterized two types of outsourcing based on their impact on the firm as either core or peripheral in nature. Peripheral outsourcing is when a firm decides to outsource “less strategically relevant” (Gilley & Rasheed, 2000, p. 767) functions to its supplier. Peripheral outsourcing consists of outsourcing tasks that are considered not related to focal firm’s core competence to “specialist organizations” (Gilley & Rasheed, 2000, p. 769) who consider the tasks to lie within their core competence. They argue that there are three main reasons for firms to pursue outsourcing of peripheral activities. First, it provides the firm an ability to concentrate on their core competencies rather than waste valuable resources on activities that do not directly impact their revenue. Second, through peripheral outsourcing the buyer will be able to rely on “specialist organizations” to provide the necessary

capabilities that are not related to their core competence. Consequently, the quality of the capabilities gained may be higher because the specialist organization is able to execute the project within their core competence. Finally, the buyer can gain cost advantages by outsourcing peripheral activities to the supplier.

In contrast, core outsourcing is considered to be “important to long-run success” (Gilley & Rasheed, 2000, p. 767) of the firm. Core outsourcing consists of functions that relate directly to the revenue stream of the firm. Increasingly, firms are pursuing outsourcing of their core activities to gain capabilities through partnerships with their suppliers (Gilley & Rasheed, 2000; Gottfredson et al., 2005; Holcomb & Hitt, 2007). Outsourcing of core activities has to be undertaken carefully. Researchers have identified some potential issues when outsourcing tasks that are related to the core competence of a firm. First, there is a potential for the firm to lose their competitiveness toward innovation (Teece, 1988). In addition, suppliers may gain the capabilities and have a potential to become competitors (Prahalad & Hamel, 1990; Quinn, 1992). Finally, failures associated with core outsourcing are far more detrimental than failures associated with peripheral outsourcing activities because they can jeopardize the future performance of a firm (Gilley & Rasheed, 2000).

Firms also consider relationship quality with their supplier in an outsourcing engagement. Relationship quality is determined by the level of conflict and amount of trust between the partners (Kumar, Scheer, & Steenkamp, 1995). One of the key contributing factors for deterioration of relationship quality is supplier opportunistic behavior, in particular *ex post* opportunistic behavior. Deterioration in relationship quality can result in lowered relational competence. Relational competence is defined as the ability of a firm to work in a collaborative manner with its partners (Paulraj et al., 2008). In particular, relational competence manifests

itself in the form of information exchange and ability to understand each other when solving problems. Each party is unwilling to share valuable and critical information that may be relevant to the other party. The information that the parties share may not be in a timely manner to allow adequate time for the other party to utilize the information constructively. Such mistrust can increase misunderstanding between the two parties resulting in unresolved problems in the outsourcing engagement. Overall, the level of cooperation and collaboration between outsourcing partners deteriorates due to *ex post* opportunism exhibited by the supplier.

Both strategic importance and supplier opportunism, are considered together to create four configurations of relationships in an outsourcing engagement (Figure 3). First let us consider the configuration where a firm has outsourced activities that are strategically important to the firm and the supplier is cooperative resulting in better relationship quality. We characterize this relationship configuration as *strategic partnership*. Due to the strategic nature of the engagement, the buyer may have to transfer technology and knowledge that is related to its core competency. The buyer expects a high level of cooperation from the supplier for two reasons. First, the supplier should exhibit discretion and not misappropriate the technology. Second, the success of the outsourcing engagement is critical to the long-term success of the buyer (Gilley & Rasheed, 2000). Buyer-supplier relationship literature has shown that early supplier involvement leads to positive performance for both the buyer and supplier (Petersen, Handfield, & Ragatz, 2005). *Strategic partnership* between the buyer and supplier can lead to the supplier being involved in increased levels of planning, coordination, prioritization and problem-solving resulting in higher levels of relational rents (Paulraj et al., 2008).

In contrast, we characterize an outsourcing engagement as *adversarial relationship* when the strategic importance is high but the relationship quality is low (i.e., supplier *ex post*

opportunistic behavior is high). When the supplier exhibits opportunistic behavior, the level of trust between the buyer and supplier is low. This may lead to multiple, related problems. The buyer may be reluctant to reveal core technology to its supplier resulting in incomplete information transfer to the supplier. The supplier is now providing services based on incomplete information where the full potential of the relationship is not harnessed resulting in lowered benefits gained from the outsourcing engagement. In addition, the smooth functioning of day-to-day activities will be inhibited. The strategic importance of the engagement combined with the supplier's opportunistic behavior can create working conditions that call for increased scrutiny of the decision-making process (Jap & Anderson, 2003). The relationship can be transformed where more "role players" (Jap & Anderson, 2003) such as supervisors and executive managers get involved in salvaging the project. This can result in friction between the buyer and supplier that may exacerbate the already frayed quality of the relationship.

The third configuration where the supplier's *ex post* opportunistic behavior is high but the buyer is engaged in peripheral outsourcing. This relationship configuration is characterized as *arm's length relationship*. Arm's length relationship is characterized by lower levels of cooperation between the outsourcing partners. When the supplier exhibits *ex post* opportunistic behavior the buyer may disengage from the supplier (Jap & Anderson, 2003). Instead, the buyer may rely predominantly on the contract in defining the nature of work. Minimal effort is expended by the buyer toward the maintenance and enhancement of the relationship (Lee et al., 2004). The buyer may resort to *a priori* specification of quality of deliverables resulting in lowered monitoring costs (Aron et al., 2008).

Finally, we consider the fourth configuration where the buyer is engaged in peripheral outsourcing and the supplier is highly cooperative. Even though the outsourcing engagement is

not strategic in nature, the relationship quality between the buyer and the supplier is high. This evokes higher relational competence between the two parties that can result in long-term benefit for the buyer. The buyer can leverage the relationship with the supplier resulting in higher quality deliverables. In addition, the buyer has a unique opportunity to gain new knowledge from the supplier. Finally, the buyer is able to reduce the overall cost of operations because the peripheral tasks have been outsourced to the supplier that specializes in those tasks. We characterize this configuration as *selective partnership*. The configurations of relationship based on strategic importance and relationship quality is depicted below in figure 3.

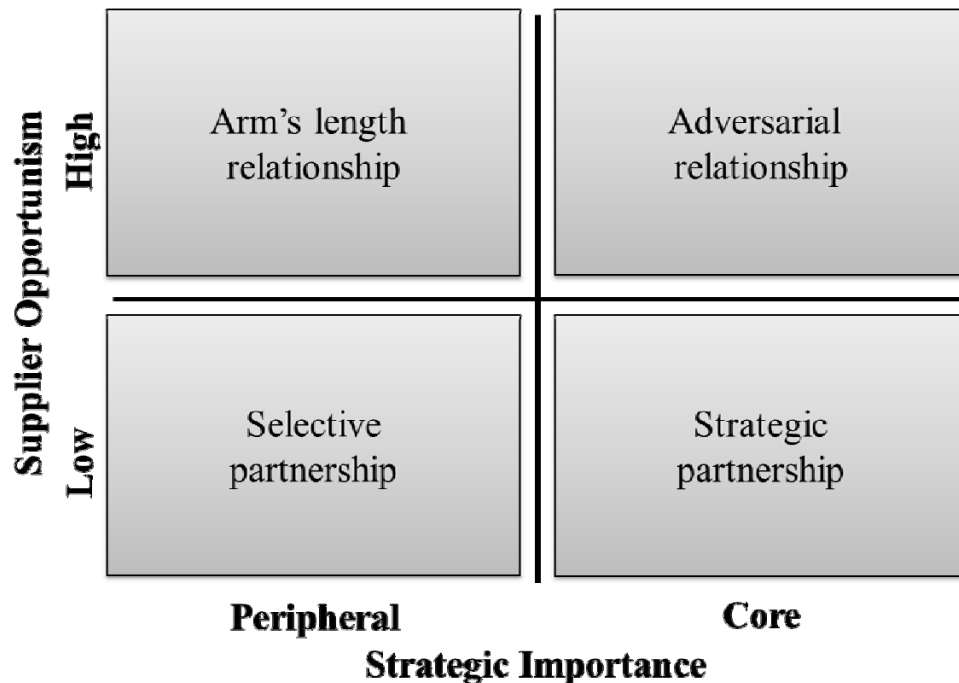


Figure 3 – Configurations of relationships in an outsourcing engagement

3.3.2 Governance configurations

Using the broad classification of transactional and relational governance, we arrive at four configurations of governance. First consider the configuration with low transactional

governance and high relational governance. We characterize this governance configuration as *relation-dominant* governance. In this governance configuration, the buyer relies more on relational norms such as information exchange and shared understanding to resolve uncertainty in the project. In contrast, when the buyer predominantly relies on transactional governance mechanisms, the governance configuration is characterized as *contract-dominant* governance. The outsourcing partners may communicate and solve problems but the buyer relies primarily on monitoring the supplier to ensure the time and quality requirements of the outsourcing engagement are met. When necessary, the buyer may resort to renegotiating the contract to accommodate changes rather than communicating with the supplier and resolving the issues through relational mechanisms.

Transaction cost economics (Coase, 1937; Williamson, 1979, 1981; Williamson, 1985) suggests that firms resort to market transaction when cost of coordination is low. An example of market-based governance is to pursue a strategy of *minimal* governance. In this configuration, the buyer does not monitor the outcomes of the engagement but rather stipulates upfront the necessary requirements that the supplier may have to fulfill as part of the outsourcing engagement. Lee et al. (2004) found that firms use a fee-for-service type strategy when pursuing outsourcing engagements that are selective in nature.

Finally, consider the *hybrid* governance configuration. In this governance configuration, the buyer uses both relational and transactional governance mechanisms with high intensities. Even though relational norms have been touted as important in establishing trust and increasing performance of buyer-supplier relationships, there are studies that show that reliance on just relational mechanisms may not be enough. For example, Langfred (2004) found that team performance reduced when the monitoring of activities was low even though the level of trust

among the members was high. Similar findings were found in a buyer-supplier setting by Jeffries and Reed (2000). They found that too much trust, without appropriate contractual safeguards, resulted in lower performance. Jap and Ganesan (2000) found that it is easier to mitigate opportunistic behavior through transactional governance rather than relational governance mechanisms. Based on these studies, it can be argued that the use of both transactional and relational governance mechanisms allows the buyer to take advantage of “best of both worlds”. Whereas relational governance mechanisms allow firms to cooperate and coordinate with the supplier to resolve uncertainty, contractual governance mechanisms keep the outsourcing engagement “on track” for successful completion. The governance configurations based on transactional and relational governance mechanisms are shown in figure 4.

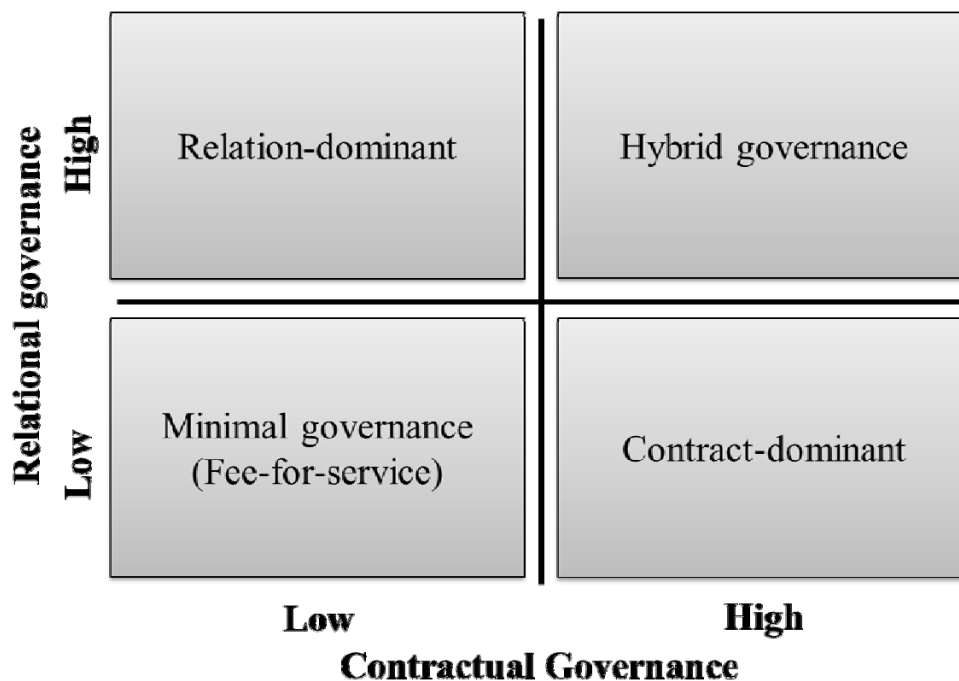


Figure 4 – Configurations of governance mechanisms in an outsourcing engagement

3.3.3 Linking the elements (Gestalts)

In this dissertation, it is hypothesized that for each relationship configuration there is an “ideal configuration” of governance mechanism. That is, there exists a gestalt of governance configuration for each relationship configuration. Firms should experience superior outsourcing performance when they use the ideal governance configuration associated with the relationship configuration. As mentioned earlier, Venkatraman (1989) suggests that fit as gestalts is “defined in terms of the degree of internal coherence among a set of theoretical attributes”. D. Miller (1981) emphasizes that it is important to not only consider the strategic choices but also the conditions under which the choices are made. In this research, configurations of governance mechanisms represent the “strategic choices” and the conditions are represented by the relationship configuration.

First, let us consider *strategic partnership* configuration. The relationship quality between the buyer and supplier is high resulting in higher levels of cooperation in solving problems faced in an outsourcing engagement. The buyer and supplier can engage in joint problem solving in addition to communicating with each other in a proactive manner. Transactional governance mechanisms have been shown to keep projects on track. Buyer may engage in transactional governance mechanisms such as monitoring to ensure that the milestones of the engagement are achieved. There is also evidence that shows that overuse of transactional mechanisms such as monitoring can result in distrust between outsourcing partners resulting in lowered performance outcomes. Instead, when the relationship quality is high, transactional governance mechanisms can act as positive reinforcement toward accomplishing the goals of the engagement (Jeffries & Reed, 2000). Hence, in *strategic partnerships* buyers will engage in hybrid form of governance to gain benefits from the outsourcing engagement.

H5: Hybrid governance will provide superior outsourcing performance in a strategic partnership with its supplier in comparison to other governance configurations

In an *adversarial relationship* configuration, the activities performed are of high importance to the buyer because it is related to its core competence. Prior research found that the principal has a tendency to rely more on transactional governance mechanisms when it encounters opportunistic behavior from the agent (Eisenhardt, 1989; Stump & Heide, 1996). The buyer and supplier may not engage in joint problem solving and over time the level of proactive information exchange between the buyer and supplier may reduce as well. The outsourcing partners have a potential to be entrenched in a negative spiral of mistrust and rely less on shared values and norms of the engagement. In order to achieve higher level of outsourcing performance, the buyer has no other choice but to rely on transactional governance mechanisms and monitor activities rather than develop relational competence through information exchange and joint problem solving. Therefore:

H6: Contract-dominant governance will provide superior outsourcing performance in an adversarial relationship with its supplier in comparison to other governance configurations

Now consider the *arm's length* relationship. The relationship is characterized by the supplier exhibiting higher levels of *ex post* opportunistic behavior but the firm is engaged in an outsourcing engagement that is peripheral to its core competence. Due to higher levels of opportunistic behavior, the buyer may have to rely on transactional governance mechanisms due to the difficulty in engaging with the supplier in developing relational competence. Furthermore, the peripheral nature of engagement may result in the buyer stipulating the requirements of the engagement through the contract rather than closely monitor the actions of the supplier.

Researchers have shown that the buyer can avoid “costly monitoring” when the quality outcomes of the outsourcing engagement are stipulated *a priori* (Aron et al., 2008). Lee et al. (2004) found that when a firm is engaged in selective outsourcing, they tend to rely on fee-for-service type of arrangements. Hence, it is hypothesized that the relationship can be adequately managed using a *minimal* governance mechanism (i.e., fee-for-service). Therefore:

H7: Minimal (fee-for-service) governance will provide superior outsourcing performance in an arm’s length relationship with its supplier in comparison to other governance configurations

Finally, consider the *selective partnership*. The relationship quality between the buyer and supplier is high due to lower levels of supplier *ex post* opportunistic behavior. An environment that is conducive for increased information exchange and participation because of supplier’s cooperative nature. The buyer may benefit by communicating and solving problems jointly, even though the nature of outsourcing engagement is not related to the core competence of the buyer. Due to the peripheral nature of the tasks, the buyer may not rely on monitoring the outsourcing engagement closely. In addition, the buyer may decide that any changes to the relationship can be handled through information exchange and shared understanding rather than spending valuable resources on renegotiating the contract. Therefore:

H8: Relation-dominant governance will provide superior outsourcing performance in a routine relationship with its supplier in comparison to other governance configurations

3.4 Summary of research framework

Chapter 3 discussed the new perspectives in managing outsourcing engagement based on buyer-supplier relationship perspective. This chapter provided a configurational approach to understanding the management of outsourcing engagements. Specifically, two methods of configurations are considered. First, fit as profile deviation was presented. Using this approach, ideal profiles of governance mechanisms that enable effective management of outsourcing engagements for different risk profiles were identified. The risk profiles were identified based on two sources of risk – project uncertainty and supplier *ex post* opportunism. Second, fit as gestalts was presented. Using this approach, gestalts of governance mechanisms that correspond to the relationship configuration of the outsourcing engagements was presented. Two factors were considered in identifying the relationship configurations – strategic importance of the relationship and supplier *ex post* opportunistic behavior. To find support for the research frameworks, an empirical methodology was used. The details of this approach are presented in the next chapter.

CHAPTER 4: RESEARCH METHODOLOGY

This chapter explains the methodological approach used in this dissertation. The data collection methodology including the sampling frame is first presented. Following this, scale development and the measures used in this dissertation are presented. Finally, the measurement validation process and the results are presented.

4.1 Data collection

The data for this research was collected using web-survey methodology. Web-survey methodology is a cost and time efficient method of collecting data (Dillman, Smyth, & Christian, 2008). Two organizations, Project management institute (PMI) and International association of outsourcing professionals (IAOP), were approached for data collection. The respondents were members of buying organization (clients) who belonged to PMI and IAOP. It is important to identify appropriate sampling frame because it is crucial for the validity of the study (Dillman et al., 2008; Lessler & Kalsbeek, 1992; Rogelberg & Stanton, 2007). Since the unit of analysis for this research is an outsourcing engagement, it was deemed appropriate to approach members of PMI and IAOP. It is also important to seek appropriate respondents who possess adequate knowledge and appropriate information about the phenomenon being examined (B. K. Boyd, Dess, & Rasheed, 1993). In accordance with their argument, only respondents who were closely associated with their outsourcing engagement were asked to participate in the survey. The respondents held titles such as project manager, program manager, project sponsor, portfolio manager and project team member. The demographic information on the respondents is provided in Table 1.

In order to gain generalizability of the findings, no restrictions were placed on the industry association of the respondent. Consequently, the respondents belonged to a varied set of industries. The industry information of the respondents in the sample is provided in Table 2. Whereas a majority of the respondents belonged to the manufacturing sector, respondents from sectors such as professional and technical services, finance and information are represented in adequate numbers as well. This provides evidence for a larger applicability of the findings from this research to sectors other than manufacturing sector.

<i>Role</i>	<i>Number of Respondents</i>	<i>% of Total</i>
Project Manager	54	24.66%
Program manager	43	19.63%
Team member	34	15.53%
Project Sponsor	19	8.68%
Portfolio manager	5	2.28%
Other	50	22.83%
Did not specify	13	6.39%
TOTAL	218	100.00%

Table 1 – Respondent demographic information

<i>Industry</i>	<i>NAICS Code</i>	<i>Sample</i>	<i>Percentage</i>
Manufacturing	31 - 33	53	24.20%
Professional, Scientific, and Technical Services	54	48	22.02%
Finance & Insurance	52	39	17.81%
Information	51	32	14.61%
Health care and social assistance	62	13	5.94%
Utilities	22	7	3.20%
Public Administration	92	6	2.74%
Mining, Quarrying, and Oil and Gas Extraction	21	6	2.74%
Educational services	61	6	2.74%
Retail Trade	44 - 45	4	1.83%
Transportation & Warehousing	48 - 49	2	0.91%
Construction	23	1	0.46%
Administrative and Support and Waste Management and Remediation Services	56	1	0.46%
TOTAL		218	100.00%

Table 2 – Industry information for the sample

4.1.1 Response rate

Researchers have suggested different methods of calculating response rates (Klassen & Jacobs, 2001; Lessler & Kalsbeek, 1992). The numerator in the response rate calculation is the sample size obtained as part of the data collection process. The denominator can be “expressed as all firms approached, as only deliverable surveys or as only firms expressing interest in the survey following a pre-notification letter or telephone call.” (Klassen & Jacobs, 2001, p. 714). Response rate is calculated by dividing sample size by the size of the sampling frame. On the

other hand, completion rate is calculated by dividing the sample size by the number of respondents expressing interest in the research study (Lessler & Kalsbeek, 1992). Researchers have utilized two approaches to solicit responses through web survey. First, a pre-notification method is utilized where the respondents are invited to participate in the research study. The potential respondents are contacted via email or telephone calls to explain the purpose of the survey. After the initial contact, the link to the web survey is sent only to the respondents who express interest in the research study. For example, (De Jong & Elfring, 2010) solicited participation from respondents by sending invitations to the consultants to take the survey. This approach yielded a response rate of 82%. Similarly, (Gatignon, Tushman, Smith, & Anderson, 2002) reported a response rate of 70% when soliciting responses from R&D directors in their study. Second approach for soliciting responses is to directly send the link to the survey to the members of the sampling frame without sending an invitation for participation. Typically, this method yields low response rate. For example, Cao and Zhang (2011) reported their response rate as 6% based on the number of emails they sent out and the sample size of the data. The response rates for studies using web surveys without sending invitations were found to be in the range of 1% to 10% (Grandcolas, Rettie, & Marusenko, 2003). One of the reasons cited for low response rate is the fatigue among respondents toward spam email (Grandcolas et al., 2003; Klassen & Jacobs, 2001; Mehta & Sivadas, 1995).

Some researchers have argued that it is not possible to calculate response rate because the manner by which the respondents were approached precludes accurate determination of the number of respondents that were sent the link to the survey. For example, Shapiro, Kirkman, and Courtney (2007) sought responses from academics and business practitioners to study the research-practice gap among academy of management (AOM) members. The authors provided a

link to the web survey and solicited participation from the members by sending emails using a listserv email list. Such attempts provided sizeable sample size ($n=548$) but resulted in the researchers' inability to accurately calculate response rate. Due to the method by which the authors solicited survey participation, the authors estimated that their response rate is between 8% and 10%. Similar response rates were reported by other researchers when they directly approach the respondents without using a pre-notification method (Grandcolas et al., 2003).

Based on the evidence from literature and the recommendations by Dillman et al. (2008), the approach of utilizing pre-notification method was considered appropriate. Furthermore, direct access to the membership of PMI and IAOP was refused by the leaders of both organizations. The main reason stated was that the members were inundated by email requests to fill out surveys. The organization's leaders agreed to send an invitation email that provided an explanation of the purpose of the research study as well as the contact information of the researcher. Members who were interested in participating in the study were asked to directly contact the researcher via email. In total, 289 members expressed interest in filling out the survey and they were sent a link to the web survey. The respondents were asked to choose a specific outsourcing engagement when responding to the questionnaire. Reminder emails were sent 3 weeks after the start of the survey period with the link to the web survey included. In total, data collection lasted for 6 weeks for each organization. Out of the 289 members who expressed interest, 218 members finished the survey providing a completion rate of 75.4%. In order to calculate the response rate, the organizations were asked to provide information regarding number of emails that were sent as part of the original invitation to participate in the research study. In addition, the organizations were asked to provide information on number of valid emails as well as demographic information of the potential respondents. Unfortunately, both

organizations mentioned that their mailing lists are not up-to-date. That is, the representatives of both organizations mentioned that they do not remove email addresses that are invalid from the mailing list. In addition, they were unable to provide demographic information for their membership. Based on the information provided by the organizations the accurate response rate cannot be calculated. This research utilized similar data collection methodology as used by aforementioned researchers. In addition, the completion rate of the survey is comparable to the studies that used pre-notification method for inviting respondents to participate in the survey. Based on these criteria, it is estimated that the response rate is between 3% and 6%.

4.1.2 Nonresponse bias tests

Nonresponse bias tests were conducted in two ways. The demographic information (firm size, relationship length, outsourcing experience) between early and late respondents were compared. In addition, the responses for each construct for the early and late respondents were compared. The sample was divided into early respondents (25%) and late respondents (25%) for comparison. These tests assume that the characteristics of late respondents are equivalent to the characteristics of nonrespondents (Armstrong & Overton, 1977). The variables were compared between early and late responders using t-tests.

Three demographic variables - number of employees, outsourcing experience and relationship length – were used for nonresponse bias testing. The results indicate that there were no significant differences between early and late respondents with respect to number of employees ($p < 0.926$), outsourcing experience ($p < 0.343$) and outsourcing relationship length ($p < 0.942$). Further tests were conducted by comparing the constructs used in this research. The results indicate that the differences are not significant for all constructs except monitoring and

shared understanding. The results indicate that early responders used lower levels of monitoring ($p < 0.008$) and shared understanding ($p < 0.027$). Given the purpose of the test is to reveal if there is a propensity among nonrespondents to avoid providing feedback. That is, the use of governance mechanisms should be lower among late responders in comparison to early responders in order to arouse concern about nonresponse bias. On the contrary, the results indicate the opposite. Furthermore, there were no differences found among dependent variables – outsourcing performance and learning outcomes. Taken together, it was determined that the threat due to nonresponse bias may not be significant.

4.2 Scale development

Measurement instrument was developed to test the phenomena of interest. When possible, existing scales from prior studies were used. Pretest was conducted to assess the validity of the instrument (Dillman, 1978; Dillman et al., 2008). Pretest is an assessment of the survey instrument by the members of the target population and knowledgeable members of the academic community to validate the instrument for format, content and comprehension in order to elicit accurate response from the respondents (Fowler, 2009; Vogt & Johnson, 2011; Weisberg, Krosnick, & Bowen, 1996). For this purpose, the instrument was subjected to Q-sort (Moore & Benbasat, 1991), a form of pretest method.

Two rounds of pretest were administered to two groups of five judges. Each group received half of the questionnaire in the first round. During the second round, the target groups were reversed. Thus, the items were subjected to two rounds of pretest but different set of judges were used for each portion. For each round, the constructs with descriptions were provided along with items in a random order. At the end of first round, the constructs and items were analyzed

based on the item placement scores (Moore & Benbasat, 1991). Items were either reworded or dropped based on the level of cross loadings with other constructs. Items that were dropped were replaced with new items. The updated instrument was subjected to a second round of pretest. The raw agreement scores (Moore & Benbasat, 1991) improved from 71.3% at the end of first round to 84.24% at the end of the second round. The modified and improved instrument was administered to the respondents.

4.3 Measures

This section provides details on the source for survey instruments used in this dissertation.

4.3.1 Opportunism

Opportunism has been identified as an important construct in both transaction cost economics (Coase, 1937; Williamson, 1979, 1981; Williamson, 1985) and agency theory (Eisenhardt, 1989). Opportunism is defined as self-interest seeking with guile (Jap & Anderson, 2003). Guile can comprise of activities that can be constituted as “calculated efforts to mislead, distort, disguise [or] obfuscate” (Williamson, 1985, p. 47). In the literature, opportunism has been defined as any activity pursued by one of the partners that is not in the best interest of the relationship. In the context of this research, opportunism is defined as actions that a supplier can exhibit that are not in the short-term or long-term interest of the buyer. Opportunism has been found to manifest itself in both *ex ante* (i.e., before the beginning of a relationship) and *ex post* (i.e., after the relationship has commenced) forms. There is a distinction between these two forms of opportunistic behaviors. The buyer may be exposed to *ex ante* opportunism when it is in

the process of selecting a supplier. The supplier may misrepresent and position itself as possessing the skills required for the task even though it may not actually possess those skills. This scenario creates an *adverse selection* problem because the buyer is choosing the supplier based on information that is not completely accurate.

Once the outsourcing engagement is underway, the supplier can still exhibit opportunistic behavior. In this scenario, the supplier may exhibit *ex post* opportunistic behavior by not acting in the best interest of the supplier. The supplier may show lowered interest through different actions. For example, the level of commitment shown to the task may not be at the desired level that is required for the success of the relationship. The actual effort exerted by the supplier may be less than required level, resulting in quality problems. The supplier may decide to act in a manner that can cause intended or unintended delays when accomplishing the tasks. It is not necessary that the supplier is in explicit violation of the contract, rather the supplier can be exhibit *ex post* opportunistic behavior by failing to fully comply with the requirements of the project. Taken together, the supplier's actions can be characterized as creating a *moral hazard* problem for the buyer. Research has shown that both forms of opportunistic behavior have a negative influence on performance in inter-organizational relationships (Jap & Anderson, 2003; Tangpong, Hung, & Ro, 2010). This dissertation primarily focuses on the actions that a buyer can take to mitigate the *moral hazard* problem. That is, the focus of this research is on *ex post* opportunistic behavior exhibited by the supplier.

Despite its importance, very few studies have measured the construct due to difficulty in overcoming social desirability bias (Jap & Anderson, 2003). That is, it is very difficult to solicit respondents to self-report on their own opportunistic behavior. To overcome this issue, researchers have relied on other techniques to adequately measure opportunism in buyer-supplier

relationships. For example, Schilling and Steensma (2002) measure opportunism as a perception of the buyer on threat of being taken advantage and level of oversight that is needed to thwart the effects of opportunism on performance. Ang and Cummings (1997) mention that when a buyer does not experience a “lock-in” situation (Narasimhan et al., 2009) the threat due to opportunism is reduced. They use this concept and operationalize threat due to opportunism as presence of alternate suppliers that are reputable and trustworthy. Interestingly, Schilling and Steensma (2002) and Ang and Cummings (1997) refer primarily to *ex ante* opportunism where the buyer can choose different suppliers before entering into the relationship. Their measures are not suitable because the primary focus of this research is to evaluate supplier *ex post* opportunistic behavior (*moral hazard* problem) rather than *ex ante* opportunistic behavior (*adverse selection* problem). Jap and Anderson (2003) developed scales that overcome the issues mentioned above. They measure *ex post* opportunism by asking the respondent to assess the opportunistic behavior exhibited by their partner. In this research, their measures are adapted for outsourcing engagements and respondents from the buyer organization were asked to assess the *ex post* opportunistic behavior exhibited by the supplier.

4.3.2 Project Uncertainty

Project uncertainty in an outsourcing engagement arises due to lack of clarity in priorities. Typically, outsourcing engagements need to execute a series of interdependent tasks in to accomplish the goals of the outsourcing engagements. The degree of interdependency between tasks increases with the increase in scope of the project (Shenhar 2001). When the stakeholders of the project cannot reach consensus on the goals of the project and the priorities, it is difficult to define the requirements of the project with ease. Consequently, the project team members are unable to anticipate any problems that may be encountered during execution because they lack a

clear understanding of the requirements of the project. Researchers have considered the novelty of technology and complexity of the tasks as contributing factors to uncertainty of tasks (Stock & Tatikonda, 2000; Tatikonda & Rosenthal, 2000). Typically, the newness of a project can create uncertainty due to the learning process involved in fully understanding the end-state of the project requirements. Furthermore, technological uncertainty can play an important role as well. That is, the technology being used to achieve the tasks can create barriers to smooth execution of the outsourcing engagement. Taken together, project uncertainty addresses the uncertainty in an outsourcing engagement arising out of lack of clarity of requirements, interdependency among tasks, inability to prioritize important tasks and newness of technology being used. The measures for project uncertainty were adapted from Bendoly and Swink (2007) and Nidumolu (1995). Bendoly and Swink (2007) study the impact of task uncertainty on task performance. Nidumolu (1995) studied the impact of project uncertainty in IT projects. Items from these studies were adapted to capture uncertainty in an outsourcing engagement.

4.3.3 Governance mechanisms

Both transactional and relational governance mechanisms are measured in this study. Transactional governance mechanisms comprise of monitoring, contract flexibility and transaction-specific investments. Relational governance mechanisms are derived from relational norms (Heide & John, 1992; MacNeil, 1980). Two relational norms are considered - information exchange and shared understanding. The measures for these governance mechanisms are discussed in this section.

Monitoring mechanisms enable a buyer to verify that the supplier is in compliance with the requirements of the outsourcing engagements. Through monitoring, the buyer is able to

ensure that the supplier is adequately providing deliverables that meet the quality standards and other established performance standards. Agency theory (Eisenhardt, 1989) suggests that the principal can either monitor the behavior of the agent or the outputs. Typically, the decision to use either behavioral monitoring or output monitoring depends on the ability of the principal to adequately gauge the deliverables of the agents. Furthermore, monitoring has been shown to be required even when adequate *ex ante* effort has been expended in selecting suppliers (Williamson, 1993). The items for monitoring were derived from Stump and Heide (1996), who studied the impact of monitoring on opportunistic behavior of the supplier. In addition, findings from Ellram et al. (2008) were utilized to create measures for supplier reporting. Their study found that suppliers comply with goals of the engagement when they are required to provide periodic reports on the progress of the outsourcing engagement.

Construct	Loadings	ITEM	Source
How often does your supplier do the following? (1 = Hardly ever; 3 = Sometimes; 5 = Very often)			
<i>ex post</i> Opportunism CR = 0.915; AVE = 0.643	0.803	Our supplier made hollow promises	Jap & Anderson, 2003
	0.810	Our supplier violated compliance with project requirements	Jap & Anderson, 2003
	0.718	Our supplier expected us to pay more than agreed upon costs to correct problems	Jap & Anderson, 2003
	0.864	Our supplier shirked responsibility for meeting project requirements	Jap & Anderson, 2003
	0.835	Our supplier made false claims about agreements made during the engagement	Jap & Anderson, 2003
	0.772	Our supplier provided false information	Jap & Anderson, 2003
Please indicate your level of agreement with the following statements. (1 = Strongly Disagree; 3 = Neither Agree nor Disagree; 5 = Strongly Agree)			
Project uncertainty CR = 0.799; AVE = 0.511	0.804	In this engagement, objectives were not well defined until late in the project life-cycle	Bendoly & Swink, 2007; Nidumolu, 1995
	0.799	In this engagement, we had conflicting requirements	Nidumolu, 1995
	0.754	In this engagement, actions that were beneficial to the success of the engagement were difficult to determine	Bendoly & Swink, 2007
		<i>In this engagement, technology required to complete the project was readily available (R)</i>	Nidumolu, 1995
	0.437	In this engagement, it was difficult to anticipate execution problems	Bendoly & Swink, 2007; Nidumolu, 1995

Table 3 – Risk constructs, items and sources

Contract flexibility is used to overcome the problem of bounded rationality by the buyer in an outsourcing engagement. Typically, in an outsourcing engagement it is difficult to specify all the contingencies *a priori*. Through the use of contract flexibility (i.e., contingency planning), the buyer is able to adjust the scope of the outsourcing engagement after it is underway. N. S. Argyres et al. (2007) examined the evolution of a contract and the level of contingency planning conducted by the buyer and supplier. They contend that the TCE argument that the buyer is able to instantaneously evaluate the cost of coordination is not valid in a relationship. Typically, the parties involved learn during the life of the relationship and thus need to make adjustments. Two different forms of contingency planning are identified – *generic* and *specific* contingency plans. Generic contingency planning specifies the process by which the buyer and supplier agree on the process by which changes are made. In contrast, specific contingency planning can include details of changes that can be made to the contract when the engagement encounters unforeseen situations. Even though N. S. Argyres et al. (2007) provided detailed description of contingency planning, they used only a single-item measure citing time-constraints among their respondents. In this dissertation, their study was used to develop a set of new items that reflect contingency planning as the level of flexibility retained in the contract by the buyer. New items are derived from the description of this study to capture both *generic* and *specific* contingency plans that the buyer may pursue as the contract progresses.

Transaction-specific (TS) investments in buyer-supplier relationships have been considered important by researchers (Jap & Anderson, 2003; Liu et al., 2009; Nyaga et al., 2010). TS investments create safeguards against opportunism because the parties involved have a vested interest in the success of the relationship. In this research, transaction-specific investments construct is measured using the items derived from Anderson and Weitz (1992). This study has

been used by many researchers who have measured transaction specific investments (Jap & Anderson, 2003; Liu et al., 2009; Nyaga et al., 2010). The items were adapted for an outsourcing engagement setting to reflect the level of effort and time invested by the outsourcing partners. In addition, it also captures the information regarding specific processes and procedures that were implemented for the outsourcing engagement.

Information exchange has been shown to provide an advantage in inter-organizational relationships. Through information exchange, the outsourcing partners are able to keep each other informed on important developments within the outsourcing engagement. Furthermore, information exchange can result in synchronization of activities in an outsourcing engagement. Through information exchange the buyer and supplier can also foster partnership and build trust that can result in reduction in opportunism. Information exchange has been measured by many OM researchers (Cousins & Menguc, 2006; Monczka et al., 1998; Paulraj et al., 2008). Cousins and Menguc (2006) use a three item scale to measure communication. Paulraj et al. (2008) measure type and frequency of information exchanged between the buyer and supplier. Monczka et al. (1998) suggest that communication involves information quality, information participation and information sharing. Their measure of communication covers the depth, breadth and type of information being shared between supply chain partners. In this study, items from Paulraj et al. (2008) were adapted to measure communication because it addresses the frequency of information exchange as well as formality of information exchange.

Finally, Shared understanding has been shown to be essential in joint problem solving between the outsourcing partners. Through shared understanding, the outsourcing partners are able to resolve any disagreements regarding the actions that need to be taken in the outsourcing engagement. Typically, shared understanding requires repeated interaction between the

outsourcing partners. Such repeated interactions dispel the inefficiencies in information exchange and allows the partners to quickly identify and exchange pertinent information that is essential for problem-solving. Despite its importance, few studies have measured this construct to examine buyer-supplier relationships (Fugate et al., 2009; Koufteros, Vonderembse, & Doll, 2002). Only Fugate et al. (2009) measured the level of shared understanding between organizations. Their items measured the shared understanding in a logistics setting. The items are adapted to measure shared understanding in an outsourcing context. Tables 4 and 5 show the constructs, items and their sources for governance mechanism constructs.

4.3.4 Outsourcing performance and learning outcomes

In this research, outsourcing performance has been conceptualized as project performance. The immediate concern for project managers when managing outsourcing engagements is time and cost performance. Furthermore, scope of the outsourcing engagement has an impact as well. Hence, outsourcing performance has been operationalized using time performance, cost performance, quality of deliverables and the technical performance. It is difficult to obtain actual data (i.e., objective data) from outsourcing engagements. Practitioners are reluctant to reveal this information because of company policy or proprietary nature of the information. Hence, outsourcing performance has been measured using perceptual scales. Items developed by Lewis et al. (2002) were adapted to measure outsourcing performance.

Researchers have established that firms engage in strategic outsourcing to gain capabilities (Gottfredson et al., 2005; Holcomb & Hitt, 2007). Capabilities that are gained can differ based on the nature of the engagement. For example, firms can gain key technological capabilities that can be incorporated into the firm's products. Firms may gain capabilities that are

more commercial in nature. For example, 7-Eleven utilized their outsourcing engagements to gain commercial objective of being more competitive in the marketplace (Gottfredson et al., 2005). This research combines these objectives together as learning outcomes. Firms look to gaining valuable knowledge that can be utilized in ongoing operations. Thus, learning outcomes allow firms to improve their overall capabilities. Lewis et al. (2002) measure both technical and commercial objectives of an outsourcing engagement. In this research, the items developed by Lewis et al. (2002) are utilized to measure the learning outcomes gained by buyers in the outsourcing engagement. The items tap into the construct by measuring the technical and proprietary knowledge as well as information gained from the outsourcing engagement. In addition, the items also measure the commercial objectives and overall capabilities that the buyer gained through the outsourcing engagement. Table 6 shows the constructs, items and their sources for performance and outcomes constructs.

4.3.5 Controls

Literature has established that the success of a project is dependent on its criticality to top management (Tatikonda & Rosenthal, 2000). Top management scrutiny is higher for critical projects, increasing the probability of success of a project. Thus, it is important to control for such confounding factors. This research will utilize a one-item measure adapted from (Tatikonda & Rosenthal, 2000) to gauge the criticality of the outsourcing engagement.

Firms are outsourcing both domestically as well as offshore. Cultural distance between the buyer and supplier can pose significant inefficiencies due to communication challenges. This can result in increased uncertainty in the engagement. Whereas some researchers have developed perceptual measures to capture cultural uncertainty, many OM researchers have used cultural

distance as a proxy measure for cultural uncertainty (Cheung, Myers, & Mentzer, 2010; Kaufmann & Carter, 2006). Cultural uncertainty will be measured using cultural distance measure using Hofstede's measures. Cultural distance will be measured using the methodology used by (Kogut & Singh, 1988). In addition, the following controls are used - firm size, experience in managing outsourcing projects and length of relationship between the buyer and supplier. Buying firm's size can increase the power of the buyer in the relationship. In addition, buying firm's experience in managing outsourcing projects create tacit knowledge and organizational routines that are utilized in managing outsourcing engagements. Finally, the length of the relationship between the buyer and supplier can create routines in the relationship that can potentially substitute the governance mechanisms. Hence, these factors are used as controls.

Construct	Loadings	Item	Source
Please indicate your level of agreement with the following statements. (1 = Strongly Disagree; 3 = Neither Agree nor Disagree; 5 = Strongly Agree)			
Monitoring CR = 0.801; AVE = 0.505	0.665	In this engagement, we performed frequent formal reviews throughout the project	Lewis et al 2002; Tatikonda & Rosenthal, 2000
	0.767	In this engagement, we periodically required deliverables from the supplier	Ellram, Tate & Billington, 2008
	0.808	In this engagement, we continuously monitored the quality of deliverables	Stump & Heide, 1996
	0.580	In this engagement, we continuously monitored key phases of the project using metrics	Stump & Heide, 1996; Lewis et al 2002
Please indicate your level of agreement with the following statements about the relationship between your firm and the supplier. (1 = Strongly Disagree; 3 = Neither Agree nor Disagree; 5 = Strongly Agree)			
Transaction specific investments CR = 0.802; AVE = 0.674	0.684	We made significant investments specific to this relationship	Adapted from Anderson & Weitz, 1992; Jap & Anderson, 2003
	0.938	We expended a high level of effort to maintain this relationship	Adapted from Anderson & Weitz, 1992; Jap & Anderson, 2003
		<i>We instituted processes and procedures that are specific to this relationship</i>	Adapted from Anderson & Weitz, 1992; Jap & Anderson, 2003
Please indicate your level of agreement with the following statements. (1 = Strongly Disagree; 3 = Neither Agree nor Disagree; 5 = Strongly Agree)			
Contract flexibility CR = 0.525; AVE = 0.274	0.443	In this engagement, contract terms were flexible to accommodate changes	Derived from Argyres, Bercovitz & Mayer (2007)
	0.485	In this engagement, contract terms were renegotiated based on changing needs	Derived from Argyres, Bercovitz & Mayer (2007)
	0.624	In this engagement, detailed agreements were crafted to manage contingencies	Derived from Argyres, Bercovitz & Mayer (2007)

Table 4 – Transactional governance constructs, items and sources

Construct	Loadings	Item	Source
Please indicate your level of agreement with the following statements about the relationship between your firm and the supplier. (1 = Strongly Disagree; 3 = Neither Agree nor Disagree; 5 = Strong Agree)			
Information exchange CR = 0.775; AVE = 0.486	0.765	We exchange information frequently	Paulraj, Chen, Lado, 2008
	0.309	We exchange information informally	Paulraj, Chen, Lado, 2008
	0.784	We exchange information in a timely manner	Paulraj, Chen, Lado, 2008
	0.803	We keep each other informed about any changes that may affect the other party	Paulraj, Chen, Lado, 2008
Please indicate your level of agreement with the following statements about the relationship between your firm and the supplier. (1 = Strongly Disagree; 3 = Neither Agree nor Disagree; 5 = Strong Agree)			
		<i>We agree on what is important in this engagement</i>	Adapted from Ko, Kirsch & King, 2005
Shared Understanding CR = 0.829; AVE = 0.619	0.807	We quickly resolve disagreements	Fugate, Stank & Mentzer, 2009
	0.840	We quickly reach agreement on the use of new information	Adapted from Fugate, Stank & Mentzer, 2009
	0.707	We share similar understanding when changes occur during the engagement	Adapted from Fugate, Stank & Mentzer, 2009; Ko, Kirsch & King, 2005

Table 5 – Relational governance constructs, items and sources

Construct	Loadings	Item	Source
As a result of this engagement, we (1 = Strongly Disagree; 3 = Neither Agree nor Disagree; 5 = Strongly Agree)			
Learning Outcomes CR = 0.845; AVE = 0.542	0.817	gained proprietary technical knowledge	Lewis et al 2002
	0.938	gained valuable technical knowledge	Lewis et al 2002
	0.547	gained information helpful to other ongoing engagements	Lewis et al 2002
	0.461	improved our overall capabilities	Lewis et al 2002
		<i>met our commercial objectives</i>	Lewis et al 2002
	0.485	introduced products/services to market in a timely fashion	Lewis et al 2002
		<i>developed products/services with reasonable costs</i>	Lewis et al 2002
How do you characterize the performance of the engagement on these measures? (1 = Very dissatisfied; 3 = Neutral; 5 = Very satisfied)			
Performance CR = 0.789; AVE = 0.488	0.599	On-time performance (i.e., schedule)	Lewis et al 2002
	0.604	Actual costs (i.e., budget)	Lewis et al 2002
	0.792	Quality of the deliverables	Lewis et al 2002
	0.775	Technical performance	Lewis et al 2002
		<i>Overall satisfaction</i>	Lewis et al 2002

Table 6 – Performance constructs, items and sources

4.4 Measurement reliability and validity

Confirmatory factor analysis (CFA) was performed using structural equations model. EQS 6.1 was used to conduct the CFA. Measurement model fit was assessed using fit statistics such as chi-squared statistic (χ^2), comparative fit index (CFI), Non-Normed fit index (NNFI), root mean squared error approximation (RMSEA) and standardized root mean square residual (SRMR). The confirmatory factor analysis yielded $\chi^2(524) = 830.230$, CFI = 0.912, NNFI = 0.904, RMSEA = 0.052 and standardized RMR = 0.071. The model fit indices are considered acceptable because the fit indices are above the recommended thresholds (Hu & Bentler, 1999).

To assess the reliability, convergent validity and discriminant validity of the constructs further analysis was conducted as suggested by Fornell and Larcker (1981). The composite reliability of most constructs is above the criteria except for contract flexibility (CR = 0.525) that falls below the threshold value of 0.70. The convergent validity establishes that the manifest variables collectively tap into the latent meaning of the construct. The convergent validity of the items generally exceeds the threshold value of 0.6. The loadings for each item are listed in tables 3, 4, 5 and 6.

Discriminant validity of the constructs were assessed based on the average variance extracted (AVE) for each measurement scale. The values for each of the scales should equal or exceed 0.50 (Fornell & Larcker, 1981). This test for AVE is a stronger test than other tests. Average variance extracted for most of the constructs either exceed or is very close to the threshold value. AVE for contract flexibility is lower than this threshold but the squared value of

AVE exceeds the correlations between contract flexibility and other constructs, indicating that the construct is distinct from other constructs.

Since the data were collected using a single survey and a single respondent, there is a potential for common method bias. Harman's one factor test was conducted to test for this bias. All items were assigned to a single factor (Podsakoff, MacKenzie, Jeong-Yeon, & Podsakoff, 2003). Harman's one factor test yielded $\chi^2(531) = 2574.575$, CFI = 0.421, NNFI = 0.388, RMSEA = 0.133 and standardized RMR = 0.206. The fit for the single factor model was very poor and the chi-square change from the hypothesized model was highly significant. The potential for common method bias was found to be non-significant because of the poor fit of the single factor model and the good fit for the hypothesized measurement model. Table 7 shows the correlation matrix for the constructs in this study.

4.5 Summary of research methodology

In this chapter the research methodology used in this dissertation was presented in detail. The data collection methodology was first presented. The data were collected from Project Management Institute (PMI) and International Association of Outsourcing Professionals (IAOP). The scale development methodology and the measures used in this dissertation were presented in detail. Finally, the measures were validated and the results of the validation process were presented. The next chapter will present the analysis method as well as the results of the analysis and testing.

		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
Opportunism	1								
Project Uncertainty	2	0.514 ^{**}							
Contract Flexibility	3	-0.142 [*]	-0.131 [†]						
Monitoring	4	-0.251 ^{**}	-0.338 ^{**}	0.280 ^{**}					
Transaction specific investments	5	-0.034	-0.091	0.122	0.365 ^{**}				
Shared Understanding	6	-0.530 ^{**}	-0.413 ^{**}	0.292 ^{**}	0.222 ^{**}	0.082			
Information exchange	7	-0.479 ^{**}	-0.384 ^{**}	0.202 ^{**}	0.404 ^{**}	0.133 [*]	0.548 ^{**}		
Outsourcing performance	8	-0.657 ^{**}	-0.483 ^{**}	0.115 [†]	0.245 ^{**}	0.091	0.524 ^{**}	0.541 ^{**}	
Learning outcomes	9	-0.204 ^{**}	-0.201 ^{**}	0.127 [†]	0.120 [†]	0.224 ^{**}	0.327 ^{**}	0.342 ^{**}	0.399 ^{**}

† p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

Table 7 – Correlation matrix

CHAPTER 5: ANALYSIS AND RESULTS

This chapter presents the analysis and results of this dissertation. The analysis is conducted in two phases. First, the data are analyzed for fit as profile deviation. Following this, analysis is conducted for fit as gestalts. Detailed explanation of each analysis method and results are presented in the following sub-sections.

5.1 Fit as profile deviation

Fit as profile deviation is the “degree of adherence to an externally specified profile”(Venkatraman, 1989, p. 433) that allows for a multi-dimensional assessment of fit. Furthermore, Venkatraman suggests that the degree of adherence to an ideal profile by a business unit for a given environment can be related to performance, thus identifying an “environment-strategy” co-alignment. This approach is utilized to examine the governance mechanism and risk co-alignment leading to improved outsourcing performance and learning outcomes in an outsourcing engagement. In this dissertation, risk is characterized by project uncertainty and supplier *ex post* opportunistic behavior. Configurations of risk are identified based on the level of risk in an outsourcing engagement. Following this, the ideal profile of governance mechanisms for each risk configuration is identified. The details of the analysis method and the results are shown in the following sections.

5.1.1 Risk profiles

To assess the ideal profile of governance mechanisms, the “environments” (i.e., risk profiles) for the outsourcing engagements were identified. In this dissertation, we theoretically argued for the existence of four risk profiles based on the level of project uncertainty and

supplier *ex post* opportunism. The sample was divided into four groups using median values for project uncertainty and supplier *ex post* opportunism. This approach is similar to the approach used by other studies in the literature (Germain, Claycomb, & Dröge, 2008; Tangpong et al., 2010; J. B. Wu, Tsui, & Kinicki, 2010). The sample was classified into *unstable* (n=48), *uncooperative* (n=56), *high-risk* (n=61) and *routine* (n=53) groups.

5.1.2 Outsourcing performance

Once the risk profiles were identified, an ideal profile of governance mechanisms for each configuration was identified. The ideal profile of variables can be identified either based on theory or using empirical method (Venkatraman, 1989). In this dissertation, the ideal profile is identified through empirical method. Each risk configuration is treated as a separate “environment”. When creating an ideal profile, not all variables can be given equal importance (Venkatraman & Prescott, 1990). In order to identify salient governance variables, the outsourcing performance was regressed on the governance variables for each risk configuration separately. Appropriate control variables were included in the regression equations. The equation for identifying the ideal profiles is shown below:

$$\begin{aligned}
 \text{Outsourcing performance} = & \beta_1 * (\text{Monitoring}) + \beta_2 * (\text{Contract flexibility}) \\
 & + \beta_3 * (\text{Transaction-specific investments}) \\
 & + \beta_4 * (\text{Information exchange}) \\
 & + \beta_5 * (\text{Shared Understanding}) + \beta_6 * (\text{Criticality}) \\
 & + \beta_7 * (\text{Length of relationship}) + \beta_8 * (\text{Outsourcing experience}) \\
 & + \beta_9 * (\text{Firm Size}) + \beta_{10} * (\text{Cultural Distance}) \quad (1)
 \end{aligned}$$

The analysis for profile deviation was conducted separately for each risk configuration. Stepwise regression was used to arrive at salient governance mechanisms. Stepwise regression was used because it helps to “compensate for the relatively small sample sizes...” (Flynn & Flynn, 2004, p. 445). In this research, the sample sizes for each risk profile group is relatively small. Hence, the use of stepwise regression in arriving at salient governance mechanisms was utilized. For the variables, the criterion for entry was set at $p < 0.05$ and the criterion for exit was set at $p < 0.10$. The model for all risk profiles are shown in Table 8. The detailed outputs from SPSS are included in Appendix B. The results of this analysis are discussed below.

The sample size for *unstable* risk configuration (low opportunism – high project uncertainty) group is 48. The R^2 for this regression is 0.126 and the F statistic is 6.643. The results show that shared understanding is the key driver of outsourcing performance for firms with *unstable* risk profile. For this configuration none of the control variables were statistically significantly related to outsourcing performance. Similarly, none of the transactional governance mechanisms variables were statistically significantly related to outsourcing performance.

The sample size for *uncooperative* risk configuration (i.e., high opportunism – low project uncertainty) is 56. The results in column 2 indicate that the salient governance mechanism for this risk configuration is information exchange. The R^2 is 0.178 and F statistic is 11.720 indicating that the fit is good. For this configuration none of the control variables were statistically significantly related to outsourcing performance. Similarly, none of the transactional governance mechanisms variables were statistically significantly related to outsourcing performance.

The sample size for *routine* configuration (low opportunism – low uncertainty) is 61. The results in column 3 indicate that the salient governance mechanism for outsourcing engagements in the *routine* configuration is information exchange. The R^2 is 0.166 and F statistic is 5.759, indicating a satisfactory fit. In this risk profile, cultural distance is negatively and statistically significantly related to outsourcing performance.

The sample size for *high-risk* configuration (i.e., high opportunism – high project uncertainty) is 53. The R^2 for this risk configuration is 0.456 and F statistic is 13.694, indicating a good fit. The results in column 4 indicate that the salient governance mechanisms for outsourcing engagements with *high-risk* profile are shared understanding and information exchange. Interestingly, contract flexibility has a negative influence on outsourcing performance. Similar to *unstable* and *uncooperative* risk profiles, none of the control variables are statistically significantly related to outsourcing performance.

Finally, similar analysis was conducted for the entire sample. The R^2 for the total sample is 0.367, indicating a good fit. The results indicate that the salient governance mechanisms that influence outsourcing performance are shared understanding and information exchange.

<i>Risk group (Group Number)</i>	<i>N</i>	<i>R</i> ²	<i>F</i>	<i>Significant Independent Variables</i>	<i>Coefficient</i>	<i>Standardized Coefficient</i>	<i>t</i>
<i>Unstable (1)</i>	48	0.126	6.643 [*]	Constant	15.254		53.730
				Shared understanding	0.882	0.355	2.577
<i>Uncooperative (2)</i>	56	0.178	11.720 ^{***}	Constant	13.899		49.131
				Information exchange	0.980	0.422	3.423
<i>Routine (3)</i>	61	0.166	5.759 ^{**}	Constant	16.516		70.804
				Cultural distance	-0.364	-0.244	-2.028
				Information exchange	0.597	0.313	-2.604
<i>High-risk (4)</i>	53	0.456	13.694 ^{***}	Constant	13.925		43.577
				Information exchange	1.147	0.473	3.961
				Shared understanding	0.970	0.378	2.851
				Contract flexibility	-0.571	-0.261	-2.182
Total Sample	218	0.367	62.359 ^{***}	Constant	14.706		103.899
				Information exchange	0.950	0.363	5.600
				Shared understanding	0.850	0.325	5.011

† p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

Table 8 – Governance mechanisms significantly related to outsourcing performance

Misalignment measure was calculated for all risk profiles using equation (2) shown below. The top 10% of cases for each risk profile group are considered to be high performers of that group. To prevent skewing of the distribution, the bottom 10% performers are removed from the sample. The remaining cases are considered to be sub-sample for each risk profile group. Misalignment score was calculated for each case belonging to the sub-sample. The misalignment score is the composite deviation from the “ideal profile” of governance mechanisms for the case’s risk profile. The misalignment score is calculated as the sum of weighted Euclidean distance between the calibration sample and sub-sample based on salient governance mechanisms. The Euclidean distances were weighted appropriately by multiplying the standardized beta coefficient of the significant salient governance mechanism to ensure that appropriate weightage is given to each governance mechanism.

$$\text{MISALIGN}_i = \sum_{i=1}^m \left(b_i (X_{si} - \bar{X}_{ci})^2 \right) \quad (2)$$

Where,

b_i = standardized weights of significant governance variables from (1)

$\bar{X}_{ci}$ = average score of the calibration sample (i.e. high performers) for each governance variable

X_{si} = score for each of the study sample for each governance variable

In total, 182 cases were included in the pooled sample. These cases are sub-samples from *unstable*, *uncooperative*, *routine* and *high-risk* profiles. The calibration sample for *unstable* risk profile included 5 cases with the highest outsourcing performance. In addition, 5 cases with the lowest performance (bottom-performers) were excluded to create a sub-sample with 38 cases. Similar samples were created for the other risk profiles. For *uncooperative* risk profile, the

calibration sample included 3 cases and bottom performers included 8 cases. The resulting sub sample of 45 cases was used to create a misalignment score for this risk configuration. For *routine* risk profile, the calibration sample included 8 cases with highest performance. After removing the lowest performing 9 cases, the resulting sub sample of 44 cases were included in the sub-sample for this risk configuration. Finally, for the *high-risk* profile group, the calibration sample included 4 cases with highest performance. After removing the lowest performing 4 cases, the resulting sub sample for this group is 45 cases.

Outsourcing performance was regressed on the misalignment score for the cases belonging to the pooled sub-sample. Control variables were included in this regression as well. The regression analysis was conducted by introducing the control variables, main effects variables and the interaction term in a hierarchical manner. The results of the regression models are shown in Table 9.

Some important patterns emerge based on these results. The misalignment measure is negatively related to outsourcing performance, even in the presence of control variables. This shows support for hypothesis H1 that the deviation from an ideal profile of governance mechanisms will result in deterioration of outsourcing performance. The results also indicate that strategic importance did not directly influence outsourcing performance (i.e., main effect was not statistically significant). The interaction term was not significant either. The results indicate that the strategic importance of outsourcing engagement (i.e., core vs. peripheral) does not impact the relationship between outsourcing performance and the misalignment measure. Thus, hypothesis H2 was not supported. The implication of these results is that the deviation from the “ideal profile” results in deterioration in outsourcing performance but the strategic importance does not have an impact on outsourcing performance. The theoretical and managerial implications of

these results and important patterns of governance mechanisms for all the risk profiles are explored in the discussion section.

<i>Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Criticality	-	0.012	0.013
Outsourcing experience	-	0.101	0.100
Relationship length	-	-0.073	-0.072
Firm size	-	-0.060	-0.059
Cultural distance	-	-0.049	-0.049
Misalignment		-0.270^{***}	-0.277^{***}
Strategic Importance		0.124	0.124
Misalignment * Strategic Importance			0.015
R ²	-	0.106	0.106
F		2.786	2.427
ΔR^2		0.106	0.000
Change in F		2.786	0.033
d.f.		(7, 164)	(1, 163)
p-value (change)		0.009	0.855
Size of the group	182	182	182

† p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

Table 9 – Relationship between misalignment measure and performance

5.1.3 Learning outcomes

Similar analysis was conducted with learning outcomes as the dependent variable. First, the significant governance variables were assessed by regressing learning outcomes on the governance variables for each risk configuration separately. The regression equation is shown

below (equation 3). Stepwise regression was used to arrive at salient governance mechanisms. The results of this analysis for each risk configuration are shown in Table 10.

$$\begin{aligned}
 \text{Learning outcomes} = & \beta_1 * (\text{Monitoring}) + \beta_2 * (\text{Contract flexibility}) \\
 & + \beta_3 * (\text{Transaction-specific investments}) \\
 & + \beta_4 * (\text{Information exchange}) \\
 & + \beta_5 * (\text{Shared Understanding}) + \beta_6 * (\text{Criticality}) \\
 & + \beta_7 * (\text{Length of relationship}) + \beta_8 * (\text{Outsourcing experience}) \\
 & + \beta_9 * (\text{Firm Size}) + \beta_{10} * (\text{Cultural Distance}) \quad (3)
 \end{aligned}$$

The sample size for *unstable* risk configuration (low opportunism – high project uncertainty) group is 48. For this group, none of the governance mechanism variables were significantly related to learning outcomes. The sample size for *uncooperative* risk configuration (i.e., high opportunism – low project uncertainty) is 56. The results show that the salient governance mechanism for this risk profile is information exchange. In addition, relationship length (a control variable) is statistically significantly related to the learning outcomes. The R^2 is 0.281 indicating that the fit is good.

The sample size for *routine* configuration (low opportunism – low uncertainty) is 61. The results indicate that the salient governance mechanism for outsourcing engagements with *routine* risk profile is transaction specific investments. The R^2 is 0.097 and the F statistic is 6.367.

Finally, the sample size for *high-risk* configuration (high opportunism – high project uncertainty) is 53. The R^2 for this risk configuration is 0.319, indicating a good fit. The results indicate that transaction-specific investments and shared understanding are significantly related to learning

outcomes. In addition, cultural distance between the buyer and supplier is statistically significantly and negatively related to learning outcomes.

Similar analysis was conducted for the entire sample. The R^2 for the total sample is 0.203, indicating a good fit. The results indicate that transaction-specific investments, information exchange and shared understanding are positively related to learning outcomes. In addition, relationship length, a control variable, is positively related to learning outcomes as well.

<i>Risk group (Group Number)</i>	<i>N</i>	<i>R</i> ²	<i>F</i>	<i>Significant Independent Variables</i>	<i>Coefficient</i>	<i>Standardized Coefficient</i>	<i>t</i>
<i>Unstable (1)</i>	48	-	-	-	-	-	-
<i>Uncooperative (2)</i>	56	0.281	10.632 ^{***}	Constant	12.956		33.452
				Relationship length	1.236	0.367	3.087
				Information exchange	1.543	0.466	3.911
<i>Routine (3)</i>	61	0.097	6.367 [*]	Constant	13.742		38.814
				Transaction-specific investments	0.868	0.312	2.523
<i>High-risk (4)</i>	53	0.319	7.644 ^{***}	Constant	12.959		32.789
				Cultural distance	-1.158	-0.313	-2.614
				Shared understanding	1.084	0.394	3.319
				Transaction-specific investments	0.615	0.240	2.029
Total Sample	218	0.203	13.327 ^{***}	Constant	12.809		72.066
				Relationship length	0.474	0.163	2.645
				Information exchange	0.616	0.211	2.874
				Shared understanding	0.611	0.210	2.862
				Transaction-specific investments	0.558	0.192	3.098

† p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

Table 10 – Governance variables significantly related to learning outcomes

Similar to the profile deviation analysis for outsourcing performance, misalignment measure was calculated for all risk profiles using equation (4). In total, 131 cases were included in the pooled sample from the sub-samples for *uncooperative*, *routine* and *high-risk* profiles. The calibration sample for *uncooperative* risk profile included 7 cases with highest learning outcomes. After removing the lowest performing 6 cases, the resulting sub sample of 43 cases was used to calculate the misalignment score. The calibration sample for *routine* risk profile included 8 cases with highest performance. After removing the lowest performing 6 cases, the resulting sub sample of 47 cases was used to calculate misalignment score for *routine* configuration. The calibration sample for *high-risk* profile included 5 cases with highest performance. After removing the lowest performing 7 cases, the resulting sub sample of 41 cases was used to calculate the misalignment score for *high-risk* configuration.

$$\text{MISALIGN}_2 = \sum_{j=1}^n \left(b_j (X_{sj} - \bar{X}_{cj})^2 \right) \quad (4)$$

Where,

b_j = standardized weights of significant governance variables from equation (3)

$\bar{X}_{cj}$ = average score of the calibration sample (i.e. high performers) for each governance variable

X_{sj} = score for each of the study sample for each governance variable

The pooled sample was used to regress learning outcomes on the misalignment measure. Control variables were included in this regression as well. The regression analysis was conducted by introducing the control variables, main effects variables and the interaction term in a hierarchical manner. The results of the regression models are shown in Table 11.

The patterns emerging from the results of the analysis are as follows. The misalignment measure is negatively related to learning outcomes but it is significant only at $p < 0.1$. This shows support for hypothesis H3 that the deviation from an ideal profile of governance mechanisms will result in deterioration in the learning outcomes gained from the outsourcing engagement. It has to be observed that this relationship is not strong as in the case of the relationship between misalignment and outsourcing performance. Strategic importance of the outsourcing engagement is not related to the learning outcomes gained from the outsourcing engagement (i.e., main effects of strategic importance on learning outcomes is not statistically significant). The interaction term is not statistically significantly related to learning outcomes. The results indicate that the context of outsourcing engagement (i.e., core vs. peripheral) is not a factor in determining the fit between governance mechanism and learning outcomes gained from the outsourcing engagement. Thus, hypothesis H4 is not supported.

Variables	Model 1	Model 2	Model 3
Criticality	-	-0.055	-0.050
Outsourcing experience	-	0.058	0.070
Relationship length	-	0.127	0.114
Firm size	-	-0.032	-0.029
Cultural distance	-	0.067	0.066
Misalignment		-0.159[†]	-0.164[†]
Strategic Importance		0.069	0.068
Misalignment * Strategic Importance			0.123
R ²	-	0.055	0.070
F		1.030	1.153
ΔR^2		0.055	0.015
Change in F		1.030	1.961
d.f.		(7, 123)	(1, 122)
p-value (change)		0.414	0.164
Size of the group	131	131	131

[†] p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

Table 11 – Relationship between misalignment measure and learning outcomes

5.2 Fit as gestalts

Venkatraman (1989) argues that there are six forms of fit – moderation, mediation, matching, covariation, profile deviation and gestalts. Fit as gestalts represents the “degree of internal coherence among a set of theoretical attributes” (Venkatraman, 1989, p. 432). Using this methodology, governance mechanisms that are used in outsourcing engagements are identified. Furthermore, these sets of governance mechanisms are examined for their effectiveness in managing outsourcing engagements. It is hypothesized that there is a specific governance configuration that corresponds to the relationship configuration (i.e., configuration based on the level of supplier *ex post* opportunistic behavior and the strategic importance of the outsourcing engagement). Strategic importance of an outsourcing engagement was assessed based on a one item question that asked the respondents to classify their outsourcing engagement based on its direct impact on revenue. The outsourcing engagements were classified as “core” when the activities outsourced had a direct impact on the revenue of the firm. The frequencies of standardized score for supplier *ex post* opportunistic behavior were used to split the samples in quartiles. The top quartile (25%) with high supplier *ex post* opportunism was classified as experiencing high levels of relational risk. Similarly, the bottom quartile (25%) was classified into low relational risk category. The relationship configurations and corresponding mean and standard deviation of supplier *ex post* opportunism is shown in Table 12 below.

<i>Configuration</i>	<i>Dimensions</i>		<i>Frequency</i> (n = 218)	<i>Percentage</i> (100%)
	Strategic Importance	<i>ex post</i> Opportunism		
Strategic partnership	Core	Low (6.38, 0.49)	32	14.68%
Adversarial relationship	Core	High (18.17, 3.06)	24	11.01%
Arm's length relationship	Peripheral	High (18.35, 3.03)	28	12.84%
Selective partnership	Peripheral	Low (6.31, 0.47)	26	11.93%
Other configurations	-	-(11.27, 2.12)	108	49.5%

Table 12 – Frequencies, percentages of relationship configurations

Cluster analysis (K-means clustering) was performed to group the sample into governance configurations based on the governance mechanisms used in the outsourcing engagement. Literature has suggested many methods of standardizing the parameters before clustering (G. W. Milligan & Cooper, 1988). In accordance with prior literature, standardized scores for each construct were used before the data was subjected to cluster analysis (J. Miller & Roth, 1994).

Assessing the number of clusters is a “thorny issue” (Laseter & Ramdas, 2002, p. 113; J. Miller & Roth, 1994, p. 290). Three criteria were used to arrive at the number of clusters. First, the number of clusters was limited to between $n/60$ and $n/30$, where n is the sample size (Lehman, 1979). Based on these criteria, the appropriate number of clusters should be between 4 clusters and 7 clusters. Second, managerial interpretability of the clusters was sought using ANOVA and Scheffe pairwise comparison tests of mean differences (Harrigan, 1985) was used to arrive at the number of clusters. Finally, pseudo-F statistic was used to assess the “best fitting” cluster solution. G. Milligan and Cooper (1985) assessed multiple indices and found that Calinski – Harabasz index (pseudo-F statistic) is the most reliable.

Four solutions were evaluated with number of clusters between 4 and 7. The pseudo-F statistic for the four cluster solutions (pseudo-F = 52.32) was higher than the other cluster solutions (5 cluster solution = 48.73; 6 cluster solution = 47.31 and 7 cluster solution = 44.52). Four cluster solution best satisfied the criteria. The resulting clusters were examined based on the mean values of each governance mechanisms. The clusters, cluster mean, sample mean and sample median values are provided for each governance mechanisms in the Table 13.

<i>Governance Mechanism[*]</i>	<i>Sample Median</i>	<i>Sample Average</i>	<i>Cluster 1</i>	<i>Cluster 2</i>	<i>Cluster 3</i>	<i>Cluster 4</i>
Shared Understanding	11.000	10.505	9.372	11.481	12.028	7.743
Information exchange	15.000	15.092	14.187	15.727	16.881	11.886
Transaction-specific investments	8.000	7.309	7.889	6.233	8.198	6.038
Contract flexibility	10.000	10.123	10.239	9.465	11.311	8.375
Monitoring	16.000	15.865	16.629	14.255	17.878	12.686
Cluster size	218	218	58	51	74	35
Cluster type			Contract-dominant	Relation-dominant	Hybrid Governance	Minimal Governance

* Non-standardized summated values are shown in this table

Table 13 – Results of cluster analysis on governance mechanisms

Some interesting patterns emerge as part of the cluster analysis. First, the clusters obtained correspond to the theoretical arguments presented for governance configurations. Cluster 1 (N = 58) corresponds to *contract-dominant* cluster. Outsourcing engagements in this cluster predominantly use transactional governance to manage the relationship. Cluster 2 (N = 51) corresponds to *relation-dominant* governance configuration. Consequently, the outsourcing engagements predominantly use relational governance mechanism to manage the relationship. Cluster 3 (N = 74) corresponds to *hybrid* governance where the outsourcing engagements use

both transactional and relational governance mechanisms with high intensities. Finally, cluster 4 (N = 35) corresponds to minimal (fee-for-service) governance. The intensity of usage of both transactional and relational governance is low for this governance configuration.

The Scheffe pair-wise comparison tests revealed the following results about the governance configurations. The results show that the outsourcing engagements in cluster 3 (*hybrid* governance) exhibit highest intensities of governance with respect to all governance mechanism with two exceptions. First, the intensity of shared understanding implemented by the outsourcing engagements in *hybrid* governance is higher than *relation-dominant* cluster but it is not statistically significant. Second, the intensity of transaction-specific investments implemented by the outsourcing engagements in *hybrid* governance cluster are higher than *contract-dominant* cluster but it is not statistically significant. The outsourcing engagements in the *contract-dominant* governance cluster exhibit lower intensities of relational governance mechanisms in comparison to *relation-dominant* and *hybrid* governance clusters but higher than *minimal* governance cluster. The intensities of transactional mechanisms are higher than all other clusters and they are statistically significantly different from all clusters except *hybrid* governance cluster. The observations in the *relation-dominant* cluster exhibit higher intensities of relational governance mechanisms in comparison to all other clusters. For this cluster, the intensities of transactional mechanisms are higher than *minimal* governance cluster but lower than both *contract-dominant* and *hybrid* governance clusters. Finally, the outsourcing engagements in the *minimal* governance cluster use lower intensities of both transactional and relational governance mechanisms than all other clusters. Collectively, these observations show support for the existence of hypothesized governance clusters based on transactional and relational governance mechanisms.

5.2.1 Relating the gestalts to Outsourcing performance

To assess the predictive validity, a dichotomous variable was constructed as fit variable based on gestalts and non-gestalts for each relationship configuration. The observations corresponding to the gestalt were classified as “Match” (i.e., a match between the relationship configuration and governance configuration) and the value for the dichotomous variable was set to one. The other governance configurations were classified as “Mismatch” (i.e., the value for the dichotomous variable was set to zero). The outsourcing performance corresponding to the gestalts and non-gestalts were compared using a t-test for statistical significance. The results of comparison of outsourcing performance for each relationship configuration are discussed below.

5.2.1.1 Strategic partnership

The governance configuration corresponding to *strategic partnership* is shown in Table 14. The data provide support to the argument that outsourcing engagements with lower supplier *ex post* opportunism and high strategic importance tend to choose hybrid governance to manage the outsourcing relationship. In this relationship configuration, most number of outsourcing engagements chose to use a hybrid form of governance. When the outsourcing performance of the gestalts and non-gestalts are compared, the results show that hybrid governance outperforms other governance configurations but the results are not statistically significant at $p < 0.05$. Thus, hypothesis H5 is not supported.

Governance configuration	Frequency (N = 32)	Outsourcing performance		Match
		Average	Std. Dev.	
Hybrid governance	19	17.26	1.41	Yes
Relation-dominant governance	8	17.34	2.43	No
Contract-dominant governance	2	16.37	2.31	No
Minimal governance	3	15.91	1.14	No

Table 14 – Governance configuration for Strategic partnership

5.2.1.2 Adversarial relationship

The governance configuration corresponding to *adversarial relationship* is shown in Table 15. The data provide support to the argument that outsourcing engagements with higher supplier *ex post* opportunism and high strategic importance chose *contract-dominant* governance to manage the outsourcing relationship. In this relationship configuration, most number of outsourcing engagements chose to use *contract-dominant* governance. The results also show that many outsourcing engagements chose to use *minimal* governance strategy. When the outsourcing performance of the gestalts and non-gestalts are compared, the results show that *contract-dominant* governance outperforms other governance configurations and the results are statistically significant at $p < 0.05$. Thus, hypothesis H6 is supported.

Governance configuration	Frequency (N = 24)	Outsourcing performance		Match
		Average	Std. Dev.	
Hybrid governance	4	12.43	1.60	No
Relation-dominant governance	3	13.57	1.41	No
Contract-dominant governance	9	13.75	1.17	Yes
Minimal governance	8	11.5	2.39	No

Table 15 – Governance configuration for Adversarial relationship

5.2.1.3 Arm's length relationship

The governance configuration corresponding to *arm's length relationship* is shown in Table 16. In this relationship configuration, most number of outsourcing engagements chose to use either *minimal* or *contract-dominant* governance, providing support to the theoretical arguments made earlier. When the outsourcing performance of the gestalts and non-gestalts are compared, the results show that *relation-dominant* governance outperforms other governance configurations and the results are statistically significant at $p < 0.05$. This result is counter to the hypothesized relationship. Thus, the support for hypothesis H7 is reversed. The implications of these findings will be discussed in the subsequent discussion section.

Governance configuration	Frequency (N = 28)	Outsourcing performance		Match
		Average	Std. Dev.	
Hybrid governance	0	-	-	-
Relation-dominant governance	3	14.91	3	No
Contract-dominant governance	12	12.29	2.59	Yes
Minimal governance	13	11.31	2.29	Yes

Table 16 – Governance configuration for Arm's length relationship

5.2.1.4 Selective partnership

The governance configuration corresponding to *selective partnership* is shown in Table 17. In this relationship configuration, most number of outsourcing engagements chose to use *hybrid* governance which is counter to the theoretical arguments made earlier. In addition, many outsourcing engagements chose *relation-dominant* governance as well. The outsourcing performance for relation-dominant configuration was not statistically significantly different than other configurations at $p < 0.05$. Thus, hypothesis H8 was not supported.

Governance configuration	Frequency (N = 26)	Outsourcing performance		Match
		Average	Std. Dev.	
Hybrid governance	13	17.21	1.33	No
Relation-dominant governance	12	16	2.45	Yes
Contract-dominant governance	0	-	-	No
Minimal governance	1	14	-	No

Table 17 – Governance configuration for Arm's length relationship

The overall results of the data analysis for gestalts are shown in Table 18.

<i>Relationship configuration</i>	<i>Gestalt</i>	<i>Non-Gestalt</i>	<i>t-value</i>	<i>Support</i>
Strategic partnership	17.263	16.861	0.646	Not supported
Adversarial relationship	13.748	12.164	2.070	Supported
Arm's length relationship	11.778	14.91	-1.738	Reversed
Selective Partnership	16	16.98	-1.198	Not supported

Table 18 – Gestalts data analysis results

5.3 Summary of analysis and results

This chapter presented the data analysis process to find support for the research framework presented in this dissertation. Results of the data analysis were presented that found general support for the research framework. The summary of the hypotheses and their support is presented in Table 20 below. The results make both theoretical and managerial knowledge contributions. These contributions are discussed in detail in the next chapter.

	Hypothesis	Supported?
H1	Fit as profile deviation → Outsourcing performance	Yes
H2	Fit as profile deviation → Learning outcomes	Yes
H3	Fit as profile deviation * Strategic importance → Outsourcing performance	No
H4	Fit as profile deviation * Strategic importance → Learning outcomes	No
H5	Strategic partnership - Hybrid governance Gestalt → Outsourcing performance	No
H6	Adversarial relationship - Contract-dominant Gestalt → Outsourcing performance	Yes
H7	Arm's length relationship - Minimal governance Gestalt → Outsourcing performance	Reversed
H8	Selective partnership - Relation-dominant Gestalt → Outsourcing performance	No

Table 19 – Summary of hypotheses and their support

CHAPTER 6: DISCUSSION

In this chapter, both the theoretical and the managerial insights gained from this research are discussed. The first section will discuss the contributions to buyer-supplier relationship literature. Following this, the managerial implications are discussed.

6.1 Knowledge of buyer-supplier relationships

Firms are outsourcing tasks to not only reduce cost but also gain capabilities (Gottfredson et al., 2005; Holcomb & Hitt, 2007). Researchers have argued that it is important to effectively manage outsourcing relationships to gain benefits. Increasingly, researchers have called for the use of both transactional as well as relational governance mechanisms (Handley & Benton Jr, 2009; Li et al., 2010; Liu et al., 2009; Tangpong et al., 2010). There is consensus among researchers that firms should use both transactional and relational governance mechanisms. This research expands our understanding by examining the effectiveness of transactional and relational governance mechanisms by taking into account two forms of risks – supplier *ex post* opportunism and project uncertainty. In addition, this dissertation also examines the effectiveness of governance mechanisms for different relationship configurations. Finally, this dissertation answers the question of whether transactional and relational governance mechanisms are complements or substitutes.

6.1.1 Fit as profile deviation

In this dissertation, the key question that is addressed is that the effective configuration of governance mechanisms is dependent on the risks faced by the outsourcing engagement. Whereas numerous studies have argued for the importance of different governance mechanisms,

few have examined the fit between the risks faced by an outsourcing engagement and the corresponding governance mechanisms that result in superior performance.

In this dissertation, two main sources of risk were examined - relational and project (Jap & Anderson, 2003; Nidumolu, 1995). Theoretical arguments were presented for classification of outsourcing engagements into four risk profiles and subsequently empirical support was shown for the theoretical arguments. These risk profiles are classified as *routine*, *unstable*, *uncooperative* and *high-risk* configurations. In addition, in this dissertation it is argued that the effective configuration of governance mechanisms will be different for different risk profiles. The results of the analysis using fit as profile deviation is presented. First, the results of the analysis for each risk configuration are presented. Following this, the overall results of the test of relationship between the misalignment measure and performance is discussed. The discussion is presented for both outsourcing performance and learning outcomes.

6.1.1.1 Results for outsourcing performance

The results of the analysis with outsourcing performance as the dependent variable are discussed in this subsection.

First let us consider *routine* outsourcing engagements. The results of the analysis showed that only information exchange is statistically significantly related to outsourcing performance. Outsourcing engagements with routine risk configuration are characterized by low project uncertainty and low supplier *ex post* opportunism. With a cooperative supplier, the relationship quality is high and the level of monitoring required to manage the outsourcing engagement is low. Furthermore, there is little need for renegotiating the contract because the requirements of the project are relatively stable. In a routine outsourcing engagement, few changes need to be

addressed. Through information exchange, buyer and supplier can exchange information and resolve any changes that may be required during the course of the outsourcing engagement. Interestingly, one of the control variables, cultural distance, is statistically significantly related to outsourcing performance. The results corroborate the results from literature that argue that when cultural distance is high, buyer and the supplier can experience inefficiencies in information exchange resulting in lower outsourcing performance.

Now let us consider outsourcing engagements with *uncooperative* supplier. The requirements of the outsourcing engagement are stable but the relationship quality is affected by the supplier *ex post* opportunistic behavior. Few studies have specifically considered supplier *ex post* opportunistic behavior when examining buyer-supplier relationship. Jap and Anderson (2003) examined buyer supplier relationships in the presence of supplier *ex post* opportunism and found that at high levels of opportunism, goal congruence acts as a safeguard whereas interpersonal trust becomes less effective. This study adds to their findings and shows that information exchange can facilitate superior outsourcing performance. Liu et al. (2009) found that relational norms have a positive influence on buyer-supplier relationship performance. This dissertation generally corroborates their finding and adds further clarity by showing that information exchange between buyer and supplier can result in better outsourcing performance when the supplier is uncooperative.

For the unstable risk configuration, shared understanding is the key driver of outsourcing performance. Project uncertainty is related more to the clarity of requirements that is internal to the buyer. In addition, there is lack of clarity of tasks that needed to be executed that results in lower outsourcing performance. Through shared understanding, the buyer and supplier can quickly resolve any disagreements that arise out of project uncertainty. Furthermore, the buyer

and supplier can quickly agree on the new developments and information that are discovered as part of project execution.

Finally, consider the *high-risk* configuration. In this risk configuration, outsourcing engagements experience high levels of both project risk and relational risk. Agency theory (Eisenhardt, 1989) has argued that the supplier has a higher propensity to exhibit opportunism (moral hazard) in the presence of uncertainty. Interestingly, the results of the analysis showed that the fit of the model is strongest for this risk configuration. The statistically significant governance mechanisms include shared understanding and information exchange. Interestingly, contract flexibility is negatively related to outsourcing performance. The results corroborate some findings in literature but also contradict others. Prior studies have argued for the importance of relational governance mechanisms. Specifically, studies have argued that firms develop relational competence through information exchange and shared understanding (Paulraj et al., 2008). Furthermore, researchers have argued that relational governance mechanisms can positively influence performance (Li et al., 2010; Liu et al., 2009; Nyaga et al., 2010). The results of the analysis corroborate their findings to suggest that relational mechanisms such as information exchange and shared understanding are critical to outsourcing performance, especially when the outsourcing engagement faces high levels of relational and project risk. High performing outsourcing engagements seem to invest the time and effort to overcome both forms of risk. Finally, contrary to prior literature (e.g., N. S. Argyres et al., 2007; Mayer & Argyres, 2004) the results of the analysis show that contract flexibility is negatively related to outsourcing performance. A possible explanation for this finding is that contract flexibility may provide little help when the buyer lacks clarity of requirements. When the buyer is unclear of the requirements or lacks consensus, it is difficult to enforce a clear rubric to evaluate the supplier. Lack of clarity

combined with supplier opportunistic behavior can create further confusion resulting in deterioration of outsourcing performance.

The relationship between the misalignment measure and outsourcing performance is statistically significant and negative. This result corroborates the arguments made in this research that a deviation from the ideal profile will negatively influence the outsourcing performance. The interaction between the misalignment measure and strategic importance of the outsourcing engagement is not statistically significant. The results indicate that the deviation from ideal profile can deteriorate performance but it is not different for strategic and non-strategic (i.e., core vs. peripheral) outsourcing engagements. One possible explanation is that outsourcing performance is primarily related to the project management attributes (i.e., cost, time and scope performance). These metrics are not different for strategic or non-strategic engagements.

6.1.1.2 Results for learning outcomes

In this section, the results of the analysis with learning outcomes as dependent variables are discussed. As in the previous section, the results for each risk configuration are discussed before the results for the misalignment measure are discussed.

In a *routine* outsourcing engagement, both project and relational risk are low. That is, the supplier is cooperative and the outsourcing engagement has clarity of goals that need to be achieved. The team members have knowledge of the actions that need to be taken and the priorities of the tasks are known. Interestingly, the only governance mechanism that is statistically significantly related to learning outcomes is transaction-specific investments. Studies have shown that transaction-specific investments result in lowered opportunistic behavior from the supplier (e.g., Jap & Anderson, 2003; Nyaga et al., 2010). In this dissertation, transaction-

specific investments were operationalized as intangible investments such as upfront time spent in understanding the problem. Through the process of investing time upfront, the buyer can learn new knowledge that may be applied to other projects.

Project uncertainty is high in outsourcing engagements characterized by *unstable* risk configuration. The supplier is cooperative and may work with the buyer to ensure that the requirements are clear and the priorities of the tasks are set appropriately. Interestingly, in this risk profile, none of the governance mechanisms increased the learning outcomes of the buyer.

Outsourcing engagements with *uncooperative* risk configuration predominantly encounter relational risk due to supplier *ex post* opportunism. The supplier's actions are not always toward the best interests of the buyer. Hence, the buyer may not be able to capitalize on the relationship to gain new capabilities. Interestingly, the results show that information exchange is statistically significantly related to learning outcomes gained from the outsourcing engagement with *uncooperative* risk configuration. Information exchange is positively related to learning outcomes. Through continued information exchange with the supplier, the buyer is able to acquire knowledge that can be used to improve the overall capabilities.

Finally, consider the outsourcing engagements in the *high-risk* configuration. The outsourcing engagements with this risk profile experience high levels of both project and relational risk. The results show that shared understanding and transaction-specific investments are related to the learning outcomes. In addition, cultural distance is also negatively related to learning outcomes. One possible explanation for the significance of transaction-specific investments to be related to outsourcing performance is the level of effort that the buyer expends in ensuring that the outsourcing engagement is executed well. In the long-run, these efforts pay

off and the buyer may experience an improvement in the overall capabilities. In addition, through shared understanding the buyer is able to gain additional knowledge from the outsourcing engagement.

The relationship between misalignment measure and learning outcomes is negative and statistically significant. The results indicate that when firms deviate from the ideal profile, they experience deterioration in the learning outcomes gained from the outsourcing engagement. The interaction term between learning outcomes and strategic importance is not statistically significantly related to learning outcomes. The strategic importance of outsourcing engagement does not have a bearing on the learning outcomes gained from the outsourcing engagements.

6.1.2 Fit as gestalts

Previous section presented the results of the analysis using fit as profile deviation. In this section, the results of the analysis using fit as gestalts are discussed. In this dissertation, it was argued that fit as profile deviation has some limitations. Mainly, the ideal profile may not be readily applicable to any one outsourcing engagement. Instead, it is a “theoretical construct” that provides an understanding of the governance mechanisms associated with better performance for different risk profiles. In contrast, fit as gestalts are developed based on theoretical arguments but are corroborated using the actual set of governance mechanisms used in managing the outsourcing engagements. This discussion will present the findings from the analysis using fit as gestalts.

First consider the *strategic partnership* between the buyer and the supplier. Activities outsourced by buyers in this relationship configuration are strategic in nature. In addition, the relationship quality of the engagement is high because supplier *ex post* opportunism is low. The

results show that majority of the outsourcing engagements used hybrid governance mechanisms. That is, the outsourcing engagements deployed both transactional and relational governance mechanisms with high intensity. Interestingly, the comparison of outsourcing performance did not yield any significant differences in performance. One explanation is that about 25% of the firms (N=8) in this relationship configuration relied on relational governance. Post-hoc analysis was conducted by pooling outsourcing engagements with hybrid and relation-dominant governance. The results indicate that the outsourcing performance of the engagements with these governance configurations outperformed the outsourcing engagements that relied on *contract-dominant* or *minimal* governance ($p < 0.10$). This finding lends support to the arguments made in the literature for the importance of relational governance mechanisms (Handley & Benton Jr, 2009; Li et al., 2010; Liu et al., 2009). Furthermore, the results indicate that the argument for transactional and relational governance mechanisms being complements is not supported.

In an *adversarial relationship* configuration, the buyer has outsourced activities that are strategic in nature but the supplier is not cooperative (i.e., exhibits high level of *ex post* opportunistic behavior). The data lends support to the theoretical argument that *contract-dominant* governance is best suited to manage outsourcing engagements in this relationship configuration ($p < 0.05$). Interestingly, the results show that many firms utilized *minimal* governance in managing their outsourcing engagements. One possible explanation is that buyers may disengage from the supplier when the supplier behaves in an opportunistic manner. The results lend support to the argument that *contract-dominant* governance is best suited to manage *adversarial relationships*. These results corroborate the argument by (Jap & Ganesan, 2000) that transactional governance mechanisms are better suited to curb supplier opportunism.

Now consider the *arm's length relationship* configuration. Outsourcing engagements in this configuration have outsourced activities that are peripheral in nature. In addition, the supplier is exhibiting *ex post* opportunistic behavior. The results support the theoretical argument that the firms will use either *minimal* governance or *contract-dominant* governance configurations. Interestingly, the results showed that outsourcing engagements that used *relation-dominant* governance experienced superior outsourcing performance in comparison to outsourcing engagements using either *contract-dominant* or *minimal* governance. Whereas this result is counter to the expected results, it provides support to the importance of relational governance mechanisms when managing an outsourcing engagement.

Finally, consider the *selective partnership* configuration. The outsourcing engagements in this configuration have outsourced peripheral activities. In addition, the suppliers are cooperative and do not exhibit high levels of *ex post* opportunistic behavior. The results lend support that many of the outsourcing engagements utilized *relation-dominant* governance. Contrary to expectations, the results also indicate that a vast majority of the outsourcing engagements employed *hybrid* governance. Interestingly, the results did not provide support to the argument that *relation-dominant* governance is best suited to manage the outsourcing engagements when pursuing selective partnership. Instead, the results indicate that the performance of the firms employing *hybrid* and *relation-dominant* governance are equivalent and not statistically significantly different. These results again demonstrate the importance of relational governance mechanisms but do not support the argument that relational and transactional governance mechanisms are complementary.

6.1.3 Theoretical implications

Prior subsections discussed the results of the analysis from this dissertation. In this subsection, the overall implications to buyer-supplier relationship literature are presented.

In this study, multiple theoretical perspectives were used to examine the use of appropriate governance mechanisms in the presence of opportunism and project uncertainty. Specifically, Transaction cost economics (Coase, 1937; Williamson, 1979, 1981; Williamson, 1985), Agency theory (Eisenhardt, 1989) and relational norms (Heide & John, 1992; MacNeil, 1980) were used to identify governance mechanisms and theoretical arguments were used to identify configurations of governance mechanisms that best mitigate the influence of risk in outsourcing engagements. Many researchers have argued for the importance of using multiple theories in examining research questions. Through this approach a richer understanding of the phenomenon is achieved. For example, (McIvor, 2009) used transaction cost economics and resource-based view to argue that the theoretical lenses converged under certain conditions but diverged in other conditions. Increasingly, there have been calls to examine buyer-supplier relationships using multiple theoretical perspectives, especially the use of transactional and relational perspectives (Li et al., 2010; Liu et al., 2009). This research attempts to answer this call for multi-theoretic view of examining outsourcing engagements by considering both transactional and relational governance mechanisms in examining effective governance of outsourcing engagements.

One key research question that was asked in this dissertation is if transactional and relational governance mechanisms act as complements or substitutes. A big picture view provides clarity and ability to answer this question. Transactional and relational governance

mechanisms can be considered substitutes if both are equally effective, under different risk conditions. On the other hand, they can be considered complements if one set of mechanisms is better suited under some conditions but other set is better suited under different conditions. Based on the overall results from this research, it can be argued that transactional and relational governance mechanisms act as complements to each other. Both transactional and relational governance mechanisms generally seem to have a positive impact on outsourcing performance. When the supplier is cooperative, as in *strategic partnership* and *selective partnership* configurations, the use of relational governance mechanism resulted in superior outsourcing performance. The use of transactional governance mechanisms in conjunction with relational governance mechanisms (i.e., hybrid governance) does not seem to provide any additional benefits. Conversely, when the supplier is uncooperative (i.e., opportunistic), the results seem to diverge based on the strategic nature of the outsourcing engagements. When the outsourcing engagements are strategic in nature (i.e., *adversarial relationship* configuration), the use of transactional governance mechanism is beneficial over the use of relational governance mechanism or hybrid governance. In contrast, when the outsourcing engagement is not strategic in nature (i.e., *arm's length relationship* configuration), the use of relational governance mechanism seems to provide superior outsourcing performance. These results provide evidence that transactional and relational governance mechanisms are complements to each other and the governance mechanisms need to be appropriately deployed based on the strategic nature and the opportunism encountered in the outsourcing engagement.

The insights gained from this research address a gap in the literature. Whereas researchers have addressed the effectiveness of transactional governance and relational governance in governing outsourcing engagement, very few studies have examined both sets of

governance in conjunction (Li et al., 2010; Liu et al., 2009). This research addresses this gap in the literature and examines the effectiveness of both transactional and relational governance mechanisms. Furthermore, this research answers the question whether transactional and relational governance mechanisms are complements or substitutes.

6.2 Managerial insights

In this section, the managerial insights that are gained from this dissertation are presented. Insights are drawn from both fit as profile deviation results and fit as gestalts results.

6.2.1 Fit as profile deviation

Using fit as profile deviation, the effective governance mechanisms that influence outsourcing performance and learning outcomes were examined. Literature has highlighted governance mechanisms that can be utilized to manage the buyer-supplier relationships (Handley & Benton Jr, 2009; Li et al., 2010; Liu et al., 2009; Paulraj et al., 2008). Consistent with the findings in the literature, this dissertation expected that transactional and relational governance mechanisms will have a positive influence on outsourcing performance. The contribution of this dissertation, however, is in examining the effectiveness of these governance mechanisms in the presence of risk.

Two main risks were considered. First, primary risk in the form of “uncertainty of state” (Sutcliffe & Zaheer, 1998) was conceptualized as project uncertainty. Literature has shown that lack of clarity of requirements, inability to anticipate issues and the inability to prioritize tasks have been shown to impede superior outsourcing performance. Second, very few researchers have considered supplier opportunism in buyer-supplier relationships. Koopmans (1957) characterized this risk as secondary uncertainty. In particular, very few studies have considered *ex post* opportunism exhibited by the supplier. This risk is considered moral hazard where the supplier exhibits behaviors such as shirking that impede the ability of the buyer to fully engage with the supplier.

This research provides direction to managers in instituting governance mechanisms that foster a virtuous-cycle of cooperation rather than vicious-cycle of negative behavior. Furthermore, the research shows that reliance on transactional mechanisms alone will not result in superior outsourcing performance. In particular, the buyer should institute governance mechanisms that foster shared values. Regular information exchange with the supplier is particularly important to improve outsourcing performance, especially when the supplier is uncooperative. In addition, developing a shared understanding with the supplier where the partners proactively resolve any misunderstanding has been shown to be consistently related to outsourcing performance.

6.2.2 Fit as gestalts

The results of the analysis using fit as gestalts are discussed in this subsection. Typically, managers face the challenge of identifying appropriate governance mechanisms that act as levers providing superior outsourcing performance. In this dissertation, outsourcing engagements were classified into four relationship configurations - *strategic partnership*, *selective partnership*, *arm's length relationship* and *adversarial relationship*. This provides a framework for the managers to apply the findings from this dissertation.

The results indicate that relational governance mechanisms provide benefits irrespective of the nature of the engagement except when the buyer is in an *adversarial* relationship. This provides an important insight to the managers that they should start developing shared values with their supplier. Engaging the supplier through information exchange and joint problem solving through shared understanding provides benefits that can be translated to superior

outsourcing performance. Use of transactional mechanisms, such as monitoring and contingency planning, provides marginal benefits and at times is counter-productive.

CHAPTER 7: CONCLUSION

In this section, the summary of this dissertation is presented. In this summary, the background, the hypotheses, methodology, findings and implications for research are discussed. The limitations and future research that can extend from this dissertation are discussed in the subsections following the summary.

7.1 Summary of research

Following the increase in outsourcing activity to India and China, research on governing outsourcing engagements has increased in prominence in recent years. Numerous researchers have examined the *ex ante* decisions leading to outsourcing activities to suppliers as well as *ex post* governance of outsourcing engagements (e.g., Aron et al., 2008; Balakrishnan et al., 2008; Handley & Benton Jr, 2009; Li et al., 2010; Liu et al., 2009; Tangpong et al., 2010). In addition, researchers have argued for the importance of risk in buyer-supplier relationships (Jap & Anderson, 2003; Nidumolu, 1995). However, few studies have examined the impact of risk and governance mechanisms in buyer-supplier relationships simultaneously. In particular, project uncertainty and supplier *ex post* opportunism, deemed as primary and secondary sources of risk (Koopmans, 1957), have not been examined in-depth. This dissertation proposed a research framework that explicitly takes both forms of risk into account and examines the effectiveness of governance mechanisms on the success of the outsourcing engagements.

Buyer-supplier relationship literature and marketing channels literature were used to examine commonly used governance mechanisms by managers. These governance mechanisms were broadly classified into transactional and relational governance mechanisms. Furthermore,

literature on strategic management and fit was utilized to argue that fit as gestalts and fit as profile deviation should be used to examine the research questions in this dissertation.

To find support for the research framework, a web survey methodology was used to collect data. Sampling frame consisted of members belonging to two organizations, Project Management Institute (PMI) and International Association of Outsourcing Professionals (IAOP). The members of these organizations were invited to participate in the survey and interested members were sent a link to the survey. Data were collected over a six week period. Methodology suggested by (Dillman, 1978; Dillman et al., 2008) was used to ensure that the survey instrument was developed, validated and administered correctly. Additional data validation procedures were used to ensure convergent validity, discriminant validity and reliability. Multiple regression, cluster analysis, t-tests were used to test the models and draw inferences.

The findings from the data analysis were original and provide new insights to buyer-supplier relationships, in particular outsourcing engagements. The findings from fit as profile deviation analysis suggest that there are different configurations of effective governance mechanisms for different configurations of risks. The findings from fit as gestalts analysis suggests that there are sets of governance mechanisms that occur in a congruent manner based on the relationship configuration. The implication of these findings is that managers should deploy different governance mechanisms based on the nature of the risks and the relationship configuration corresponding to their outsourcing relationship. The implications to researchers are two-fold. First, the findings from this dissertation demonstrate that both transactional and relational governance mechanisms are effective under different conditions of risk and nature of relationships. Second, a broad conclusion can be drawn that transactional and relational

governance mechanisms are not substitutes. Rather, relational governance mechanisms complement transactional governance mechanisms and provide higher relational-rents from outsourcing engagements.

7.2 Limitations of study

All research studies have limitations and this dissertation is no exception. First, this study relies on single respondent for both antecedent and dependent variables. Research has shown that this can potentially cause common method bias (CMB). Although precautions were taken by placing the items corresponding to dependent variable far away from the items corresponding to antecedent constructs in the survey, there is still a potential for CMB. Second, fit as profile deviation is a methodology driven by data. There are potential limitations in generalizing the findings from this analysis. There is a potential that the findings may change when the data used to analyze the model is different. This limitation has to be taken in to consideration along with the findings from this analysis. Finally, there were measurement issues with some constructs. The indices for discriminant validity for contract flexibility and information exchange are lower than threshold values suggested in literature (Fornell & Larcker, 1981). Adequate precautions were taken to ensure that other less conservative thresholds were met. Notwithstanding these limitations, the dissertation makes valuable contributions to the literature on buyer-supplier relationships. Potential future research that can be pursued after this dissertation are discussed in the next section.

7.3 Future research

Multiple avenues of research can be pursued that extend the findings from this research. First, additional governance mechanisms that impinge on the success of an outsourcing engagement should be explored. This research utilized transaction cost economics, agency theory and relational norms perspective to examine governance of outsourcing engagements. Other theoretical perspectives may bring forth governance mechanisms that were not considered in this research. For example, social exchange theory (Emerson, 1962; Homans, 1958) and social capital theory (Nahapiet & Ghoshal, 1998) have the potential to provide additional insights on governance mechanisms in outsourcing engagements. Specifically, these theories can be utilized to map the importance of different governance mechanisms over the lifecycle of the relationship.

Second, research can be pursued to examine the inter-linkage between complexity of an outsourcing engagement and the opportunistic behavior exhibited by the supplier. Specifically, researchers have argued that complexity dimensions such as geographical location and interconnectedness can hinder the ability of the buyer to ensure compliance from suppliers, especially suppliers that are further upstream and away from the customers. Governance mechanisms that address not only the first-tier supplier but also suppliers further upstream can be examined to generate additional insights that are valuable to both researcher and practitioner communities.

Finally, opportunism has been considered as a monolithic construct. There have been attempts made by some researchers to provide a nuanced understanding of this construct. For example, Wathne and Heide (2000) attempt to create a distinction between suppliers that display active opportunism and passive opportunism. They define active opportunism as overt breach of

contract that can result in legal dispute between partners. In contrast, passive opportunism is defined as a breach of the “moral contract”. That is, the supplier has not breached any contract terms but rather exhibited behavior that can be considered as withholding effort. Further research on providing clarity on opportunism construct can result in better understanding the risk in buyer-supplier relationships.

APPENDIX

APPENDIX A

Correlation matrix

Correlations

Notes		
Output Created	Comments	17-Feb-2012 10:10:56
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	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	218
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.
	Syntax	CORRELATIONS /VARIABLES=ZOPPORTUNISM ZPROJECT_UNCERTAINTY ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE ZPERFORMANCE ZLEARNING_OUTCOMES /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.031
	Elapsed Time	00:00:00.015

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_D
ATA.sav

Correlations

		ZOPPORTUNISM	ZPROJECT_UNCERTAINTY	ZFLEXIBILITY
ZOPPORTUNISM	Pearson Correlation	1	** .514	* -.142
	Sig. (2-tailed)		.000	.036
	N	218	218	218
ZPROJECT_UNCERTAINTY	Pearson Correlation	** .514	1	-.131
	Sig. (2-tailed)	.000		.053
	N	218	218	218
ZFLEXIBILITY	Pearson Correlation	* -.142	-.131	1
	Sig. (2-tailed)	.036	.053	
	N	218	218	218
ZMONITORING	Pearson Correlation	** -.251	** -.338	** .280
	Sig. (2-tailed)	.000	.000	.000
	N	218	218	218
ZTS_INVESTMENTS	Pearson Correlation	-.034	-.091	.122
	Sig. (2-tailed)	.615	.180	.071
	N	218	218	218
ZSHARED_UNDERSTANDING	Pearson Correlation	** -.530	** -.413	** .292
	Sig. (2-tailed)	.000	.000	.000
	N	218	218	218
ZINFO_EXCHANGE	Pearson Correlation	** -.479	** -.384	** .202
	Sig. (2-tailed)	.000	.000	.003
	N	218	218	218
ZPERFORMANCE	Pearson Correlation	** -.657	** -.483	.115
	Sig. (2-tailed)	.000	.000	.091
	N	218	218	218
ZLEARNING_OUTCOMES	Pearson Correlation	** -.204	** -.201	.127
	Sig. (2-tailed)	.002	.003	.060
	N	218	218	218

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Correlations

		<i>ZMONITORING</i>	<i>ZTS_INVESTMENTS</i>	<i>ZSHARED_UNDERSTANDING</i>
ZOPPORTUNISM	Pearson Correlation	** -.251	-.034	** -.530
	Sig. (2-tailed)	.000	.615	.000
	N	218	218	218
ZPROJECT_UNCERTAINTY	Pearson Correlation	** -.338	-.091	** -.413
	Sig. (2-tailed)	.000	.180	.000
	N	218	218	218
ZFLEXIBILITY	Pearson Correlation	** .280	.122	** .292
	Sig. (2-tailed)	.000	.071	.000
	N	218	218	218
ZMONITORING	Pearson Correlation	1	** .365	** .222
	Sig. (2-tailed)		.000	.001
	N	218	218	218
ZTS_INVESTMENTS	Pearson Correlation	** .365	1	.082
	Sig. (2-tailed)	.000		.228
	N	218	218	218
ZSHARED_UNDERSTANDING	Pearson Correlation	** .222	.082	1
	Sig. (2-tailed)	.001	.228	
	N	218	218	218
ZINFO_EXCHANGE	Pearson Correlation	** .404	* .133	** .548
	Sig. (2-tailed)	.000	.049	.000
	N	218	218	218
ZPERFORMANCE	Pearson Correlation	** .245	.091	** .524
	Sig. (2-tailed)	.000	.179	.000
	N	218	218	218
ZLEARNING_OUTCOMES	Pearson Correlation	.120	** .224	** .327
	Sig. (2-tailed)	.076	.001	.000
	N	218	218	218

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Correlations

		ZINFO_EXCHANGE	ZPERFORMANCE	ZLEARNING_OUTCOMES
ZOPPORTUNISM	Pearson Correlation	** -.479	** -.657	** -.204
	Sig. (2-tailed)	.000	.000	.002
	N	218	218	218
ZPROJECT_UNCERTAINTY	Pearson Correlation	** -.384	** -.483	** -.201
	Sig. (2-tailed)	.000	.000	.003
	N	218	218	218
ZFLEXIBILITY	Pearson Correlation	** .202	.115	.127
	Sig. (2-tailed)	.003	.091	.060
	N	218	218	218
ZMONITORING	Pearson Correlation	** .404	** .245	.120
	Sig. (2-tailed)	.000	.000	.076
	N	218	218	218
ZTS_INVESTMENTS	Pearson Correlation	* .133	.091	** .224
	Sig. (2-tailed)	.049	.179	.001
	N	218	218	218
ZSHARED_UNDERSTANDING	Pearson Correlation	** .548	** .524	** .327
	Sig. (2-tailed)	.000	.000	.000
	N	218	218	218
ZINFO_EXCHANGE	Pearson Correlation	1	** .541	** .342
	Sig. (2-tailed)		.000	.000
	N	218	218	218
ZPERFORMANCE	Pearson Correlation	** .541	1	** .399
	Sig. (2-tailed)	.000		.000
	N	218	218	218
ZLEARNING_OUTCOMES	Pearson Correlation	** .342	** .399	1
	Sig. (2-tailed)	.000	.000	
	N	218	218	218

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

APPENDIX B

Fit as profile deviation – Analyses for outsourcing performance

APPENDIX B-1

Salient governance mechanisms analysis – *Unstable* risk profile

Regression

		Notes
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Comments		
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	Active Dataset	DataSet1
	Filter	CONDITIONAL_MEDIAN_RISK_GROUP = 1 (FILTER)
	Weight	<none>
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	N of Rows in Working Data File	48
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Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT PERFORMANCE /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE.
Resources	Processor Time	00:00:00.032
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	Memory Required	6244 bytes
	Additional Memory Required for Residual Plots	0 bytes

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DISSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ZSHARED_UNDERSTANDING	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: PERFORMANCE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.355 ^a	.126	.107	1.964	.126	6.643	1

a. Predictors: (Constant), ZSHARED_UNDERSTANDING

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	46	.013

ANOVA^b

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	25.620	1	25.620	6.643	.013 ^a
Residual	177.403	46	3.857		
Total	203.023	47			

a. Predictors: (Constant), ZSHARED_UNDERSTANDING

b. Dependent Variable: PERFORMANCE

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	15.254	.284		53.730	.000
ZSHARED_UNDERSTANDING	.882	.342	.355	2.577	.013

a. Dependent Variable: PERFORMANCE

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZSHARED_UNDERSTANDING	1.000	1.000

a. Dependent Variable: PERFORMANCE

Excluded Variables^b

Model	Beta In	T	Sig.	Partial Correlation
1 ZCRITICALITY	.012 ^a	.080	.936	.012
ZLN_OUTSOURCING_EXP	.165 ^a	1.196	.238	.176
ZLN_RELN_LENGTH	.225 ^a	1.560	.126	.227
ZLN_FIRM_SIZE	.043 ^a	.307	.760	.046
ZCULTURAL_DISTANCE	-.064 ^a	-.459	.649	-.068
ZFLEXIBILITY	.102 ^a	.693	.492	.103
ZMONITORING	.084 ^a	.607	.547	.090
ZTS_INVESTMENTS	-.025 ^a	-.176	.861	-.026
ZINFO_EXCHANGE	.011 ^a	.070	.945	.010

a. Predictors in the Model: (Constant), ZSHARED_UNDERSTANDING

b. Dependent Variable: PERFORMANCE

Excluded Variables^b

Model	Collinearity Statistics		
	Tolerance	VIF	Minimum Tolerance
1 ZCRITICALITY	.942	1.061	.942
ZLN_OUTSOURCING_EXP	.992	1.008	.992
ZLN_RELN_LENGTH	.886	1.128	.886
ZLN_FIRM_SIZE	.994	1.006	.994
ZCULTURAL_DISTANCE	.991	1.009	.991
ZFLEXIBILITY	.880	1.136	.880
ZMONITORING	.998	1.002	.998
ZTS_INVESTMENTS	.998	1.002	.998
ZINFO_EXCHANGE	.738	1.356	.738

b. Dependent Variable: PERFORMANCE

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	ZSHARED_UN DERSTANDIN G
1	1	1.057	1.000	.47	.47
	2	.943	1.058	.53	.53

a. Dependent Variable: PERFORMANCE

APPENDIX B-2

Salient governance mechanisms analysis – *Uncooperative risk profile*

Regression

Notes		
Input	Output Created Comments	16-Feb-2012 11:20:54
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	Active Dataset	DataSet1
	Filter	CONDITIONAL_MEDIAN_RISK_GROUP = 2 (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data	56
	File	
Missing Value Handling	Definition of Missing Cases Used	User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.
	Syntax	REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT PERFORMANCE /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE.
Resources	Processor Time	00:00:00.015
	Elapsed Time	00:00:00.014
	Memory Required	6244 bytes
	Additional Memory Required for Residual Plots	0 bytes

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DISSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ZINFO_EXCHANGE	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: PERFORMANCE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.422 ^a	.178	.163	2.047	.178	11.720	1

a. Predictors: (Constant), ZINFO_EXCHANGE

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	54	.001

ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	49.086	1	49.086	11.720	.001 ^a
	Residual	226.164	54	4.188		
	Total	275.249	55			

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Dependent Variable: PERFORMANCE

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.899	.283		49.131	.000
	ZINFO_EXCHANGE	.980	.286	.422	3.423	.001

a. Dependent Variable: PERFORMANCE

a
Coefficients

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZINFO_EXCHANGE	1.000	1.000

a. Dependent Variable: PERFORMANCE

b
Excluded Variables

Model	Beta In	T	Sig.	Partial Correlation
1 ZCRITICALITY	.011 ^a	.091	.928	.013
ZLN_OUTSOURCING_EXP	.040 ^a	.323	.748	.044
ZLN_RELN_LENGTH	.082 ^a	.646	.521	.088
ZLN_FIRM_SIZE	.044 ^a	.350	.728	.048
ZCULTURAL_DISTANCE	.006 ^a	.044	.965	.006
ZFLEXIBILITY	-.026 ^a	-.211	.834	-.029
ZMONITORING	.054 ^a	.399	.691	.055
ZTS_INVESTMENTS	.125 ^a	.997	.324	.136
ZSHARED_UNDERSTANDING	.135 ^a	.963	.340	.131

a. Predictors in the Model: (Constant), ZINFO_EXCHANGE

b. Dependent Variable: PERFORMANCE

b
Excluded Variables

Model	Collinearity Statistics		
	Tolerance	VIF	Minimum Tolerance
1 ZCRITICALITY	.995	1.005	.995
ZLN_OUTSOURCING_EXP	.992	1.008	.992
ZLN_RELN_LENGTH	.957	1.045	.957
ZLN_FIRM_SIZE	.998	1.002	.998
ZCULTURAL_DISTANCE	.976	1.024	.976
ZFLEXIBILITY	.993	1.007	.993
ZMONITORING	.857	1.167	.857
ZTS_INVESTMENTS	.960	1.042	.960
ZSHARED_UNDERSTANDING	.772	1.295	.772

b. Dependent Variable: PERFORMANCE

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	ZINFO_EXCHANGE
1	1	1.256	1.000	.37	.37
	2	.744	1.299	.63	.63

a. Dependent Variable: PERFORMANCE

APPENDIX B-3

Salient governance mechanisms analysis – *Routine* risk profile

Regression

Notes		
	Output Created Comments	16-Feb-2012 11:25:40
Input	Data	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DISSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav
	Active Dataset	DataSet1
	Filter	CONDITIONAL_MEDIAN_RISK_GROUP = 3 (FILTER)
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	N of Rows in Working Data	61
	File	
Missing Value Handling	Definition of Missing Cases Used	User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.
	Syntax	REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT PERFORMANCE /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE.
Resources	Processor Time	00:00:00.031
	Elapsed Time	00:00:00.027
	Memory Required	6244 bytes
	Additional Memory Required for Residual Plots	0 bytes

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DISSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ZINFO_EXCHANGE	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	ZCULTURAL_DISTANCE	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: PERFORMANCE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.326 ^a	.107	.091	1.550	.107	7.034	1
2	.407 ^b	.166	.137	1.511	.059	4.113	1

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZCULTURAL_DISTANCE

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	59	.010
2	58	.047

ANOVA^c

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.910	1	16.910	7.034	.010 ^a
	Residual	141.838	59	2.404		
	Total	158.748	60			
2	Regression	26.303	2	13.151	5.759	.005 ^b
	Residual	132.446	58	2.284		
	Total	158.748	60			

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZCULTURAL_DISTANCE

c. Dependent Variable: PERFORMANCE

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	16.497	.239		68.983	.000
ZINFO_EXCHANGE	.623	.235	.326	2.652	.010
2 (Constant)	16.516	.233		70.804	.000
ZINFO_EXCHANGE	.597	.229	.313	2.604	.012
ZCULTURAL_DISTANCE	-.364	.179	-.244	-2.028	.047

a. Dependent Variable: PERFORMANCE

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZINFO_EXCHANGE	1.000	1.000
2 (Constant)		
ZINFO_EXCHANGE	.997	1.003
ZCULTURAL_DISTANCE	.997	1.003

a. Dependent Variable: PERFORMANCE

c
Excluded Variables

Model	Beta In	T	Sig.	Partial Correlation
1				
ZCRITICALITY	.149 ^a	1.216	.229	.158
ZLN_OUTSOURCING_EXP	-.052 ^a	-.416	.679	-.055
ZLN_RELN_LENGTH	.035 ^a	.286	.776	.037
ZLN_FIRM_SIZE	-.173 ^a	-1.401	.167	-.181
ZCULTURAL_DISTANCE	-.244 ^a	-2.028	.047	-.257
ZFLEXIBILITY	.018 ^a	.144	.886	.019
ZMONITORING	-.122 ^a	-.954	.344	-.124
ZTS_INVESTMENTS	-.101 ^a	-.819	.416	-.107
ZSHARED_UNDERSTANDING	.230 ^a	1.779	.081	.227
2				
ZCRITICALITY	.168 ^b	1.407	.165	.183
ZLN_OUTSOURCING_EXP	-.046 ^b	-.383	.703	-.051
ZLN_RELN_LENGTH	.044 ^b	.360	.720	.048
ZLN_FIRM_SIZE	-.150 ^b	-1.235	.222	-.161
ZFLEXIBILITY	.008 ^b	.066	.947	.009
ZMONITORING	-.084 ^b	-.663	.510	-.087
ZTS_INVESTMENTS	-.038 ^b	-.300	.765	-.040
ZSHARED_UNDERSTANDING	.245 ^b	1.951	.056	.250

a. Predictors in the Model: (Constant), ZINFO_EXCHANGE

b. Predictors in the Model: (Constant), ZINFO_EXCHANGE, ZCULTURAL_DISTANCE

c. Dependent Variable: PERFORMANCE

Excluded Variables^c

Model		Collinearity Statistics		
		Tolerance	VIF	Minimum Tolerance
1	ZCRITICALITY	.999	1.001	.999
	ZLN_OUTSOURCING_EXP	1.000	1.000	1.000
	ZLN_RELN_LENGTH	1.000	1.000	1.000
	ZLN_FIRM_SIZE	.973	1.028	.973
	ZCULTURAL_DISTANCE	.997	1.003	.997
	ZFLEXIBILITY	.976	1.024	.976
	ZMONITORING	.935	1.070	.935
	ZTS_INVESTMENTS	.992	1.008	.992
	ZSHARED_UNDERSTANDING	.871	1.148	.871
2	ZCRITICALITY	.994	1.006	.992
	ZLN_OUTSOURCING_EXP	.999	1.001	.996
	ZLN_RELN_LENGTH	.999	1.001	.996
	ZLN_FIRM_SIZE	.963	1.038	.963
	ZFLEXIBILITY	.975	1.026	.974
	ZMONITORING	.911	1.098	.911
	ZTS_INVESTMENTS	.918	1.089	.918
	ZSHARED_UNDERSTANDING	.869	1.151	.867

c. Dependent Variable: PERFORMANCE

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	ZINFO_EXCHANGE	ZCULTURAL_DISTANCE
1	1	1.558	1.000	.22	.22	
	2	.442	1.876	.78	.78	
2	1	1.558	1.000	.22	.22	.00
	2	1.001	1.247	.00	.00	.99
	3	.440	1.882	.78	.78	.01

a. Dependent Variable: PERFORMANCE

APPENDIX B-4

Salient governance mechanisms analysis – *High-Risk* risk profile

Regression

Notes		
Input	Output Created Comments	16-Feb-2012 13:55:42
Data	Active Dataset Filter Weight Split File N of Rows in Working Data File	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DiSSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav DataSet1 CONDITIONAL_MEDIAN_RISK_GROUP = 4 (FILTER) <none> <none> 53
Missing Value Handling	Definition of Missing Cases Used	User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT PERFORMANCE /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE.
Resources	Processor Time Elapsed Time Memory Required Additional Memory Required for Residual Plots	00:00:00.016 00:00:00.039 6244 bytes 0 bytes

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DiSSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ZINFO_EXCHANGE	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	ZSHARED_UNDERSTANDING	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	ZFLEXIBILITY	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: PERFORMANCE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.595 ^a	.354	.341	1.944	.354	27.893	1
2	.635 ^b	.403	.379	1.887	.050	4.160	1
3	.675 ^c	.456	.423	1.819	.053	4.760	1

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING

c. Predictors: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING, ZFLEXIBILITY

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	51	.000
2	50	.047
3	49	.034

ANOVA^d

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	105.437	1	105.437	27.893	.000 ^a
	Residual	192.782	51	3.780		
	Total	298.219	52			
2	Regression	120.244	2	60.122	16.891	.000 ^b
	Residual	177.975	50	3.559		
	Total	298.219	52			
3	Regression	136.002	3	45.334	13.694	.000 ^c
	Residual	162.216	49	3.311		
	Total	298.219	52			

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING

c. Predictors: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING, ZFLEXIBILITY

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	51	.000
2	50	.047
3	49	.034

ANOVA^d

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	105.437	1	105.437	27.893	.000 ^a
	Residual	192.782	51	3.780		
	Total	298.219	52			
2	Regression	120.244	2	60.122	16.891	.000 ^b
	Residual	177.975	50	3.559		
	Total	298.219	52			
3	Regression	136.002	3	45.334	13.694	.000 ^c
	Residual	162.216	49	3.311		
	Total	298.219	52			

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING

c. Predictors: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING, ZFLEXIBILITY

d. Dependent Variable: PERFORMANCE

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.517	.298		45.360	.000
	ZINFO_EXCHANGE	1.441	.273	.595	5.281	.000
2	(Constant)	13.835	.329		42.106	.000
	ZINFO_EXCHANGE	1.152	.300	.476	3.838	.000
	ZSHARED_UNDERSTANDING	.649	.318	.253	2.040	.047
3	(Constant)	13.925	.320		43.577	.000
	ZINFO_EXCHANGE	1.147	.290	.473	3.961	.000
	ZSHARED_UNDERSTANDING	.970	.340	.378	2.851	.006
	ZFLEXIBILITY	-.571	.262	-.261	-2.182	.034

a. Dependent Variable: PERFORMANCE

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	ZINFO_EXCHANGE	1.000	1.000
2	(Constant)		
	ZINFO_EXCHANGE	.778	1.286
	ZSHARED_UNDERSTANDING	.778	1.286
3	(Constant)		
	ZINFO_EXCHANGE	.778	1.286
	ZSHARED_UNDERSTANDING	.632	1.583
	ZFLEXIBILITY	.774	1.292

a. Dependent Variable: PERFORMANCE

d
Excluded Variables

Model	Beta In	T	Sig.	Partial Correlation
1				
ZCRITICALITY	.072 ^a	.634	.529	.089
ZLN_OUTSOURCING_EXP	-.091 ^a	-.809	.422	-.114
ZLN_RELN_LENGTH	-.147 ^a	-1.304	.198	-.181
ZLN_FIRM_SIZE	.051 ^a	.447	.657	.063
ZCULTURAL_DISTANCE	-.041 ^a	-.361	.719	-.051
ZFLEXIBILITY	-.113 ^a	-.983	.331	-.138
ZMONITORING	-.016 ^a	-.127	.899	-.018
ZTS_INVESTMENTS	.099 ^a	.877	.385	.123
ZSHARED_UNDERSTANDING	.253 ^a	2.040	.047	.277
2				
ZCRITICALITY	.090 ^b	.819	.417	.116
ZLN_OUTSOURCING_EXP	-.047 ^b	-.416	.679	-.059
ZLN_RELN_LENGTH	-.161 ^b	-1.484	.144	-.207
ZLN_FIRM_SIZE	.102 ^b	.900	.373	.127
ZCULTURAL_DISTANCE	-.035 ^b	-.318	.752	-.045
ZFLEXIBILITY	-.261 ^b	-2.182	.034	-.298
ZMONITORING	-.053 ^b	-.444	.659	-.063
ZTS_INVESTMENTS	.132 ^b	1.198	.237	.169
3				
ZCRITICALITY	.132 ^c	1.235	.223	.176
ZLN_OUTSOURCING_EXP	-.037 ^c	-.336	.738	-.048
ZLN_RELN_LENGTH	-.156 ^c	-1.488	.143	-.210
ZLN_FIRM_SIZE	.084 ^c	.764	.449	.110
ZCULTURAL_DISTANCE	-.016 ^c	-.151	.880	-.022
ZMONITORING	-.029 ^c	-.249	.804	-.036
ZTS_INVESTMENTS	.120 ^c	1.120	.268	.160

a. Predictors in the Model: (Constant), ZINFO_EXCHANGE

b. Predictors in the Model: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING

c. Predictors in the Model: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING, ZFLEXIBILITY

d. Dependent Variable: PERFORMANCE

Excluded Variables^d

Model		Collinearity Statistics		
		Tolerance	VIF	Minimum Tolerance
1	ZCRITICALITY	1.000	1.000	1.000
	ZLN_OUTSOURCING_EXP	.998	1.002	.998
	ZLN_RELN_LENGTH	.991	1.009	.991
	ZLN_FIRM_SIZE	.982	1.018	.982
	ZCULTURAL_DISTANCE	.988	1.012	.988
	ZFLEXIBILITY	.953	1.050	.953
	ZMONITORING	.856	1.168	.856
	ZTS_INVESTMENTS	.992	1.008	.992
	ZSHARED_UNDERSTANDING	.778	1.286	.778
2	ZCRITICALITY	.993	1.007	.773
	ZLN_OUTSOURCING_EXP	.955	1.048	.744
	ZLN_RELN_LENGTH	.987	1.013	.768
	ZLN_FIRM_SIZE	.941	1.063	.745
	ZCULTURAL_DISTANCE	.988	1.013	.772
	ZFLEXIBILITY	.774	1.292	.632
	ZMONITORING	.836	1.196	.716
	ZTS_INVESTMENTS	.974	1.027	.762
3	ZCRITICALITY	.966	1.035	.619
	ZLN_OUTSOURCING_EXP	.953	1.050	.605
	ZLN_RELN_LENGTH	.986	1.014	.630
	ZLN_FIRM_SIZE	.935	1.069	.617
	ZCULTURAL_DISTANCE	.981	1.020	.630
	ZMONITORING	.828	1.208	.626
	ZTS_INVESTMENTS	.971	1.030	.626

d. Dependent Variable: PERFORMANCE

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	ZINFO_EXCHANGE
1	1	1.444	1.000	.28	.28
	2	.556	1.611	.72	.72
2	1	2.107	1.000	.09	.09
	2	.556	1.946	.55	.57
	3	.336	2.503	.35	.34
3	1	2.360	1.000	.06	.07
	2	.814	1.702	.17	.04
	3	.550	2.072	.43	.68
	4	.276	2.925	.35	.21

a. Dependent Variable: PERFORMANCE

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions	
		ZSHARED_UNDERSTANDING	ZFLEXIBILITY
1	1		
	2		
2	1	.09	
	2	.00	
	3	.91	
3	1	.06	.05
	2	.00	.66
	3	.00	.02
	4	.94	.27

a. Dependent Variable: PERFORMANCE

APPENDIX B-5

Salient governance mechanisms analysis – Total Sample

Regression

		Notes
		16-Feb-2012 14:37:04
Input	Output Created Comments	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DiSSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav DataSet1 <none> <none> <none> 218 User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used. REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT PERFORMANCE /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE. 00:00:00.015 00:00:00.028 6244 bytes 0 bytes
	Data	
	Active Dataset	
	Filter	
	Weight	
	Split File	
	N of Rows in Working Data File	
Missing Value Handling	Definition of Missing Cases Used	
	Syntax	
Resources	Processor Time	
	Elapsed Time	
	Memory Required	
	Additional Memory Required for Residual Plots	

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DiSSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ZINFO_EXCHANGE	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	ZSHARED_UNDERSTANDING	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: PERFORMANCE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.541 ^a	.293	.290	2.203	.293	89.604	1
2	.606 ^b	.367	.361	2.090	.074	25.112	1

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	216	.000
2	215	.000

ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	435.028	1	435.028	89.604	.000 ^a
	Residual	1048.678	216	4.855		
	Total	1483.706	217			
2	Regression	544.704	2	272.352	62.359	.000 ^b
	Residual	939.003	215	4.367		
	Total	1483.706	217			

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING

c. Dependent Variable: PERFORMANCE

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14.706	.149		98.545	.000
ZINFO_EXCHANGE	1.416	.150	.541	9.466	.000
2 (Constant)	14.706	.142		103.899	.000
ZINFO_EXCHANGE	.950	.170	.363	5.600	.000
ZSHARED_UNDERSTANDING	.850	.170	.325	5.011	.000

a. Dependent Variable: PERFORMANCE

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZINFO_EXCHANGE	1.000	1.000
2 (Constant)		
ZINFO_EXCHANGE	.699	1.430
ZSHARED_UNDERSTANDING	.699	1.430

a. Dependent Variable: PERFORMANCE

Excluded Variables^c

Model	Beta In	T	Sig.	Partial Correlation
1				
ZCRITICALITY	.036 ^a	.626	.532	.043
ZLN_OUTSOURCING_EXP	.053 ^a	.926	.355	.063
ZLN_RELN_LENGTH	.019 ^a	.337	.736	.023
ZLN_FIRM_SIZE	-.057 ^a	-.992	.323	-.067
ZCULTURAL_DISTANCE	-.076 ^a	-1.330	.185	-.090
ZFLEXIBILITY	.006 ^a	.095	.924	.006
ZMONITORING	.031 ^a	.492	.623	.034
ZTS_INVESTMENTS	.020 ^a	.338	.736	.023
ZSHARED_UNDERSTANDING	.325 ^a	5.011	.000	.323
2				
ZCRITICALITY	.059 ^b	1.090	.277	.074
ZLN_OUTSOURCING_EXP	.021 ^b	.387	.699	.026
ZLN_RELN_LENGTH	.038 ^b	.702	.484	.048
ZLN_FIRM_SIZE	.008 ^b	.146	.884	.010
ZCULTURAL_DISTANCE	-.086 ^b	-1.595	.112	-.108
ZFLEXIBILITY	-.059 ^b	-1.031	.304	-.070
ZMONITORING	.031 ^b	.518	.605	.035
ZTS_INVESTMENTS	.017 ^b	.303	.762	.021

a. Predictors in the Model: (Constant), ZINFO_EXCHANGE

b. Predictors in the Model: (Constant), ZINFO_EXCHANGE, ZSHARED_UNDERSTANDING

c. Dependent Variable: PERFORMANCE

Excluded Variables^c

Model		Collinearity Statistics		
		Tolerance	VIF	Minimum Tolerance
1	ZCRITICALITY	.999	1.001	.999
	ZLN_OUTSOURCING_EXP	.995	1.005	.995
	ZLN_RELN_LENGTH	.996	1.004	.996
	ZLN_FIRM_SIZE	.997	1.003	.997
	ZCULTURAL_DISTANCE	.998	1.002	.998
	ZFLEXIBILITY	.959	1.043	.959
	ZMONITORING	.836	1.195	.836
	ZTS_INVESTMENTS	.982	1.018	.982
	ZSHARED_UNDERSTANDING	.699	1.430	.699
2	ZCRITICALITY	.992	1.008	.694
	ZLN_OUTSOURCING_EXP	.981	1.020	.690
	ZLN_RELN_LENGTH	.991	1.009	.696
	ZLN_FIRM_SIZE	.941	1.063	.660
	ZCULTURAL_DISTANCE	.997	1.003	.698
	ZFLEXIBILITY	.912	1.096	.665
	ZMONITORING	.836	1.195	.615
	ZTS_INVESTMENTS	.982	1.018	.692

c. Dependent Variable: PERFORMANCE

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	ZINFO_EXCHANGE	ZSHARED_UNDERSTANDING
1	1	1.000	1.000	.50	.50	
	2	1.000	1.000	.50	.50	
2	1	1.548	1.000	.00	.23	.23
	2	1.000	1.244	1.00	.00	.00
	3	.452	1.851	.00	.77	.77

a. Dependent Variable: PERFORMANCE

APPENDIX B-6

Hypotheses tests for fit as profile deviation – outsourcing performance

Regression

Notes		
	Output Created	16-Feb-2012 15:10:58
	Comments	
Input	Data	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DISSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	218
Missing Value Handling	Definition of Missing Cases Used	User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.
	Syntax	REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT PERFORMANCE /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE /METHOD=ENTER ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZSTRAT_IMPORT ZMISALIGN_PERF /METHOD=ENTER ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZSTRAT_IMPORT ZMISALIGN_PERF INT_STRATIMPORT_MISALIGNPERF.
Resources	Processor Time	00:00:00.015
	Elapsed Time	00:00:00.030
	Memory Required	5764 bytes
	Additional Memory Required for Residual Plots	0 bytes

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\PERFORMANCE\DISSERT_CONDITIONAL_MEDIAN_PROFDEV_PERF.sav

Warnings

No variables were entered into the equation.

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZMISALIGN_PERF, ZLN_OUTSOURCING_EXP, ZLN_FIRM_SIZE, ZCRITICALITY, ZLN_RELN_LENGTH ^a	.	Enter
2	INT_STRATIMPORT_MISALI GNPERF ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: PERFORMANCE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.326 ^a	.106	.068	1.867	.106	2.786	7
2	.326 ^b	.106	.063	1.873	.000	.033	1

a. Predictors: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZMISALIGN_PERF, ZLN_OUTSOURCING_EXP, ZLN_FIRM_SIZE, ZCRITICALITY, ZLN_RELN_LENGTH

b. Predictors: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZMISALIGN_PERF, ZLN_OUTSOURCING_EXP, ZLN_FIRM_SIZE, ZCRITICALITY, ZLN_RELN_LENGTH, INT_STRATIMPORT_MISALIGNPERF

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	164	.009
2	163	.855

ANOVA^c

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	67.999	7	9.714	2.786	.009 ^a
Residual	571.894	164	3.487		
Total	639.893	171			
2 Regression	68.117	8	8.515	2.427	.017 ^b
Residual	571.776	163	3.508		
Total	639.893	171			

a. Predictors: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZMISALIGN_PERF, ZLN_OUTSOURCING_EXP, ZLN_FIRM_SIZE, ZCRITICALITY, ZLN_RELN_LENGTH

b. Predictors: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZMISALIGN_PERF, ZLN_OUTSOURCING_EXP, ZLN_FIRM_SIZE, ZCRITICALITY, ZLN_RELN_LENGTH, INT_STRATIMPORT_MISALIGNPERF

c. Dependent Variable: PERFORMANCE

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	14.771	.143		103.497	.000
ZCRITICALITY	.022	.146	.012	.150	.881
ZLN_OUTSOURCING_EXP	.198	.157	.101	1.262	.209
ZLN_RELN_LENGTH	-.142	.156	-.073	-.910	.364
ZLN_FIRM_SIZE	-.120	.151	-.060	-.800	.425
ZCULTURAL_DISTANCE	-.093	.141	-.049	-.658	.511
ZMISALIGN_PERF	-.522	.145	-.270	-3.609	.000
ZSTRAT_IMPORT	.240	.150	.124	1.601	.111
2 (Constant)	14.770	.143		103.099	.000
ZCRITICALITY	.024	.147	.013	.163	.871
ZLN_OUTSOURCING_EXP	.196	.158	.100	1.238	.218
ZLN_RELN_LENGTH	-.139	.157	-.072	-.881	.380
ZLN_FIRM_SIZE	-.118	.151	-.059	-.779	.437
ZCULTURAL_DISTANCE	-.094	.142	-.049	-.663	.508
ZMISALIGN_PERF	-.535	.162	-.277	-3.312	.001
ZSTRAT_IMPORT	.240	.150	.124	1.598	.112
INT_STRATIMPORT_MISALIGNPERF	.029	.159	.015	.183	.855

a. Dependent Variable: PERFORMANCE

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZCRITICALITY	.903	1.107
ZLN_OUTSOURCING_EXP	.852	1.173
ZLN_RELN_LENGTH	.841	1.188
ZLN_FIRM_SIZE	.960	1.041
ZCULTURAL_DISTANCE	.991	1.009
ZMISALIGN_PERF	.973	1.027
ZSTRAT_IMPORT	.907	1.102
2 (Constant)		
ZCRITICALITY	.898	1.114
ZLN_OUTSOURCING_EXP	.846	1.182
ZLN_RELN_LENGTH	.830	1.204
ZLN_FIRM_SIZE	.954	1.049
ZCULTURAL_DISTANCE	.989	1.011
ZMISALIGN_PERF	.785	1.274
ZSTRAT_IMPORT	.907	1.102
INT_STRATIMPORT_MISALIG NPERF	.796	1.257

a. Dependent Variable: PERFORMANCE

Excluded Variables^b

Model	Beta In	t	Sig.	Partial Correlation
1 INT_STRATIMPORT_MISALIG NPERF	^a .015	.183	.855	.014

a. Predictors in the Model: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZMISALIGN_PERF, ZLN_OUTSOURCING_EXP, ZLN_FIRM_SIZE, ZCRITICALITY, ZLN_RELN_LENGTH

b. Dependent Variable: PERFORMANCE

Excluded Variables^b

Model	Collinearity Statistics		
	Tolerance	VIF	Minimum Tolerance
1 INT_STRATIMPORT_MISALIG NPERF	.796	1.257	.785

b. Dependent Variable: PERFORMANCE

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	ZCRITICALITY	ZLN_OUTSOURCING_EXP
1	1	1.496	1.000	.01	.07	.20
	2	1.244	1.097	.00	.27	.02
	3	1.067	1.184	.00	.00	.05
	4	1.018	1.212	.37	.02	.00
	5	.990	1.230	.60	.03	.01
	6	.921	1.274	.00	.04	.10
	7	.661	1.505	.02	.57	.00
	8	.604	1.574	.00	.00	.62
2	1	1.509	1.000	.01	.04	.17
	2	1.431	1.027	.00	.04	.02
	3	1.198	1.123	.00	.31	.02
	4	1.057	1.195	.00	.01	.08
	5	1.011	1.222	.71	.00	.01
	6	.970	1.247	.25	.00	.02
	7	.679	1.491	.01	.06	.33
	8	.655	1.518	.01	.51	.14
	9	.489	1.756	.00	.02	.21

a. Dependent Variable: PERFORMANCE

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions			
		ZLN_RELN_LENGTH	ZLN_FIRM_SIZE	ZCULTURAL_DISTANCE	ZMISALIGNMENT
1	1	.19	.01	.00	.00
	2	.07	.07	.03	.19
	3	.04	.48	.11	.01
	4	.01	.11	.38	.06
	5	.01	.06	.21	.08
	6	.00	.00	.23	.58
	7	.00	.27	.01	.01
	8	.69	.01	.03	.06
2	1	.17	.00	.00	.05
	2	.01	.01	.00	.22
	3	.07	.21	.03	.00
	4	.06	.26	.20	.01
	5	.00	.07	.18	.00
	6	.00	.12	.55	.01
	7	.25	.21	.00	.10
	8	.12	.11	.01	.05
	9	.31	.00	.02	.56

a. Dependent Variable: PERFORMANCE

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions	
		ZSTRAT_IMPORT	INT_STRATIMPORT_MISALIGNMENT
1	1	.11	
	2	.09	
	3	.18	
	4	.02	
	5	.00	
	6	.08	
	7	.51	
	8	.00	
2	1	.07	.04
	2	.06	.20
	3	.05	.05
	4	.24	.00
	5	.00	.00
	6	.05	.01
	7	.16	.14
	8	.36	.04
	9	.00	.52

a. Dependent Variable: PERFORMANCE

APPENDIX C

Fit as profile deviation – Analyses for learning outcomes

APPENDIX C-1

Salient governance mechanisms analysis – *Unstable* risk profile

Regression

		Notes
Output Created		17-Feb-2012 14:13:03
Comments		
Input	Data	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav
	Active Dataset	DataSet1
	Filter	CONDITIONAL_MEDIAN_RISK_GROUP = 1 (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	48
Missing Value Handling	Definition of Missing Cases Used	User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT LEARNING_OUTCOMES /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE /METHOD=ENTER ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE.
Resources	Processor Time	00:00:00.047
	Elapsed Time	00:00:00.024
	Memory Required	6204 bytes
	Additional Memory Required for Residual Plots	0 bytes

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav

Warnings

No variables were entered into the equation.

b
Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	ZINFO_EXCHANGE, ZLN_RELN_LENGTH, ZCRITICALITY, ZCULTURAL_DISTANCE, ZTS_INVESTMENTS, ZLN_FIRM_SIZE, ZLN_OUTSOURCING_EXP, ZMONITORING, ZFLEXIBILITY, ZSHARED_UNDERSTANDING ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: LEARNING_OUTCOMES

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.500 ^a	.250	.048	2.68962842	.250	1.235	10

a. Predictors: (Constant), ZINFO_EXCHANGE, ZLN_RELN_LENGTH, ZCRITICALITY, ZCULTURAL_DISTANCE, ZTS_INVESTMENTS, ZLN_FIRM_SIZE, ZLN_OUTSOURCING_EXP, ZMONITORING, ZFLEXIBILITY, ZSHARED_UNDERSTANDING

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	37	.302

b
ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	89.336	10	8.934	1.235	.302 ^a
Residual	267.662	37	7.234		
Total	356.998	47			

a. Predictors: (Constant), ZINFO_EXCHANGE, ZLN_RELN_LENGTH, ZCRITICALITY, ZCULTURAL_DISTANCE, ZTS_INVESTMENTS, ZLN_FIRM_SIZE, ZLN_OUTSOURCING_EXP, ZMONITORING, ZFLEXIBILITY, ZSHARED_UNDERSTANDING

b. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	12.765	.407		31.399	.000
ZCRITICALITY	.669	.407	.254	1.642	.109
ZLN_OUTSOURCING_EXP	.630	.394	.268	1.599	.118
ZLN_RELN_LENGTH	.084	.426	.035	.198	.844
ZLN_FIRM_SIZE	.887	.467	.313	1.899	.065
ZCULTURAL_DISTANCE	.571	.514	.165	1.110	.274
ZFLEXIBILITY	.070	.512	.027	.137	.892
ZMONITORING	-.383	.564	-.122	-.680	.501
ZTS_INVESTMENTS	-.406	.507	-.131	-.801	.428
ZSHARED_UNDERSTANDING	.910	.731	.276	1.246	.221
ZINFO_EXCHANGE	-.128	.648	-.040	-.197	.845

a. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZCRITICALITY	.849	1.177
ZLN_OUTSOURCING_EXP	.722	1.386
ZLN_RELN_LENGTH	.639	1.566
ZLN_FIRM_SIZE	.745	1.342
ZCULTURAL_DISTANCE	.912	1.097
ZFLEXIBILITY	.534	1.874
ZMONITORING	.626	1.597
ZTS_INVESTMENTS	.754	1.326
ZSHARED_UNDERSTANDING	.412	2.428
ZINFO_EXCHANGE	.487	2.053

a. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	ZCRITICALITY	ZLN_OUTSOURCING_EXP
1	1	2.368	1.000	.01	.00	.01
	2	1.695	1.182	.01	.04	.05
	3	1.484	1.263	.05	.06	.10
	4	1.156	1.431	.19	.23	.01
	5	.881	1.640	.00	.04	.19
	6	.851	1.668	.41	.00	.00
	7	.819	1.700	.24	.20	.01
	8	.674	1.874	.01	.13	.09
	9	.461	2.266	.00	.26	.03
	10	.408	2.410	.09	.01	.44
	11	.203	3.416	.00	.02	.07

a. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions				
		ZLN_RELN_LEN GTH	ZLN_FIRM_SIZE	ZCULTURAL_DI STANCE	ZFLEXIBILITY	ZMONITORING
1	1	.00	.03	.00	.05	.04
	2	.13	.00	.00	.01	.03
	3	.02	.04	.12	.02	.00
	4	.05	.04	.11	.00	.00
	5	.00	.15	.44	.00	.00
	6	.01	.06	.14	.00	.11
	7	.01	.05	.00	.07	.10
	8	.02	.35	.00	.11	.22
	9	.29	.00	.02	.26	.16
	10	.34	.05	.16	.07	.03
	11	.13	.22	.00	.41	.30

a. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions		
		ZTS_INVESTME NTS	ZSHARED_UNDE RSTANDING	ZINFO_EXCHAN GE
1	1	.04	.01	.05
	2	.01	.07	.01
	3	.03	.02	.02
	4	.07	.00	.00
	5	.01	.03	.00
	6	.20	.00	.01
	7	.14	.00	.08
	8	.00	.00	.06
	9	.32	.06	.01
	10	.14	.00	.27
	11	.03	.80	.51

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions		
		ZTS_INVESTMENTS	ZSHARED_UNDERSTANDING	ZINFO_EXCHANGE
1	1	.04	.01	.05
	2	.01	.07	.01
	3	.03	.02	.02
	4	.07	.00	.00
	5	.01	.03	.00
	6	.20	.00	.01
	7	.14	.00	.08
	8	.00	.00	.06
	9	.32	.06	.01
	10	.14	.00	.27
	11	.03	.80	.51

a. Dependent Variable: LEARNING_OUTCOMES

APPENDIX C-2

Salient governance mechanisms analysis – *Uncooperative risk profile*

Regression

Notes			
Output Created Comments		17-Feb-2012 14:15:59	
Input	Data	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav	
	Active Dataset	DataSet1	
	Filter	CONDITIONAL_MEDIAN_RISK_GROUP = 2	
	Weight	<none>	
	Split File	<none>	
	N of Rows in Working Data	56	
	File		
Missing Value Handling	Definition of Missing Cases Used	User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.	
	Syntax	REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT LEARNING_OUTCOMES /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE.	
Resources	Processor Time	00:00:00.016	
	Elapsed Time	00:00:00.026	
	Memory Required	6148 bytes	
	Additional Memory Required for Residual Plots	0 bytes	

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	ZINFO_EXCHANGE		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	ZLN_RELN_LENGTH		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: LEARNING_OUTCOMES

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.390 ^a	.152	.136	2.96927275	.152	9.668	1
2	.530 ^b	.281	.254	2.75933926	.129	9.529	1

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZLN_RELN_LENGTH

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	54	.003
2	53	.003

ANOVA^c

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	85.242	1	85.242	9.668	.003 ^a
	Residual	476.095	54	8.817		
	Total	561.338	55			
2	Regression	157.798	2	78.899	10.362	.000 ^b
	Residual	403.540	53	7.614		
	Total	561.338	55			

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZLN_RELN_LENGTH

c. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.749	.410		31.060	.000
	ZINFO_EXCHANGE	1.291	.415	.390	3.109	.003
2	(Constant)	12.956	.387		33.452	.000
	ZINFO_EXCHANGE	1.543	.394	.466	3.911	.000
	ZLN_RELN_LENGTH	1.236	.400	.367	3.087	.003

a. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZINFO_EXCHANGE	1.000	1.000
2 (Constant)		
ZINFO_EXCHANGE	.957	1.045
ZLN_RELN_LENGTH	.957	1.045

a. Dependent Variable: LEARNING_OUTCOMES

Excluded Variables^c

Model	Beta In	T	Sig.	Partial Correlation
1 ZCRITICALITY	-.095 ^a	-.749	.457	-.102
ZLN_OUTSOURCING_EXP	.118 ^a	.940	.351	.128
ZLN_RELN_LENGTH	.367 ^a	3.087	.003	.390
ZLN_FIRM_SIZE	-.075 ^a	-.598	.553	-.082
ZCULTURAL_DISTANCE	.045 ^a	.350	.728	.048
ZFLEXIBILITY	-.032 ^a	-.250	.803	-.034
ZMONITORING	-.193 ^a	-1.443	.155	-.194
ZTS_INVESTMENTS	.209 ^a	1.660	.103	.222
ZSHARED_UNDERSTANDING	.104 ^a	.726	.471	.099
2 ZCRITICALITY	-.114 ^b	-.978	.333	-.134
ZLN_OUTSOURCING_EXP	.032 ^b	.264	.793	.037
ZLN_FIRM_SIZE	-.172 ^b	-1.445	.154	-.197
ZCULTURAL_DISTANCE	.013 ^b	.112	.912	.015
ZFLEXIBILITY	.001 ^b	.010	.992	.001
ZMONITORING	-.130 ^b	-1.019	.313	-.140
ZTS_INVESTMENTS	.207 ^b	1.780	.081	.240
ZSHARED_UNDERSTANDING	.104 ^b	.784	.437	.108

a. Predictors in the Model: (Constant), ZINFO_EXCHANGE

b. Predictors in the Model: (Constant), ZINFO_EXCHANGE, ZLN_RELN_LENGTH

c. Dependent Variable: LEARNING_OUTCOMES

Excluded Variables^c

Model		Collinearity Statistics		
		Tolerance	VIF	Minimum Tolerance
1	ZCRITICALITY	.995	1.005	.995
	ZLN_OUTSOURCING_EXP	.992	1.008	.992
	ZLN_RELN_LENGTH	.957	1.045	.957
	ZLN_FIRM_SIZE	.998	1.002	.998
	ZCULTURAL_DISTANCE	.976	1.024	.976
	ZFLEXIBILITY	.993	1.007	.993
	ZMONITORING	.857	1.167	.857
	ZTS_INVESTMENTS	.960	1.042	.960
	ZSHARED_UNDERSTANDING	.772	1.295	.772
2	ZCRITICALITY	.992	1.008	.954
	ZLN_OUTSOURCING_EXP	.933	1.072	.900
	ZLN_FIRM_SIZE	.940	1.063	.902
	ZCULTURAL_DISTANCE	.969	1.032	.930
	ZFLEXIBILITY	.985	1.016	.949
	ZMONITORING	.831	1.203	.831
	ZTS_INVESTMENTS	.960	1.042	.920
	ZSHARED_UNDERSTANDING	.772	1.295	.747

c. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	ZINFO_EXCHANGE	ZLN_RELN_LENGTH
1	1	1.256	1.000	.37	.37	
	2	.744	1.299	.63	.63	
2	1	1.261	1.000	.30	.39	.02
	2	1.108	1.067	.18	.04	.63
	3	.630	1.415	.52	.57	.35

a. Dependent Variable: LEARNING_OUTCOMES

APPENDIX C-3

Salient governance mechanisms analysis – *Routine* risk profile

Regression

Notes	
Output Created Comments Input Data Active Dataset Filter Weight Split File N of Rows in Working Data File Missing Value Handling Definition of Missing Cases Used Syntax Resources Processor Time Elapsed Time Memory Required Additional Memory Required for Residual Plots	17-Feb-2012 14:22:06 C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav DataSet1 CONDITIONAL_MEDIAN_RISK_GROUP = 3 (FILTER) <none> <none> 61 User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used. REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT LEARNING_OUTCOMES /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE. 00:00:00.016 00:00:00.015 6148 bytes 0 bytes

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ZTS_INVESTMENTS	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: LEARNING_OUTCOMES

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.312 ^a	.097	.082	2.76504239	.097	6.367	1

a. Predictors: (Constant), ZTS_INVESTMENTS

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	59	.014

ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	48.680	1	48.680	6.367	.014 ^a
	Residual	451.082	59	7.645		
	Total	499.762	60			

a. Predictors: (Constant), ZTS_INVESTMENTS

b. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.742	.354		38.814	.000
	ZTS_INVESTMENTS	.868	.344	.312	2.523	.014

a. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	ZTS_INVESTMENTS	1.000	1.000

a. Dependent Variable: LEARNING_OUTCOMES

b
Excluded Variables

Model	Beta In	T	Sig.	Partial Correlation
1 ZCRITICALITY	.159 ^a	1.175	.245	.153
ZLN_OUTSOURCING_EXP	.027 ^a	.216	.830	.028
ZLN_RELN_LENGTH	.091 ^a	.722	.473	.094
ZLN_FIRM_SIZE	-.008 ^a	-.060	.953	-.008
ZCULTURAL_DISTANCE	.169 ^a	1.327	.190	.172
ZFLEXIBILITY	.200 ^a	1.642	.106	.211
ZMONITORING	.076 ^a	.537	.593	.070
ZSHARED_UNDERSTANDING	.207 ^a	1.687	.097	.216
ZINFO_EXCHANGE	.167 ^a	1.358	.180	.176

a. Predictors in the Model: (Constant), ZTS_INVESTMENTS

b. Dependent Variable: LEARNING_OUTCOMES

b
Excluded Variables

Model	Collinearity Statistics		
	Tolerance	VIF	Minimum Tolerance
1 ZCRITICALITY	.826	1.211	.826
ZLN_OUTSOURCING_EXP	.999	1.001	.999
ZLN_RELN_LENGTH	.974	1.027	.974
ZLN_FIRM_SIZE	.969	1.032	.969
ZCULTURAL_DISTANCE	.930	1.076	.930
ZFLEXIBILITY	1.000	1.000	1.000
ZMONITORING	.775	1.290	.775
ZSHARED_UNDERSTANDING	.986	1.014	.986
ZINFO_EXCHANGE	.992	1.008	.992

b. Dependent Variable: LEARNING_OUTCOMES

a
Collinearity Diagnostics

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	ZTS_INVESTMENTS
1	1	1.008	1.000	.50	.50
	2	.992	1.008	.50	.50

a. Dependent Variable: LEARNING_OUTCOMES

APPENDIX C-4

Salient governance mechanisms analysis – *High-risk* risk profile

Regression

Notes			
Input	Output Created Comments	Data	17-Feb-2012 14:26:20
		Active Dataset	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav
		Filter	DataSet1
		Weight	CONDITIONAL_MEDIAN_RISK_GROUP = 4 (FILTER)
		Split File	<none>
		N of Rows in Working Data	<none>
		File	53
Missing Value Handling		Definition of Missing Cases Used	User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.
	Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT LEARNING_OUTCOMES /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE.
Resources		Processor Time	00:00:00.047
		Elapsed Time	00:00:00.040
		Memory Required	6148 bytes
		Additional Memory Required for Residual Plots	0 bytes

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	ZSHARED_UNDERSTANDING		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	ZCULTURAL_DISTANCE		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	ZTS_INVESTMENTS		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: LEARNING_OUTCOMES

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.399 ^a	.159	.143	2.37768606	.159	9.643	1
2	.511 ^b	.262	.232	2.25019060	.103	6.943	1
3	.565 ^c	.319	.277	2.18315439	.057	4.118	1

a. Predictors: (Constant), ZSHARED_UNDERSTANDING

b. Predictors: (Constant), ZSHARED_UNDERSTANDING, ZCULTURAL_DISTANCE

c. Predictors: (Constant), ZSHARED_UNDERSTANDING, ZCULTURAL_DISTANCE, ZTS_INVESTMENTS

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	51	.003
2	50	.011
3	49	.048

ANOVA^d

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	54.518	1	54.518	9.643	.003 ^a
	Residual	288.323	51	5.653		
	Total	342.841	52			
2	Regression	89.673	2	44.837	8.855	.001 ^b
	Residual	253.168	50	5.063		
	Total	342.841	52			
3	Regression	109.299	3	36.433	7.644	.000 ^c
	Residual	233.542	49	4.766		
	Total	342.841	52			

a. Predictors: (Constant), ZSHARED_UNDERSTANDING

b. Predictors: (Constant), ZSHARED_UNDERSTANDING, ZCULTURAL_DISTANCE

c. Predictors: (Constant), ZSHARED_UNDERSTANDING, ZCULTURAL_DISTANCE, ZTS_INVESTMENTS

d. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.006	.411		31.638	.000
ZSHARED_UNDERSTANDING	1.098	.353	.399	3.105	.003
2 (Constant)	12.786	.398		32.139	.000
ZSHARED_UNDERSTANDING	1.031	.335	.375	3.075	.003
ZCULTURAL_DISTANCE	-1.189	.451	-.321	-2.635	.011
3 (Constant)	12.959	.395		32.789	.000
ZSHARED_UNDERSTANDING	1.084	.326	.394	3.319	.002
ZCULTURAL_DISTANCE	-1.158	.438	-.313	-2.644	.011
ZTS_INVESTMENTS	.615	.303	.240	2.029	.048

a. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZSHARED_UNDERSTANDING	1.000	1.000
2 (Constant)		
ZSHARED_UNDERSTANDING	.994	1.006
ZCULTURAL_DISTANCE	.994	1.006
3 (Constant)		
ZSHARED_UNDERSTANDING	.988	1.012
ZCULTURAL_DISTANCE	.993	1.007
ZTS_INVESTMENTS	.993	1.007

a. Dependent Variable: LEARNING_OUTCOMES

d
Excluded Variables

Model	Beta In	T	Sig.	Partial Correlation
1 ZCRITICALITY	-.001 ^a	-.009	.992	-.001
ZLN_OUTSOURCING_EXP	.123 ^a	.935	.354	.131
ZLN_RELN_LENGTH	.083 ^a	.640	.525	.090
ZLN_FIRM_SIZE	-.068 ^a	-.512	.611	-.072
ZCULTURAL_DISTANCE	-.321 ^a	-2.635	.011	-.349
ZFLEXIBILITY	-.028 ^a	-.189	.851	-.027
ZMONITORING	-.038 ^a	-.283	.779	-.040
ZTS_INVESTMENTS	.251 ^a	2.005	.050	.273
ZINFO_EXCHANGE	.219 ^a	1.524	.134	.211
2 ZCRITICALITY	-.062 ^b	-.493	.624	-.070
ZLN_OUTSOURCING_EXP	.008 ^b	.058	.954	.008
ZLN_RELN_LENGTH	.047 ^b	.377	.708	.054
ZLN_FIRM_SIZE	-.125 ^b	-.983	.330	-.139
ZFLEXIBILITY	.002 ^b	.017	.987	.002
ZMONITORING	-.061 ^b	-.470	.640	-.067
ZTS_INVESTMENTS	.240 ^b	2.029	.048	.278
ZINFO_EXCHANGE	.190 ^b	1.389	.171	.195
3 ZCRITICALITY	-.075 ^c	-.616	.540	-.089
ZLN_OUTSOURCING_EXP	.010 ^c	.080	.937	.012
ZLN_RELN_LENGTH	.083 ^c	.689	.494	.099
ZLN_FIRM_SIZE	-.108 ^c	-.871	.388	-.125
ZFLEXIBILITY	.017 ^c	.125	.901	.018
ZMONITORING	-.107 ^c	-.848	.401	-.122
ZINFO_EXCHANGE	.155 ^c	1.146	.257	.163

a. Predictors in the Model: (Constant), ZSHARED_UNDERSTANDING

b. Predictors in the Model: (Constant), ZSHARED_UNDERSTANDING, ZCULTURAL_DISTANCE

c. Predictors in the Model: (Constant), ZSHARED_UNDERSTANDING, ZCULTURAL_DISTANCE, ZTS_INVESTMENTS

d. Dependent Variable: LEARNING_OUTCOMES

Excluded Variables^d

Model		Collinearity Statistics		
		Tolerance	VIF	Minimum Tolerance
1	ZCRITICALITY	.994	1.006	.994
	ZLN_OUTSOURCING_EXP	.958	1.044	.958
	ZLN_RELN_LENGTH	1.000	1.000	1.000
	ZLN_FIRM_SIZE	.941	1.062	.941
	ZCULTURAL_DISTANCE	.994	1.006	.994
	ZFLEXIBILITY	.774	1.292	.774
	ZMONITORING	.908	1.101	.908
	ZTS_INVESTMENTS	.994	1.006	.994
	ZINFO_EXCHANGE	.778	1.286	.778
2	ZCRITICALITY	.961	1.041	.961
	ZLN_OUTSOURCING_EXP	.838	1.194	.838
	ZLN_RELN_LENGTH	.987	1.013	.981
	ZLN_FIRM_SIZE	.917	1.091	.917
	ZFLEXIBILITY	.769	1.301	.765
	ZMONITORING	.904	1.106	.904
	ZTS_INVESTMENTS	.993	1.007	.988
	ZINFO_EXCHANGE	.772	1.295	.772
3	ZCRITICALITY	.958	1.044	.958
	ZLN_OUTSOURCING_EXP	.838	1.194	.838
	ZLN_RELN_LENGTH	.966	1.035	.966
	ZLN_FIRM_SIZE	.912	1.096	.912
	ZFLEXIBILITY	.766	1.305	.764
	ZMONITORING	.878	1.140	.878
	ZINFO_EXCHANGE	.757	1.321	.757

d. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	ZSHARED_UNDERSTANDING
1	1	1.607	1.000	.20	.20
	2	.393	2.023	.80	.80
2	1	1.665	1.000	.17	.17
	2	.959	1.317	.00	.07
	3	.376	2.103	.82	.77
3	1	1.718	1.000	.16	.14
	2	.984	1.321	.00	.00
	3	.938	1.353	.01	.12
	4	.360	2.186	.84	.74

a. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions	
		ZCULTURAL_DI STANCE	ZTS_INVESTME NTS
1	1		
	2		
2	1	.05	
	2	.89	
	3	.07	
3	1	.04	.04
	2	.49	.47
	3	.40	.42
	4	.07	.07

a. Dependent Variable: LEARNING_OUTCOMES

APPENDIX C-5

Salient governance mechanisms analysis – *Total Sample*

Regression

Notes		
	Output Created Comments	17-Feb-2012 14:45:50
Input	Data	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	218
Missing Value Handling	Definition of Missing Cases Used	User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.
	Syntax	REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT LEARNING_OUTCOMES /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZFLEXIBILITY ZMONITORING ZTS_INVESTMENTS ZSHARED_UNDERSTANDING ZINFO_EXCHANGE.
Resources	Processor Time	00:00:00.016
	Elapsed Time	00:00:00.034
	Memory Required	6148 bytes
	Additional Memory Required for Residual Plots	0 bytes

[DataSet1]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\DISSERT_DATA.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	ZINFO_EXCHANGE		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	ZTS_INVESTMENTS		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	ZSHARED_UNDERSTANDING		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
4	ZLN_RELN_LENGTH		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: LEARNING_OUTCOMES

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.342 ^a	.117	.113	2.74245645	.117	28.595	1
2	.386 ^b	.149	.141	2.69787733	.032	8.197	1
3	.420 ^c	.176	.165	2.66084139	.027	7.027	1
4	.450 ^d	.203	.188	2.62433502	.026	6.995	1

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZTS_INVESTMENTS

c. Predictors: (Constant), ZINFO_EXCHANGE, ZTS_INVESTMENTS, ZSHARED_UNDERSTANDING

d. Predictors: (Constant), ZINFO_EXCHANGE, ZTS_INVESTMENTS, ZSHARED_UNDERSTANDING, ZLN_RELN_LENGTH

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	216	.000
2	215	.005
3	214	.009
4	213	.009

ANOVA^e

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	215.064	1	215.064	28.595	.000 ^a
Residual	1624.551	216	7.521		
Total	1839.615	217			
2 Regression	274.728	2	137.364	18.872	.000 ^b
Residual	1564.887	215	7.279		
Total	1839.615	217			
3 Regression	324.478	3	108.159	15.277	.000 ^c
Residual	1515.136	214	7.080		
Total	1839.615	217			
4 Regression	372.655	4	93.164	13.527	.000 ^d
Residual	1466.960	213	6.887		
Total	1839.615	217			

a. Predictors: (Constant), ZINFO_EXCHANGE

b. Predictors: (Constant), ZINFO_EXCHANGE, ZTS_INVESTMENTS

c. Predictors: (Constant), ZINFO_EXCHANGE, ZTS_INVESTMENTS, ZSHARED_UNDERSTANDING

d. Predictors: (Constant), ZINFO_EXCHANGE, ZTS_INVESTMENTS, ZSHARED_UNDERSTANDING, ZLN_RELN_LENGTH

e. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	12.809	.186		68.962	.000
ZINFO_EXCHANGE	.996	.186	.342	5.347	.000
2 (Constant)	12.809	.183		70.102	.000
ZINFO_EXCHANGE	.925	.185	.318	5.005	.000
ZTS_INVESTMENTS	.529	.185	.182	2.863	.005
3 (Constant)	12.809	.180		71.077	.000
ZINFO_EXCHANGE	.612	.217	.210	2.817	.005
ZTS_INVESTMENTS	.524	.182	.180	2.875	.004
ZSHARED_UNDERSTANDING	.573	.216	.197	2.651	.009
4 (Constant)	12.809	.178		72.066	.000
ZINFO_EXCHANGE	.616	.214	.211	2.874	.004
ZTS_INVESTMENTS	.558	.180	.192	3.098	.002
ZSHARED_UNDERSTANDING	.611	.214	.210	2.862	.005
ZLN_RELN_LENGTH	.474	.179	.163	2.645	.009

a. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	ZINFO_EXCHANGE	1.000	1.000
2	(Constant)		
	ZINFO_EXCHANGE	.982	1.018
	ZTS_INVESTMENTS	.982	1.018
3	(Constant)		
	ZINFO_EXCHANGE	.692	1.446
	ZTS_INVESTMENTS	.982	1.018
	ZSHARED_UNDERSTANDING	.699	1.430
4	(Constant)		
	ZINFO_EXCHANGE	.692	1.446
	ZTS_INVESTMENTS	.977	1.024
	ZSHARED_UNDERSTANDING	.696	1.437
	ZLN_RELN_LENGTH	.986	1.014

a. Dependent Variable: LEARNING_OUTCOMES

Excluded Variables^e

Model	Beta In	T	Sig.	Partial Correlation
1	ZCRITICALITY ^a .067	1.051	.294	.071
	ZLN_OUTSOURCING_EXP ^a .101	1.581	.115	.107
	ZLN_RELN_LENGTH ^a .137	2.156	.032	.145
	ZLN_FIRM_SIZE ^a .007	.107	.915	.007
	ZCULTURAL_DISTANCE ^a .068	1.066	.288	.072
	ZFLEXIBILITY ^a .061	.929	.354	.063
	ZMONITORING ^a -.021	-.305	.761	-.021
	ZTS_INVESTMENTS ^a .182	2.863	.005	.192
	ZSHARED_UNDERSTANDING ^a .199	2.637	.009	.177
2	ZCRITICALITY ^b .026	.399	.690	.027
	ZLN_OUTSOURCING_EXP ^b .099	1.572	.117	.107
	ZLN_RELN_LENGTH ^b .151	2.415	.017	.163
	ZLN_FIRM_SIZE ^b -.014	-.215	.830	-.015
	ZCULTURAL_DISTANCE ^b .046	.719	.473	.049
	ZFLEXIBILITY ^b .043	.666	.506	.045
	ZMONITORING ^b -.101	-1.378	.170	-.094
	ZSHARED_UNDERSTANDING ^b .197	2.651	.009	.178

Excluded Variables^e cont'd

3	ZCRITICALITY	.041 ^c	.645	.520	.044
	ZLN_OUTSOURCING_EXP	.080 ^c	1.287	.200	.088
	ZLN_RELN_LENGTH	.163 ^c	2.645	.009	.178
	ZLN_FIRM_SIZE	.028 ^c	.428	.669	.029
	ZCULTURAL_DISTANCE	.040 ^c	.632	.528	.043
	ZFLEXIBILITY	.006 ^c	.093	.926	.006
	ZMONITORING	-.100 ^c	-1.388	.167	-.095
4	ZCRITICALITY	.048 ^d	.754	.452	.052
	ZLN_OUTSOURCING_EXP	.017 ^d	.252	.802	.017
	ZLN_FIRM_SIZE	.019 ^d	.304	.761	.021
	ZCULTURAL_DISTANCE	.034 ^d	.550	.583	.038
	ZFLEXIBILITY	-.004 ^d	-.061	.951	-.004
	ZMONITORING	-.119 ^d	-1.670	.096	-.114

a. Predictors in the Model: (Constant), ZINFO_EXCHANGE

b. Predictors in the Model: (Constant), ZINFO_EXCHANGE, ZTS_INVESTMENTS

c. Predictors in the Model: (Constant), ZINFO_EXCHANGE, ZTS_INVESTMENTS, ZSHARED_UNDERSTANDING

d. Predictors in the Model: (Constant), ZINFO_EXCHANGE, ZTS_INVESTMENTS, ZSHARED_UNDERSTANDING, ZLN_RELN_LENGTH

e. Dependent Variable: LEARNING_OUTCOMES

Excluded Variables^e

Model		Collinearity Statistics		
		Tolerance	VIF	Minimum Tolerance
1	ZCRITICALITY	.999	1.001	.999
	ZLN_OUTSOURCING_EXP	.995	1.005	.995
	ZLN_RELN_LENGTH	.996	1.004	.996
	ZLN_FIRM_SIZE	.997	1.003	.997
	ZCULTURAL_DISTANCE	.998	1.002	.998
	ZFLEXIBILITY	.959	1.043	.959
	ZMONITORING	.836	1.195	.836
	ZTS_INVESTMENTS	.982	1.018	.982
	ZSHARED_UNDERSTANDING	.699	1.430	.699
2	ZCRITICALITY	.943	1.061	.927
	ZLN_OUTSOURCING_EXP	.994	1.006	.977
	ZLN_RELN_LENGTH	.991	1.009	.977
	ZLN_FIRM_SIZE	.984	1.016	.970
	ZCULTURAL_DISTANCE	.981	1.019	.966
	ZFLEXIBILITY	.950	1.053	.947
	ZMONITORING	.738	1.355	.738
	ZSHARED_UNDERSTANDING	.699	1.430	.692
3	ZCRITICALITY	.935	1.069	.692
	ZLN_OUTSOURCING_EXP	.981	1.020	.690
	ZLN_RELN_LENGTH	.986	1.014	.692
	ZLN_FIRM_SIZE	.928	1.078	.659
	ZCULTURAL_DISTANCE	.980	1.020	.692
	ZFLEXIBILITY	.904	1.107	.665
	ZMONITORING	.738	1.355	.615
4	ZCRITICALITY	.934	1.071	.690
	ZLN_OUTSOURCING_EXP	.819	1.220	.679
	ZLN_FIRM_SIZE	.925	1.081	.657
	ZCULTURAL_DISTANCE	.979	1.022	.692
	ZFLEXIBILITY	.900	1.111	.661
	ZMONITORING	.732	1.367	.614

e. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	ZINFO_EXCHAN GE	ZTS_INVESTME NTS
1	1	1.000	1.000	.50	.50	
	2	1.000	1.000	.50	.50	
2	1	1.133	1.000	.00	.43	.43
	2	1.000	1.065	1.00	.00	.00
	3	.867	1.144	.00	.57	.57
3	1	1.588	1.000	.00	.21	.04
	2	1.000	1.260	1.00	.00	.00
	3	.963	1.284	.00	.01	.95
	4	.449	1.880	.00	.78	.01
4	1	1.614	1.000	.00	.19	.04
	2	1.017	1.259	.00	.03	.34
	3	1.000	1.270	1.00	.00	.00
	4	.921	1.324	.00	.00	.60
	5	.448	1.898	.00	.77	.01

a. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions	
		ZSHARED_UNDERSTANDING	ZLN_RELN_LENGTH
1	1		
	2		
2	1		
	2		
	3		
3	1	.20	
	2	.00	
	3	.04	
	4	.76	
4	1	.19	.02
	2	.04	.52
	3	.00	.00
	4	.01	.45
	5	.76	.00

a. Dependent Variable: LEARNING_OUTCOMES

APPENDIX C-6

Hypotheses tests for fit as profile deviation – learning outcomes

Regression

Notes	
Output Created Comments Input Data Active Dataset Filter Weight Split File N of Rows in Working Data File Missing Value Handling Definition of Missing Cases Used Syntax Resources Processor Time Elapsed Time Memory Required Additional Memory Required for Residual Plots	17-Feb-2012 18:10:29 C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\LEARNING_OUTCOMES\DISSERT_CONDITIONALMEDIAN_PROFDEV_LEARNOUTCOMES.sav DataSet2 SAMPLE_TYPE = 'S' (FILTER) <none> <none> 131 User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used. REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT LEARNING_OUTCOMES /METHOD=STEPWISE ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE /METHOD=ENTER ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZMISALIGN_OUTC ZSTRAT_IMPORT /METHOD=ENTER ZCRITICALITY ZLN_OUTSOURCING_EXP ZLN_RELN_LENGTH ZLN_FIRM_SIZE ZCULTURAL_DISTANCE ZMISALIGN_OUTC ZSTRAT_IMPORT INT_STRATIMPORT_LRNOUTC. 00:00:00.015 00:00:00.020 5700 bytes 0 bytes

[DataSet2]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Profile_Deviation\FIRSTORDER\CONDITIONAL_MEDIAN\LEARNING_OUTCOMES\DISSERT_CONDITIONALMEDIAN_PROFDEV_LEARNOUTCOMES.sav

Warnings

No variables were entered into the equation.

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZLN_FIRM_SIZE, ZLN_OUTSOURCING_EXP, ZMISALIGN_OUTC, ZCRITICALITY, ZLN_RELN_LENGTH ^a		Enter
2	INT_STRATIMPORT_LRNOUTC ^a		Enter

a. All requested variables entered.

b. Dependent Variable: LEARNING_OUTCOMES

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.235 ^a	.055	.002	1.797	.055	1.030	7
2	.265 ^b	.070	.009	1.790	.015	1.961	1

a. Predictors: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZLN_FIRM_SIZE, ZLN_OUTSOURCING_EXP, ZMISALIGN_OUTC, ZCRITICALITY, ZLN_RELN_LENGTH

b. Predictors: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZLN_FIRM_SIZE, ZLN_OUTSOURCING_EXP, ZMISALIGN_OUTC, ZCRITICALITY, ZLN_RELN_LENGTH, INT_STRATIMPORT_LRNOUTC

Model Summary

Model	Change Statistics	
	df2	Sig. F Change
1	123	.414
2	122	.164

ANOVA^c

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	23.292	7	3.327	1.030	.414 ^a
	Residual	397.378	123	3.231		
	Total	420.670	130			
2	Regression	29.579	8	3.697	1.153	.333 ^b
	Residual	391.091	122	3.206		
	Total	420.670	130			

a. Predictors: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZLN_FIRM_SIZE, ZLN_OUTSOURCING_EXP, ZMISALIGN_OUTC, ZCRITICALITY, ZLN_RELN_LENGTH

b. Predictors: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZLN_FIRM_SIZE, ZLN_OUTSOURCING_EXP, ZMISALIGN_OUTC, ZCRITICALITY, ZLN_RELN_LENGTH, INT_STRATIMPORT_LRNOUTC
c. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.029	.158		82.211	.000
ZCRITICALITY	-.103	.174	-.055	-.592	.555
ZLN_OUTSOURCING_EXP	.107	.181	.058	.594	.553
ZLN_RELN_LENGTH	.234	.184	.127	1.273	.206
ZLN_FIRM_SIZE	-.060	.166	-.032	-.362	.718
ZCULTURAL_DISTANCE	.117	.156	.067	.751	.454
ZMISALIGN_OUTC	-.286	.164	-.159	-1.741	.084
ZSTRAT_IMPORT	.124	.165	.069	.755	.452
2 (Constant)	13.037	.158		82.533	.000
ZCRITICALITY	-.094	.174	-.050	-.541	.590
ZLN_OUTSOURCING_EXP	.129	.181	.070	.714	.477
ZLN_RELN_LENGTH	.211	.184	.114	1.146	.254
ZLN_FIRM_SIZE	-.054	.166	-.029	-.328	.744
ZCULTURAL_DISTANCE	.115	.155	.066	.744	.458
ZMISALIGN_OUTC	-.295	.164	-.164	-1.802	.074
ZSTRAT_IMPORT	.122	.164	.068	.744	.458
INT_STRATIMPORT_LRNOUTC	.222	.159	.123	1.400	.164

a. Dependent Variable: LEARNING_OUTCOMES

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZCRITICALITY	.896	1.116
ZLN_OUTSOURCING_EXP	.809	1.235
ZLN_RELN_LENGTH	.773	1.294
ZLN_FIRM_SIZE	.957	1.045
ZCULTURAL_DISTANCE	.967	1.034
ZMISALIGN_OUTC	.920	1.087
ZSTRAT_IMPORT	.916	1.092
2 (Constant)		
ZCRITICALITY	.894	1.118
ZLN_OUTSOURCING_EXP	.804	1.244
ZLN_RELN_LENGTH	.767	1.305
ZLN_FIRM_SIZE	.956	1.046
ZCULTURAL_DISTANCE	.967	1.034
ZMISALIGN_OUTC	.918	1.089
ZSTRAT_IMPORT	.916	1.092
INT_STRATIMPORT_LRNOUTC	.983	1.017

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
ZCRITICALITY	.896	1.116
ZLN_OUTSOURCING_EXP	.809	1.235
ZLN_RELN_LENGTH	.773	1.294
ZLN_FIRM_SIZE	.957	1.045
ZCULTURAL_DISTANCE	.967	1.034
ZMISALIGN_OUTC	.920	1.087
ZSTRAT_IMPORT	.916	1.092
2 (Constant)		
ZCRITICALITY	.894	1.118
ZLN_OUTSOURCING_EXP	.804	1.244
ZLN_RELN_LENGTH	.767	1.305
ZLN_FIRM_SIZE	.956	1.046
ZCULTURAL_DISTANCE	.967	1.034
ZMISALIGN_OUTC	.918	1.089
ZSTRAT_IMPORT	.916	1.092
INT_STRATIMPORT_LRNOUTC	.983	1.017

a. Dependent Variable: LEARNING_OUTCOMES

Excluded Variables^b

Model	Beta In	T	Sig.	Partial Correlation
1 INT_STRATIMPORT_LRNOUTC	.123 ^a	1.400	.164	.126

a. Predictors in the Model: (Constant), ZSTRAT_IMPORT, ZCULTURAL_DISTANCE, ZLN_FIRM_SIZE, ZLN_OUTSOURCING_EXP, ZMISALIGN_OUTC, ZCRITICALITY, ZLN_RELN_LENGTH

b. Dependent Variable: LEARNING_OUTCOMES

Excluded Variables^b

Model	Collinearity Statistics		
	Tolerance	VIF	Minimum Tolerance
1 INT_STRATIMPORT_LRNOUTC	.983	1.017	.767

b. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	ZCRITICALITY	ZLN_OUTSOURCING_EXP
1	1	1.624	1.000	.00	.06	.15
	2	1.186	1.170	.01	.31	.01
	3	1.122	1.203	.09	.00	.02
	4	1.073	1.230	.43	.02	.02
	5	.914	1.333	.36	.00	.14
	6	.873	1.364	.02	.03	.08
	7	.710	1.513	.07	.44	.08
	8	.498	1.806	.02	.14	.49
2	1	1.627	1.000	.00	.06	.15
	2	1.188	1.170	.02	.30	.02
	3	1.143	1.193	.10	.00	.04
	4	1.075	1.230	.38	.01	.02
	5	1.020	1.263	.03	.00	.01
	6	.914	1.334	.36	.00	.14
	7	.835	1.396	.02	.05	.04
	8	.706	1.518	.08	.42	.08
	9	.492	1.818	.02	.14	.51

a. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions			
		ZLN_RELN_LEN GTH	ZLN_FIRM_SIZE	ZCULTURAL_DI STANCE	ZMISALIGN_OU TC
1	1	.16	.00	.00	.04
	2	.05	.26	.01	.04
	3	.00	.00	.42	.30
	4	.01	.26	.07	.01
	5	.04	.09	.01	.10
	6	.02	.09	.40	.30
	7	.11	.24	.00	.00
	8	.60	.06	.08	.21
2	1	.16	.00	.00	.04
	2	.05	.25	.01	.02
	3	.00	.01	.25	.30
	4	.01	.24	.14	.02
	5	.02	.04	.21	.00
	6	.04	.09	.01	.10
	7	.00	.06	.29	.33
	8	.10	.26	.00	.00
	9	.62	.05	.07	.19

a. Dependent Variable: LEARNING_OUTCOMES

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions	
		ZSTRAT_IMPORT T	INT_STRATIMP ORT_LRNOUTC
1	1	.09	
	2	.08	
	3	.00	
	4	.07	
	5	.26	
	6	.11	
	7	.33	
	8	.06	
2	1	.09	.00
	2	.08	.01
	3	.01	.12
	4	.06	.01
	5	.03	.60
	6	.26	.00
	7	.11	.21
	8	.31	.02
	9	.06	.02

a. Dependent Variable: LEARNING_OUTCOMES

APPENDIX D

Governance mechanisms – Cluster analysis

Quick Cluster

		Notes
Input	Output Created Comments	06-Jul-2011 18:35:36
	Data	C:\Users\Ravi\Dropbox\Outsourcing\DATA\DATA_FOR_ANALYSIS\OVERAL_DATA\DISSERT_DATA.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data	218
	File	
Missing Value Handling	Definition of Missing Cases Used	User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any clustering variable used.
	Syntax	QUICK CLUSTER ZFLEXIBILITY ZMONITORING ZCOMMITMENT ZSHARED_UNDERSTANDING ZINFO_EXCHANGE /MISSING=LISTWISE /CRITERIA=CLUSTER(4) MXITER(20) CONVERGE(0) /METHOD=KMEANS(NOUPDATE) /SAVE CLUSTER /PRINT INITIAL ANOVA.
Resources	Processor Time	00:00:00.078
	Elapsed Time	00:00:00.057
	Workspace Required	1344 bytes
Variables Created or Modified	QCL_1	Cluster Number of Case

[DataSet1]

C:\Users\Ravi\Dropbox\Outsourcing\DATA\DATA_FOR_ANALYSIS\OVERAL_DATA\DISSERT_DATA.sav

Initial Cluster Centers

	Cluster			
	1	2	3	4
ZFLEXIBILITY	.42968	-1.52917	.91940	-2.01888
ZMONITORING	.78508	-2.15608	1.52038	.04979
ZCOMMITMENT	-2.49943	-3.07943	1.56055	1.56055
ZSHARED_UNDERSTANDING	-3.07292	.70614	2.12329	-3.07292
ZINFO_EXCHANGE	-.44300	-1.65968	.36812	-3.28193

Iteration History^a

Iteration	Change in Cluster Centers			
	1	2	3	4
1	2.706	2.704	2.421	2.745
2	.182	.175	.114	.261
3	.160	.134	.095	.184
4	.095	.085	.047	.200
5	.057	.109	.018	.193
6	.052	.170	.035	.192
7	.123	.064	.039	.106
8	.071	.070	.014	.178
9	.061	.123	.027	.243
10	.033	.137	.024	.161
11	.088	.090	.054	.132
12	.115	.083	.078	.109
13	.153	.106	.038	.307
14	.152	.071	.057	.084
15	.124	.018	.071	.080
16	.110	.039	.016	.107
17	.080	.022	.036	.047
18	.023	.000	.017	.000
19	.029	.035	.018	.000
20	.000	.000	.000	.000

a. Convergence achieved due to no or small change in cluster centers. The maximum absolute coordinate change for any center is .000. The current iteration is 20. The minimum distance between initial centers is 5.347.

Final Cluster Centers

	Cluster			
	1	2	3	4
ZFLEXIBILITY	.05701	-.32179	.58189	-.85586
ZMONITORING	.28097	-.59179	.74037	-1.16864
ZCOMMITMENT	.33629	-.62402	.51533	-.73754
ZSHARED_UNDERSTANDING	-.53532	.46082	.71914	-1.30486
ZINFO_EXCHANGE	-.36724	.25756	.72542	-1.30047

ANOVA

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
ZFLEXIBILITY	18.721	3	.752	214	24.909	.000
ZMONITORING	36.934	3	.496	214	74.427	.000
ZCOMMITMENT	21.703	3	.710	214	30.578	.000
ZSHARED_UNDERSTANDING	41.771	3	.428	214	97.497	.000
ZINFO_EXCHANGE	36.446	3	.503	214	72.445	.000

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

**Number of Cases in each
Cluster**

Cluster	1	58.000
	2	51.000
	3	74.000
	4	35.000
Valid		218.000
Missing		.000

APPENDIX E

Gestalts – T-tests – Outsourcing Performance

T-Test

			Notes
Output Created	Comments		03-Dec-2011 17:31:05
Input	Data		C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Gestalts\FIT_GESTALTS.sav
	Active Dataset		DataSet3
	Filter		RELATIONSHIP_GROUP = "STRATEGIC_PARTNERSHIP" (FILTER)
	Weight		<none>
	Split File		<none>
	N of Rows in Working		32
	Data File		
Missing Value Handling	Definition of Missing		User defined missing values are treated as missing.
	Cases Used		Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
	Syntax		T-TEST GROUPS=MATCH(1 0) /MISSING=ANALYSIS /VARIABLES=PERFORMANCE /CRITERIA=CI(.95).
Resources	Processor Time		00:00:00.000
	Elapsed Time		00:00:00.000

[DataSet3]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Gestalts\FIT_GESTALTS.sav

Group Statistics

	MATCH	N	Mean	Std. Deviation	Std. Error Mean
PERFORMANCE	1	19	17.26	1.408	.323
	0	13	16.86	2.125	.589

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
PERFORMANCE	Equal variances assumed	4.824	.036	.646	30
	Equal variances not assumed			.599	19.139

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
PERFORMANCE	Equal variances assumed	.523	.402	.623
	Equal variances not assumed	.556	.402	.672

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
PERFORMANCE	Equal variances assumed	-.870	1.675
	Equal variances not assumed	-1.004	1.808

T-Test

Notes

Output Created		03-Dec-2011 17:39:11
Comments		
Input	Data	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Gestalts\FIT_GESTALTS.sav
	Active Dataset	DataSet3
	Filter	RELATIONSHIP_GROUP =
	Weight	"SELECTIVE_PARTNERSHIP" (FILTER)
	Split File	<none>
	N of Rows in Working Data	<none>
	File	26
Missing Value Handling	Definition of Missing Cases Used	User defined missing values are treated as missing. Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
	Syntax	T-TEST GROUPS=MATCH(1 0) /MISSING=ANALYSIS /VARIABLES=PERFORMANCE /CRITERIA=CI(.95).
Resources	Processor Time	00:00:00.016
	Elapsed Time	00:00:00.016

[DataSet3]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Gestalts\FIT_GESTALTS.sav

Group Statistics

MATCH		N	Mean	Std. Deviation	Std. Error Mean
PERFORMANCE	1	12	16.00	2.449	.707
	0	14	16.98	1.535	.410

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
PERFORMANCE	Equal variances assumed	.878	.358	-1.241	24
	Equal variances not assumed			-1.198	17.935

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
PERFORMANCE	Equal variances assumed	.227	-.980	.789
	Equal variances not assumed	.246	-.980	.818

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
PERFORMANCE	Equal variances assumed	-2.609	.650
	Equal variances not assumed	-2.698	.738

T-Test

Notes

Output Created Comments		03-Dec-2011 17:40:50
Input	Data	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Gestalts\FIT_GESTALTS.sav
	Active Dataset	DataSet3
	Filter	RELATIONSHIP_GROUP = "ARM'S LENGTH RELATIONSHIP" (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	28
Missing Value Handling	Definition of Missing Cases Used	User defined missing values are treated as missing. Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
	Syntax	T-TEST GROUPS=MATCH(1 0) /MISSING=ANALYSIS /VARIABLES=PERFORMANCE /CRITERIA=CI(.95).
Resources	Processor Time	00:00:00.000
	Elapsed Time	00:00:00.015

[DataSet3]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Gestalts\FIT_GESTALTS.sav

Group Statistics

	MATCH	N	Mean	Std. Deviation	Std. Error Mean
PERFORMANCE	1	25	11.78	2.438	.488
	0	3	14.91	3.004	1.734

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
PERFORMANCE	Equal variances assumed	.030	.864	-2.061	26
	Equal variances not assumed			-1.738	2.328

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
PERFORMANCE	Equal variances assumed	.049	-3.132	1.519
	Equal variances not assumed	.206	-3.132	1.802

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
PERFORMANCE	Equal variances assumed	-6.254	-.009
	Equal variances not assumed	-9.927	3.663

T-Test

Notes

Output Created Comments		03-Dec-2011 18:04:54
Input	Data	C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Gestalts\FIT_GESTALTS.sav
	Active Dataset	DataSet3
	Filter	RELATIONSHIP_GROUP = "ADVERSARIAL_RELATIONSHIP" (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data	24
	File	
Missing Value Handling	Definition of Missing Cases Used	User defined missing values are treated as missing. Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
	Syntax	T-TEST GROUPS=MATCH(1 0) /MISSING=ANALYSIS /VARIABLES=PERFORMANCE /CRITERIA=CI(.95).
Resources	Processor Time	00:00:00.015
	Elapsed Time	00:00:00.022

[DataSet3]

C:\Users\Ravi\Dropbox\Research\Outsourcing\Analysis\Fit_as_Gestalts\FIT_GESTALTS.sav

Group Statistics

	MATCH	N	Mean	Std. Deviation	Std. Error Mean
PERFORMANCE	1	9	13.75	1.171	.390
	0	15	12.16	2.096	.541

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
PERFORMANCE	Equal variances assumed	1.454	.241	2.070	22
	Equal variances not assumed			2.374	21.956

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
PERFORMANCE	Equal variances assumed	.050	1.584	.765
	Equal variances not assumed	.027	1.584	.667

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
PERFORMANCE	Equal variances assumed	-.003	3.171
	Equal variances not assumed	.200	2.968

REFERENCES

REFERENCES

- Amaral, J., & Tsay, A. A. (2009). How to Win “Spend” and Influence Partners: Lessons in Behavioral Operations from the Outsourcing Game. [10.1111/j.1937-5956.2009.01036.x]. *Production and Operations Management*, 18(6), 621-634.
- Anderson, E., & Weitz, B. (1992). The Use of Pledges to Build and Sustain Commitment in Distribution Channels. *Journal of Marketing Research*, 29(1), 18-34.
- Ang, S., & Cummings, L. L. (1997). Strategic Response to Institutional Influences on Information Systems Outsourcing. *Organization Science*, 8(3), 235-256.
- Argyres, N., & Mayer, K. (2007). Contract Design As a Firm Capability: An Integration of Learning And Transaction Cost Perspectives. *The Academy of Management Review ARCHIVE*, 32(4), 1060-1077.
- Argyres, N. S., Bercovitz, J., & Mayer, K. J. (2007). Complementarity and Evolution of Contractual Provisions: An Empirical Study of IT Services Contracts. [Article]. *Organization Science*, 18(1), 3-19.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating Nonresponse Bias in Mail Surveys. *Journal of Marketing Research*, 14(3), 396-402.
- Aron, R., Bandyopadhyay, S., Jayanty, S., & Pathak, P. (2008). Monitoring process quality in off-shore outsourcing: A model and findings from multi-country survey. *Journal of Operations Management*, 26(2), 303-321. doi: 10.1016/j.jom.2007.02.014
- Balakrishnan, K., Mohan, U., & Seshadri, S. (2008). Outsourcing of front-end business processes: Quality, information, and customer contact. *Journal of Operations Management*, 26(2), 288-302. doi: 10.1016/j.jom.2007.08.001
- Bardhan, I., Mithas, S., & Lin, S. (2007). Performance Impacts of Strategy, Information Technology Applications, and Business Process Outsourcing in U.S. Manufacturing Plants. [10.1111/j.1937-5956.2007.tb00293.x]. *Production and Operations Management*, 16(6), 747-762.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. [Article]. *Journal of Management*, 17(1), 99-99.
- Bendoly, E., & Swink, M. (2007). Moderating effects of information access on project management behavior, performance and perceptions. *Journal of Operations Management*, 25(3), 604-622. doi: 10.1016/j.jom.2006.02.009

- Bhalla, A., Sodhi, M. S., & Son, B.-G. (2008). Is more IT offshoring better?: An exploratory study of western companies offshoring to South East Asia. [10.1016/j.jom.2007.02.005]. *Journal of Operations Management*, 26(2), 322-335.
- Boyd, B. K., Dess, G. G., & Rasheed, A. M. A. (1993). Divergence between Archival and Perceptual Measures of the Environment: Causes and Consequences. *The Academy of Management Review*, 18(2), 204-226.
- Boyd, D. E., Spekman, R. E., Kamauff, J. W., & Werhane, P. (2007). Corporate Social Responsibility in Global Supply Chains: A Procedural Justice Perspective. [10.1016/j.lrp.2006.12.007]. *Long Range Planning*, 40(3), 341-356.
- Cao, M., & Zhang, Q. (2011). Supply chain collaboration: Impact on collaborative advantage and firm performance. [10.1016/j.jom.2010.12.008]. *Journal of Operations Management*, 29(3), 163-180.
- Carlile, P. R., & Rebentisch, E. S. (2003). Into the Black Box: The Knowledge Transformation Cycle. *Management Science*, 49(9), 1180-1195.
- Cheung, M.-S., Myers, M. B., & Mentzer, J. T. (2010). Does relationship learning lead to relationship value? A cross-national supply chain investigation. [10.1016/j.jom.2010.01.003]. *Journal of Operations Management*, 28(6), 472-487.
- Choi, T. Y., & Hartley, J. L. (1996). An exploration of supplier selection practices across the supply chain. [10.1016/S0272-6963(96)00091-5]. *Journal of Operations Management*, 14(4), 333-343.
- Choi, T. Y., & Krause, D. R. (2006). The supply base and its complexity: Implications for transaction costs, risks, responsiveness, and innovation. [10.1016/j.jom.2005.07.002]. *Journal of Operations Management*, 24(5), 637-652.
- Clark, K. B. (1989). Project Scope and Project Performance: The Effect of Parts Strategy and Supplier Involvement on Product Development. *Management Science*, 35(10), 1247-1263.
- Coase, R. H. (1937). The Nature of the Firm. *Economica*, 4(16), 386-405.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128-152.
- Cousins, P. D., Handfield, R. B., Lawson, B., & Petersen, K. J. (2006). Creating supply chain relational capital: The impact of formal and informal socialization processes. [10.1016/j.jom.2005.08.007]. *Journal of Operations Management*, 24(6), 851-863.

- Cousins, P. D., & Menguc, B. (2006). The implications of socialization and integration in supply chain management. [10.1016/j.jom.2005.09.001]. *Journal of Operations Management*, 24(5), 604-620.
- Cui, Z., Loch, C., Grossmann, B., & He, R. (2011). How Provider Selection and Management Contribute to Successful Innovation Outsourcing: An Empirical Study at Siemens. [10.1111/j.1937-5956.2011.01237.x]. *Production and Operations Management*, no-no.
- da Silveira, G. J. C. (2005). Market priorities, manufacturing configuration, and business performance: an empirical analysis of the order-winners framework. [10.1016/j.jom.2005.01.005]. *Journal of Operations Management*, 23(6), 662-675.
- De Jong, B. A., & Elfring, T. O. M. (2010). How does trust affect the performance of ongoing teams? The mediating role of reflexivity, monitoring, and effort. [Article]. *Academy of Management Journal*, 53(3), 535-549.
- Dillman, D. A. (1978). *Mail and telephone surveys: the total design method*: Wiley.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2008). *Internet, mail, and mixed-mode surveys: the tailored design method*: Wiley & Sons.
- Drazin, R., & Ven, A. H. V. d. (1985). Alternative Forms of Fit in Contingency Theory. *Administrative Science Quarterly*, 30(4), 514-539.
- Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. *The Academy of Management Review*, 14(1), 57-74.
- Ellram, L. M., Tate, W. L., & Billington, C. (2008). Offshore outsourcing of professional services: A transaction cost economics perspective. [10.1016/j.jom.2007.02.008]. *Journal of Operations Management*, 26(2), 148-163.
- Emerson, R. M. (1962). Power-Dependence Relations. *American Sociological Review*, 27(1), 31-41.
- Flynn, B. B., & Flynn, E. J. (2004). An exploratory study of the nature of cumulative capabilities. *Journal of Operations Management*, 22(5), 439-457. doi: 10.1016/j.jom.2004.03.002
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.
- Fowler, F. J. (2009). *Survey research methods*: Sage Publications.

- Fugate, B. S., Stank, T. P., & Mentzer, J. T. (2009). Linking improved knowledge management to operational and organizational performance. [10.1016/j.jom.2008.09.003]. *Journal of Operations Management*, 27(3), 247-264.
- Gatignon, H., Tushman, M. L., Smith, W., & Anderson, P. (2002). A Structural Approach to Assessing Innovation: Construct Development of Innovation Locus, Type, and Characteristics. *Management Science*, 48(9), 1103-1122.
- Germain, R., Claycomb, C., & Dröge, C. (2008). Supply chain variability, organizational structure, and performance: The moderating effect of demand unpredictability. *Journal of Operations Management*, 26(5), 557-570. doi: 10.1016/j.jom.2007.10.002
- Gilley, K. M., & Rasheed, A. (2000). Making More by Doing Less: An Analysis of Outsourcing and its Effects on Firm Performance. *Journal of Management*, 26(4), 763-790.
- Goffin, K., Lemke, F., & Szwejczewski, M. (2006). An exploratory study of 'close' supplier-manufacturer relationships. [10.1016/j.jom.2005.05.003]. *Journal of Operations Management*, 24(2), 189-209.
- Goo, J., Huang, C. D., & Hart, P. (2008). A Path to Successful IT Outsourcing: Interaction Between Service-Level Agreements and Commitment. [10.1111/j.1540-5915.2008.00200.x]. *Decision Sciences*, 39(3), 469-506.
- Gopal, A., & Koka, B. R. (2010). The Role of Contracts on Quality and Returns to Quality in Offshore Software Development Outsourcing. [10.1111/j.1540-5915.2010.00278.x]. *Decision Sciences*, 41(3), 491-516.
- Gottfredson, M., Puryear, R., & Phillips, S. (2005). Strategic Sourcing From Periphery to the Core. [Article]. *Harvard Business Review*, 83(2), 132-139.
- Grandcolas, U., Rettie, R., & Marusenko, K. (2003). Web Survey Bias: Sample or Mode Effect? [Article]. *Journal of Marketing Management*, 19(5/6), 541-561.
- Gray, J. V., Tomlin, B., & Roth, A. V. (2009). Outsourcing to a Powerful Contract Manufacturer: The Effect of Learning-by-Doing. [10.1111/j.1937-5956.2009.01024.x]. *Production and Operations Management*, 18(5), 487-505.
- Griffith, D. A., Harvey, M. G., & Lusch, R. F. (2006). Social exchange in supply chain relationships: The resulting benefits of procedural and distributive justice. [10.1016/j.jom.2005.03.003]. *Journal of Operations Management*, 24(2), 85-98.
- Grossman, S. J., & Hart, O. D. (1981). Implicit Contracts, Moral Hazard, and Unemployment. *The American Economic Review*, 71(2), 301-307.
- Hambrick, D. C. (1984). Taxonomic Approaches to Studying Strategy: Some Conceptual and Methodological Issues. *Journal of Management*, 10(1), 27-41.

- Handley, S. M., & Benton Jr, W. C. (2009). Unlocking the business outsourcing process model. [10.1016/j.jom.2008.11.002]. *Journal of Operations Management*, 27(5), 344-361.
- Harrigan, K. R. (1985). An Application of Clustering for Strategic Group Analysis. *Strategic Management Journal*, 6(1), 55-73.
- Hartley, J. L., Zirger, B. J., & Kamath, R. R. (1997). Managing the buyer-supplier interface for on-time performance in product development. [10.1016/S0272-6963(96)00089-7]. *Journal of Operations Management*, 15(1), 57-70.
- Heide, J. B. (1994). Interorganizational Governance in Marketing Channels. *The Journal of Marketing*, 58(1), 71-85.
- Heide, J. B., & John, G. (1992). Do Norms Matter in Marketing Relationships? *The Journal of Marketing*, 56(2), 32-44.
- Hill, T. (1993). *Manufacturing strategy: the strategic management of the manufacturing function*: Macmillan.
- Holcomb, T. R., & Hitt, M. A. (2007). Toward a model of strategic outsourcing. [10.1016/j.jom.2006.05.003]. *Journal of Operations Management*, 25(2), 464-481.
- Homans, G. C. (1958). Social Behavior as Exchange. *American Journal of Sociology*, 63(6), 597-606.
- Hu, L. t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. [10.1080/10705519909540118]. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.
- Hui, P. P., Davis-Blake, A., & Broschak, J. P. (2008). Managing Interdependence: The Effects of Outsourcing Structure on the Performance of Complex Projects*. [10.1111/j.1540-5915.2008.00180.x]. *Decision Sciences*, 39(1), 5-31.
- Ingram, P., & Simons, T. (2002). The Transfer of Experience in Groups of Organizations: Implications for Performance and Competition. *Management Science*, 48(12), 1517-1533.
- Jap, S. D., & Anderson, E. (2003). Safeguarding Interorganizational Performance and Continuity under Ex Post Opportunism. *Management Science*, 49(12), 1684-1701.
- Jap, S. D., & Ganesan, S. (2000). Control Mechanisms and the Relationship Life Cycle: Implications for Safeguarding Specific Investments and Developing Commitment. *Journal of Marketing Research*, 37(2), 227-245.
- Jeffries, F. L., & Reed, R. (2000). Trust and Adaptation in Relational Contracting. *The Academy of Management Review*, 25(4), 873-882.

- Jiang, B., Belohlav, J. A., & Young, S. T. (2007). Outsourcing impact on manufacturing firms' value: Evidence from Japan. [10.1016/j.jom.2006.12.002]. *Journal of Operations Management*, 25(4), 885-900.
- Kaufmann, L., & Carter, C. R. (2006). International supply relationships and non-financial performance—A comparison of U.S. and German practices. [10.1016/j.jom.2005.07.001]. *Journal of Operations Management*, 24(5), 653-675.
- Klassen, R. D., & Jacobs, J. (2001). Experimental comparison of Web, electronic and mail survey technologies in operations management. [10.1016/S0272-6963(01)00071-7]. *Journal of Operations Management*, 19(6), 713-728.
- Kogut, B., & Singh, H. (1988). The Effect of National Culture on the Choice of Entry Mode. *Journal of International Business Studies*, 19(3), 411-432.
- Kogut, B., & Zander, U. (1992). Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology. *Organization Science*, 3(3), 383-397.
- Koopmans, T. C. (1957). *Three essays on the state of economic science*: A.M. Kelley.
- Koufteros, X. A., Vonderembse, M. A., & Doll, W. J. (2002). Integrated product development practices and competitive capabilities: the effects of uncertainty, equivocality, and platform strategy. [10.1016/S0272-6963(02)00018-9]. *Journal of Operations Management*, 20(4), 331-355.
- Kroes, J. R., & Ghosh, S. (2010). Outsourcing congruence with competitive priorities: Impact on supply chain and firm performance. [10.1016/j.jom.2009.09.004]. *Journal of Operations Management*, 28(2), 124-143.
- Kumar, N., Scheer, L. K., & Steenkamp, J.-B. E. M. (1995). The Effects of Supplier Fairness on Vulnerable Resellers. *Journal of Marketing Research*, 32(1), 54-65.
- Langfred, C. W. (2004). Too Much of a Good Thing? Negative Effects of High Trust and Individual Autonomy in Self-Managing Teams. *The Academy of Management Journal*, 47(3), 385-399.
- Laseter, T. M., & Ramdas, K. (2002). Product types and supplier roles in product development: an exploratory analysis. *Engineering Management, IEEE Transactions on*, 49(2), 107-118.
- Lee, J.-N., Miranda, S. M., & Kim, Y.-M. (2004). IT Outsourcing Strategies: Universalistic, Contingency, and Configurational Explanations of Success. [Article]. *Information Systems Research*, 15(2), 110-131.
- Lessler, J. T., & Kalsbeek, W. D. (1992). *Nonsampling error in surveys*: Wiley.

- Lewis, M. W., Welsh, M. A., Gordon, E. D., & Green, S. G. (2002). Product Development Tensions: Exploring Contrasting Styles of Project Management. *The Academy of Management Journal*, 45(3), 546-564.
- Li, Y., Liu, Y., Li, M., & Wu, H. (2008). Transformational offshore outsourcing: Empirical evidence from alliances in China. [10.1016/j.jom.2007.02.011]. *Journal of Operations Management*, 26(2), 257-274.
- Li, Y., Xie, E., Teo, H.-H., & Peng, M. W. (2010). Formal control and social control in domestic and international buyer-supplier relationships. [10.1016/j.jom.2009.11.008]. *Journal of Operations Management*, 28(4), 333-344.
- Liu, Y., Luo, Y., & Liu, T. (2009). Governing buyer-supplier relationships through transactional and relational mechanisms: Evidence from China. [10.1016/j.jom.2008.09.004]. *Journal of Operations Management*, 27(4), 294-309.
- Lukas, B. A., Tan, J. J., & Hult, G. T. M. (2001). Strategic fit in transitional economies: The case of China's electronics industry. *Journal of Management*, 27(4), 409-429.
- MacNeil, I. R. (1980). *The New Social Contract: An Inquiry Into Modern Contractual Relations*: Yale University Press.
- Mantel, S. P., Tatikonda, M. V., & Liao, Y. (2006). A behavioral study of supply manager decision-making: Factors influencing make versus buy evaluation. [10.1016/j.jom.2005.09.007]. *Journal of Operations Management*, 24(6), 822-838.
- Mayer, K. J., & Argyres, N. S. (2004). Learning to Contract: Evidence from the Personal Computer Industry. *Organization Science*, 15(4), 394-410.
- McEvily, S. K., & Chakravarthy, B. (2002). The Persistence of Knowledge-Based Advantage: An Empirical Test for Product Performance and Technological Knowledge. *Strategic Management Journal*, 23(4), 285-305.
- McFadyen, M. A., & Cannella, A. A. J. (2004). Social Capital and Knowledge Creation: Diminishing Returns of the Number and Strength of Exchange. *The Academy of Management Journal*, 47(5), 735-746.
- McIvor, R. (2009). How the transaction cost and resource-based theories of the firm inform outsourcing evaluation. [10.1016/j.jom.2008.03.004]. *Journal of Operations Management*, 27(1), 45-63.
- Mehta, R., & Sivadas, E. (1995). Comparing response rates and response content in mail versus electronic mail surveys. *Journal of the Market Research Society*, 37(4), 429-439.

- Metters, R. (2008). A typology of offshoring and outsourcing in electronically transmitted services. [10.1016/j.jom.2007.02.004]. *Journal of Operations Management*, 26(2), 198-211.
- Miller, D. (1981). Toward a new contingency approach: The search for organizational gestalts. [Article]. *Journal of Management Studies*, 18(1), 1-26.
- Miller, J., & Roth, A. V. (1994). A Taxonomy of Manufacturing Strategies. *Management Science*, 40(3), 285-304.
- Milligan, G., & Cooper, M. (1985). An examination of procedures for determining the number of clusters in a data set. *Psychometrika*, 50(2), 159-179. doi: 10.1007/bf02294245
- Milligan, G. W., & Cooper, M. C. (1988). A study of standardization of variables in cluster analysis. *Journal of Classification*, 5(2), 181-204. doi: 10.1007/bf01897163
- Modi, S. B., & Mabert, V. A. (2007). Supplier development: Improving supplier performance through knowledge transfer. [10.1016/j.jom.2006.02.001]. *Journal of Operations Management*, 25(1), 42-64.
- Monczka, R. M., Petersen, K. J., Handfield, R. B., & Ragatz, G. L. (1998). Success Factors in Strategic Supplier Alliances: The Buying Company Perspective*. [10.1111/j.1540-5915.1998.tb01354.x]. *Decision Sciences*, 29(3), 553-577.
- Moore, G. C., & Benbasat, I. (1991). Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. [Article]. *Information Systems Research*, 2(3), 192-222.
- Morgan, N. A., Kaleka, A., & Gooner, R. A. (2007). Focal supplier opportunism in supermarket retailer category management. [10.1016/j.jom.2006.05.006]. *Journal of Operations Management*, 25(2), 512-527.
- Nahapiet, J., & Ghoshal, S. (1998). Social Capital, Intellectual Capital, and the Organizational Advantage. *The Academy of Management Review*, 23(2), 242-266.
- Narasimhan, R., & Kim, S. W. (2002). Effect of supply chain integration on the relationship between diversification and performance: evidence from Japanese and Korean firms. [10.1016/S0272-6963(02)00008-6]. *Journal of Operations Management*, 20(3), 303-323.
- Narasimhan, R., Nair, A., Griffith, D. A., Arlbjørn, J. S., & Bendoly, E. (2009). Lock-in situations in supply chains: A social exchange theoretic study of sourcing arrangements in buyer-supplier relationships. [10.1016/j.jom.2008.10.004]. *Journal of Operations Management*, 27(5), 374-389.
- Narasimhan, R., & Talluri, S. (2009). Perspectives on risk management in supply chains. [10.1016/j.jom.2009.02.001]. *Journal of Operations Management*, 27(2), 114-118.

- Narayanan, S., Balasubramanian, S., & Swaminathan, J. M. (2009). A Matter of Balance: Specialization, Task Variety, and Individual Learning in a Software Maintenance Environment. *Manage. Sci.*, 55(11), 1861-1876.
- Nidumolu, S. (1995). The Effect of Coordination and Uncertainty on Software Project Performance: Residual Performance Risk as an Intervening Variable. [Article]. *Information Systems Research*, 6(3), 191-219.
- Nyaga, G. N., Whipple, J. M., & Lynch, D. F. (2010). Examining supply chain relationships: Do buyer and supplier perspectives on collaborative relationships differ? [10.1016/j.jom.2009.07.005]. *Journal of Operations Management*, 28(2), 101-114.
- Ouchi, W. G. (1979). A Conceptual Framework for the Design of Organizational Control Mechanisms. *Management Science*, 25(9), 833-848.
- Paulraj, A., Lado, A. A., & Chen, I. J. (2008). Inter-organizational communication as a relational competency: Antecedents and performance outcomes in collaborative buyer-supplier relationships. [10.1016/j.jom.2007.04.001]. *Journal of Operations Management*, 26(1), 45-64.
- Petersen, K. J., Handfield, R. B., & Ragatz, G. L. (2005). Supplier integration into new product development: coordinating product, process and supply chain design. [10.1016/j.jom.2004.07.009]. *Journal of Operations Management*, 23(3-4), 371-388.
- Pich, M. T., Loch, C. H., & Meyer, A. d. (2002). On Uncertainty, Ambiguity, and Complexity in Project Management. *Management Science*, 48(8), 1008-1023.
- Podsakoff, P. M., MacKenzie, S. B., Jeong-Yeon, L., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. [Article]. *Journal of Applied Psychology*, 88(5), 879.
- Porter, M. E. (1979). How competitive forces shape strategy. [Article]. *Harvard Business Review*, 57(2), 137-145.
- Prahalad, C. K., & Hamel, G. (1990). The Core Competence of the Corporation. [Article]. *Harvard Business Review*, 68(3), 79-91.
- Prahinski, C., & Benton, W. C. (2004). Supplier evaluations: communication strategies to improve supplier performance. [10.1016/j.jom.2003.12.005]. *Journal of Operations Management*, 22(1), 39-62.
- Quinn, J. B. (1992). *Intelligent enterprise: a knowledge and service based paradigm for industry*: Free Press.

- Raz, T., & Michael, E. (2001). Use and benefits of tools for project risk management. [10.1016/S0263-7863(99)00036-8]. *International Journal of Project Management*, 19(1), 9-17.
- Rindfleisch, A., & Heide, J. B. (1997). Transaction Cost Analysis: Past, Present, and Future Applications. *The Journal of Marketing*, 61(4), 30-54.
- Rogelberg, S. G., & Stanton, J. M. (2007). Introduction. *Organizational Research Methods*, 10(2), 195-209.
- Schilling, M. A., & Steensma, H. K. (2002). Disentangling the Theories of Firm Boundaries: A Path Model and Empirical Test. *Organization Science*, 13(4), 387-401.
- Shapiro, D. L., Kirkman, B. L., & Courtney, H. G. (2007). Perceived causes and solutions of the translation problem in management research. [Article]. *Academy of Management Journal*, 50(2), 249-266.
- Shenhar, A. J. (2001). One Size does not Fit All Projects: Exploring Classical Contingency Domains. *Management Science*, 47(3), 394-414.
- Shenhar, A. J., & Dvir, D. (2007). How Projects Differ, And What to Do About It *The Wiley Guide to Managing Projects* (pp. 1265-1286): John Wiley & Sons, Inc.
- Shin, H., Collier, D. A., & Wilson, D. D. (2000). Supply management orientation and supplier/buyer performance. [10.1016/S0272-6963(99)00031-5]. *Journal of Operations Management*, 18(3), 317-333.
- Stock, G. N., & Tatikonda, M. V. (2000). A typology of project-level technology transfer processes. [10.1016/S0272-6963(00)00045-0]. *Journal of Operations Management*, 18(6), 719-737.
- Stock, G. N., & Tatikonda, M. V. (2008). The joint influence of technology uncertainty and interorganizational interaction on external technology integration success. [10.1016/j.jom.2007.04.003]. *Journal of Operations Management*, 26(1), 65-80.
- Stratman, J. K. (2008). Facilitating offshoring with enterprise technologies: Reducing operational friction in the governance and production of services. [10.1016/j.jom.2007.02.006]. *Journal of Operations Management*, 26(2), 275-287.
- Stringfellow, A., Teagarden, M. B., & Nie, W. (2008). Invisible costs in offshoring services work. [10.1016/j.jom.2007.02.009]. *Journal of Operations Management*, 26(2), 164-179.
- Stump, R. L., & Heide, J. B. (1996). Controlling Supplier Opportunism in Industrial Relationships. *Journal of Marketing Research*, 33(4), 431-441.

- Sutcliffe, K. M., & Zaheer, A. (1998). Uncertainty in the Transaction Environment: An Empirical Test. *Strategic Management Journal*, 19(1), 1-23.
- Swink, M., Talluri, S., & Pandejpong, T. (2006). Faster, better, cheaper: A study of NPD project efficiency and performance tradeoffs. [10.1016/j.jom.2005.09.004]. *Journal of Operations Management*, 24(5), 542-562.
- Tangpong, C., Hung, K.-T., & Ro, Y. K. (2010). The interaction effect of relational norms and agent cooperativeness on opportunism in buyer–supplier relationships. [10.1016/j.jom.2009.12.001]. *Journal of Operations Management*, 28(5), 398-414.
- Tatikonda, M. V., & Rosenthal, S. R. (2000). Successful execution of product development projects: Balancing firmness and flexibility in the innovation process. [10.1016/S0272-6963(00)00028-0]. *Journal of Operations Management*, 18(4), 401-425.
- Teece, D. J. (1988). Capturing Value from Technological Innovation: Integration, Strategic Partnering, and Licensing Decisions. *Interfaces*, 18(3), 46-61.
- Venkatraman, N. (1989). The Concept of Fit in Strategy Research: Toward Verbal and Statistical Correspondence. *The Academy of Management Review*, 14(3), 423-444.
- Venkatraman, N., & Prescott, J. E. (1990). Environment-strategy coalignment: An empirical test of its performance implications. [10.1002/smj.4250110102]. *Strategic Management Journal*, 11(1), 1-23.
- Vogt, W. P., & Johnson, R. B. (2011). *Dictionary of Statistics & Methodology: A Nontechnical Guide for the Social Sciences*: SAGE Publications.
- Wathne, K. H., & Heide, J. B. (2000). Opportunism in Interfirm Relationships: Forms, Outcomes, and Solutions. *The Journal of Marketing*, 64(4), 36-51.
- Weber, R. A., & Camerer, C. F. (2003). Cultural Conflict and Merger Failure: An Experimental Approach. *Management Science*, 49(4), 400-415.
- Weisberg, H. F., Krosnick, J. A., & Bowen, B. D. (1996). *An introduction to survey research, polling, and data analysis*: Sage Publications.
- Williamson, O. E. (1979). Transaction-Cost Economics: The Governance of Contractual Relations. *Journal of Law and Economics*, 22(2), 233-261.
- Williamson, O. E. (1981). The Economics of Organization: The Transaction Cost Approach. *American Journal of Sociology*, 87(3), 548-577.
- Williamson, O. E. (1983). *Markets and hierarchies: analysis and antitrust implications : a study in the economics of internal organization*: Free Press.

- Williamson, O. E. (1985). *The economic institutions of capitalism: firms, markets, relational contracting*. China Social Sciences Publishing House.
- Williamson, O. E. (1993). Calculativeness, Trust, and Economic Organization. *Journal of Law and Economics*, 36(1), 453-486.
- Wu, D. Y., & Katok, E. (2006). Learning, communication, and the bullwhip effect. [10.1016/j.jom.2005.08.006]. *Journal of Operations Management*, 24(6), 839-850.
- Wu, J. B., Tsui, A. S., & Kinicki, A. J. (2010). CONSEQUENCES OF DIFFERENTIATED LEADERSHIP IN GROUPS. [Article]. *Academy of Management Journal*, 53(1), 90-106. doi: 10.5465/amj.2010.48037079
- Zenger, T. R., & Lawrence, B. S. (1989). Organizational Demography: The Differential Effects of Age and Tenure Distributions on Technical Communication. *The Academy of Management Journal*, 32(2), 353-376.