

PERFORMANCE AND STABILITY OF STRATEGIC
ALLIANCES: AN EXAMINATION OF THE
INFLUENCE OF SOCIAL EXCHANGE
PROCESSES

By

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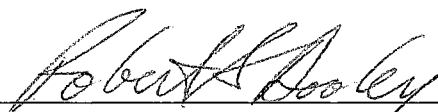
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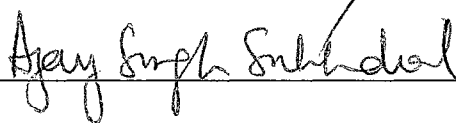
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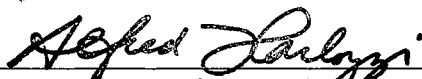


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CHAPTER I

INTRODUCTION

There has been a surge in the number of alliances among business firms throughout the world; rarely a day passes without announcements of new interfirm linkages, partnerships, or alliances being established. Whatever they are called, these interfirm relations cover a range of functions and activities. The primary driver of strategic alliances is the emergence of intense global competition, which has rendered traditional organizational arrangements and time tested strategies less effective (Contractor & Lorange 1988; Yoshino & Rangan 1995). For instance, until recently multinational corporations' preferred mode of international operation was to supervise fully owned or controlled foreign affiliates (Contractor & Lorange 1988). In recent years, however, there is growing recognition that strategic alliances yield more benefits than fully owned subsidiaries. The formation of strategic alliances is considered a significant strategy for enhancing global competitiveness and effectiveness in many industries (Astley & Formbrun, 1983; Harrigan, 1985).

Strategic alliances are by no means limited to the international business arena. It has been increasingly realized that most business-business exchange processes involve long-term relationships, and such relationships are significant to maintain competitive advantages (Dwyer, Schurr, & Oh 1987). In fact, strategic alliance has already become a dominant business strategy in many high-tech industries such as electronics,

telecommunication, and machine tools (Harrigan, 1985). Alliances are frequently formed even among rival firms.

The strategic alliances represent the hybrid and intermediate form of interorganizational arrangements that are different from traditional hierarchical structures and discrete market transactions, and are based on principles of cooperation (Powell, 1990; Ring & Van de Ven, 1994). Essentially strategic alliances are interfirm cooperative arrangements established for the joint accomplishment of individual goals linked to the corporate mission of each sponsoring firm (Parkhe, 1991). It is reported that there have been more alliances created since 1981 than in all previous years put together (Anderson, 1990) and the rate of formation of such alliances is further accelerating (Hergert & Morris, 1988; Yoshino & Rangan, 1995). In addition, their strategic significance to partner firms' businesses, markets, and technologies is likely to continue (Harrigan, 1987). This emerging new phenomenon has captured the attention of academicians and researchers, leading to several years of research.

Organizational and strategy scholars have been predominantly curious about, Why do firms enter into alliances? How do they go about forming an alliance? What governance mechanisms are used to manage the alliance? What are the characteristics of firms that affect performance outcomes? (Contractor & Lorange, 1988; Hamel, 1991; Harrigan, 1987; Kogut, 1988; Pfeffer & Nowak, 1976; Pisano, 1989). Not surprisingly, the above questions are of paramount interest to practicing managers and the issue of cooperation between two independent and sometimes competing entities has generated tremendous interest among academicians and researchers.

On the other hand, even if the alliances are becoming the attractive strategic option, many strategic alliances have been reported to be unstable, ineffective and poorly performing (Geringer & Hebert, 1991; Porter & Fuller, 1986). Alliances are observed to be failing very rapidly without yielding any strategic benefits. Studies estimate that mortality rates of alliances approach 70 percent (*Business Week*, 1986; Parkhe 1993). There is a need to comprehend why strategic alliances that are based on a voluntary cooperation strategy often result in failures. It is often reported that most of the alliance failures are due to lack of mutual understanding, to mistrust and to power conflicts among alliance partners (Lorange & Roos 1991). Consequently, the issue of alliance management and coordination assumes a greater significance.

Traditionally, researchers have emphasized the formal control mechanisms and contractual safeguards as remedies for instability and failures. Financial equity based governance mechanisms are often recommended for monitoring the alliance and managing conflicts between partners (Gulati 1995; Killing 1983; Williamson 1985). However, success of alliance may not so much be determined by formal governance structures and contractual safe guards, and there is a recognition that excessive concern with control can be counterproductive (Killing 1983; Lorange & Roos 1992). Several researchers have argued that the success of alliance is determined by various social exchange processes such as reciprocity, trust, and power sharing between managers of partner firms (Axelrod 1984; Heide 1994; Macneil 1980; Hamel, Doz, & Prahalad 1989; Doz 1996; Ring & Van de Ven 1994).

Research Focus

Despite the significance of ongoing interaction, exchange and coordination processes for the alliance success, the extant literature on strategic alliance concerning these issues has been scarce. Although the significance of managerial and coordination processes have been emphasized in the organizational and strategy literature, studies of alliance management and coordination are scarce. Most studies have focused on the rationale for alliance formation (Contractor & Lorange, 1988; Kogut & Singh, 1988), explaining the patterns of alliance formation (Hergert & Morris, 1988; Porter & Fuller, 1986), choice of governance structures (Pisano, 1989; Gulati, 1995), or on relating alliance outcomes to initial characteristics of the partners (Burgers, Hill, & Kim, 1993; Hagedoorn & Schakenraad, 1994).

Several researchers studying interorganizational relationships point to the alliance interface, coordination or managerial process issues involved in the alliance relations (Ring & Van de Ven 1994; Shortell & Zajac, 1988) or suggest approaches to managing the coordination process (Whetten, 1981; Whetten & Bozeman 1991), but their analysis remains at the theoretical level (Doz 1996). For instance, only recently Ring and Van de Ven (1994) have developed a detailed theory of interorganizational coordination emphasizing the significance of interorganizational social exchanges, and coordination processes in the development of stronger cooperation and commitment between partners in an alliance. Few empirical studies have explored the role of key interface and coordination factors in the emergence of cooperation in business alliances. Although a few studies have attempted to examine these issues (Alter & Hage 1993; Van de Ven & Walker 1984), these studies are exploratory in nature and involved non-profit voluntary

social service organizations not business alliances. However, a few case studies (Doz 1996; Hamel 1991) have explored the interaction and exchange processes through which partners realize cooperation and achieve their tangible and intangible goals.

The interface and coordination issues have also tremendous significance for the effective management of international alliances that involve the additional challenges of interacting with a structurally and culturally dissimilar 'foreign' partner. There is also lack of empirical research integrating alliance coordination problems, managerial perceptions, and organizational processes. As emphasized by several scholars, studies on alliance should move beyond firm characteristics and initial conditions to on going managerial interactions and influences between managers of partner firms. Since most conflicts tend to occur in the routine aspects of interaction, successful alliance management is essentially a social process. Such a process perspective is the core of this dissertation thesis.

The present research objective is to empirically examine the role of collaborative and coordination processes in domestic as well as international strategic alliances between business firms. The goals of this research effort are two fold: (1) it seeks to examine the role and influence of social exchange and collaborative processes such as reciprocity, trust, and power sharing in enhancing alliance success in terms of interfirm learning, alliance effectiveness, and partner's propensity to stay in the alliance relationship; (2) it aims to examine whether the influence of social exchange processes is moderated by different interorganizational, and environmental contexts in which alliance partners operate.

Alliance Management: Challenges and Solutions

Although alliances have become a major strategic option, the high failure rate of alliances continues to evoke pessimism among business analysts and researchers. The pessimism is largely due to the sheer complexity of alliances and the difficulty of managing and coordinating resources and assets across independent firm boundaries. Managers often face ambiguities and tensions associated with the need to balance cooperation and competition. Also managers are not familiar with interfirm linkages and lack training in boundary spanning activities. Further alliances are subject to difficulties arising from differences in organizational structure and cultures. International alliances are subject to the additional problem of differences in national cultures.

Should managers, on the basis of difficulty, give up the advantages of strategic alliance? Instead, managers should be prepared to face the complexity of managing alliances. Managers can play a vital role in developing desirable collaborative qualities that will make the alliance successful. Managers can foster a climate that strengthens the bond between independent partner firms. It is up to the alliance managers to create the right atmosphere, and strike appropriate chemistry with their counterparts in the partner firm. Several scholars have argued that reciprocity, trustworthiness, and power sharing are important management qualities for effective collaboration.

From a relational contracting perspective, Macneil (1980) argued that exchange between partners is based on a social component such as trust. Specifically, the partners involved in relational exchange derive 'non-economic satisfaction and engage in social exchange as well as economic exchange' (Macneil 1980: 13). Similarly, structural sociologists such as Granovetter (1985) and Powell (1990) offer a sociological view of

relationship. In exchange, trust reflects the extent to which one party believes that its requirements will be fulfilled through future actions undertaken by the other party (Anderson & Weitz 1989). Trust in an exchange increases the cooperation by reducing the development of opportunistic intentions. Trust may also eliminate the need for formal structural mechanisms of control (Granovetter 1985).

Game theorists emphasize the significance of reciprocity in exchange relationship (Axelrod 1984). Exchange that involves multiple interactions allows the partners to recognize both the long-term advantages of cooperation and the possibility of partner's retaliation. Resources committed by one party compensate for the other party's investments and can invoke the positive feelings and ensure continuity in the relationship (Powell 1990). Tangible actions that suggest reciprocity further reinforce the bond between partners and enhance accommodative behavior.

Power sharing is another important dimension of alliance management. From a social exchange perspective, it is argued that the process of interaction in an alliance relationship should be based on balance, harmony, and equality rather than coercion (Alter & Hage 1993; Macneil 1980; Molnar 1978; Heide & Miner 1992). The relative power a party possesses also determines the extent of underlying distributive justice in an exchange relationship (Blau 1964; Homans 1976). If the partners mutually exercise restraint in the use of power and at the same time allow the counterpart to influence their operation, there will be sense of distributive and procedural justice in the relationship (Bies 1987; Kabanaoff 1991; Whetten & Bozeman 1991). In fact, restraint in the use of power over another party is one of the social norms of governance (Kaufmann & Dant 1992).

The above views on the role of trust, reciprocity, and power sharing in managing interfirm relations have strong base in social exchange theory. Social exchange theory suggests that the interaction and coordination processes should enhance various types of relational bonds and exchanges through cultivating and maintaining close working relationships between partners (Hakansson & Snehota 1995; Homans 1961). The aim of this relationship management process is to remove the perception of risk and uncertainty in the relationship, and enhance the norms of fair exchange (Blau 1964; Homans 1961). Greater benefits are likely to be derived from relationships where there is a trust, flow of information, some give and take, some effort expended. If the coordination is successful, the process may lead to better alliance performance, higher degree of learning between partners and further extension of the alliance relationship.

Research Questions

In light of the significance of relational social exchange and coordination processes for enhancing alliance success, this study addresses the following research questions:

1. How do relational social exchange processes affect the success of alliance?
2. How do the different interfirm and environmental contexts moderate the relationships between social exchange processes and alliance success?

Alliance success can be explained in many ways: The extent the alliance is effective in meeting the partner objectives, the interfirm learning, and the partners propensity to stay in the alliance. But the ongoing interaction, exchange and coordination processes between partners determine these outcomes. This study specifically examines

the effects of the relational social exchange and coordination processes such as reciprocity, trust, and power equality on above outcomes. This study will also empirically examine whether the uncertain business environment, competition between partners (rivalry), and international dimension of alliance moderate the relationships between social exchange processes and outcomes in an alliance.

Substantive Contributions

This study will make several contributions to organizational literature in general and alliance literature in particular. For quite an important but largely unexplored subject – role of interorganizational exchange and coordination process – this study first synthesizes theories and managerial observations. By focusing on interfirm business alliances from social exchange perspective, this study conceptualizes and hypothesizes the role of alliance management processes in success of alliances. This study also makes a major effort to empirically test those relationships with rigorous research methods.

To Strategic Alliance Literature

Previous literature on strategic alliances has largely been built upon economic rationality and has paid little attention to ongoing interaction and exchange patterns in the alliance for achieving success of alliance. Although the formal controls, contracts and equity based governance structures that are based on transaction cost concerns are important, the actual managerial processes of interaction and exchange are equally critical to effectiveness of alliances (Grandori & Soda 1995; Lane & Beamish 1990; Nooteboom 1996). To date very little attention has been paid to the interaction and exchange processes such as reciprocity, trust, and power equality between partner firms. By

empirically studying from social exchange perspective, how these processes affect effectiveness, learning, and partner's propensity to stay (commitment) in alliances the present study provides support for relational alliance management and governance techniques.

Consistent with the recommendations of the several organizational scholars (March & Simon 1958; Cyert & March 1963), behavioral and sociological approaches are employed to understand the governance and performance of this important economic phenomenon. Such approaches help us understand the link between organizational routines and capabilities such as learning, and collaboration that occur in alliances.

To Management Practice

This research is built on the premise that strategic alliances' instability and failures can be partially explained by distrust, poor understanding, and lack of mutual accommodation between partners (Niederkofler 1991). This study captures the practical significance of social exchange processes in managing alliances, and offers a framework for the understanding of the skills required for managing complex interfirm economic phenomenon such as strategic alliance. By specifically examining the relational exchange processes in alliance success, this study reiterates the role of boundary spanning alliance managers in managing the ongoing day-to-day interaction with their counter parts.

This study also investigates whether various interfirm and environmental contexts affect the relationships between social exchange processes and outcomes such as interfirm learning, alliance effectiveness, and continuity of commitment to the alliance. This will help us understand the efficacy of social exchanges in various contexts.

Limitations

There are several theoretical and empirical limitations to this study. This study assumes that there exists a high degree of autonomy and discretion for individual firms within the broader economical and interfirm context, and that the stability and success of strategic alliance as an institutional arrangement depend on the social exchange processes and interactions between autonomous organizations and their capacity to develop mutually acceptable social norms of governance (Homans 1974; Eisenstadt 1971). This assumption, however neglects the fact that the social exchange processes are shaped by the societal, economical, cultural and institutional contexts in which firms and managerial actions are embedded and how these forces determine the cooperative behavior of individual organizations. In other words, this study does not empirically examine the antecedents that cause the parties in a relationship to exhibit social norms and behaviors in exchange relationships.

This study also does not address the role of instrumental processes such as interfirm socialization and communication in promoting social exchanges between partner firms. An important theoretical limitation is that this study examines the exchange processes within the dyadic relationships and ignores the impact of network of firms on dyadic relationships. Since firms often enter into a network of alliance relationships, it is significant to analyze the effects of the presence of other firms on the dyadic relationships between two partners (Gulati 1995).

Another lacuna in this study is the use of a single theoretical perspective to explain the role of firm behaviors in the alliance success. Although many theoretical

streams such as game theory, and relational contracting perspective are rooted in social exchange theory, it is important to explain alliance success with multiple theoretical views. Explanations based on social, institutional and economic logic are required to understand the complex business phenomenon such as strategic alliance.

Empirically, this study conjectures that there are clear-cut causal and temporal linkages between the relational social exchange processes and alliance outcomes, even though this research is a cross-sectional examination. Certainly, a longitudinal examination to capture the dynamics of ongoing interaction and alliance outcomes would be a most appropriate way to test and confirm the hypotheses made in the study.

This study relies on data from one side of the alliance dyad. From the research design angle, it would be an improvement to collect data from both sides of the alliance dyad. This will not only enhance the reliability of the measures of constructs such as trustworthiness and reciprocity that is bilateral in nature, but will enable cross-validation of these constructs. However, it must be noted that this study attempts to capture the mutuality of exchange processes in the dyad.

An important measurement limitation of this study is the use of single informants. To improve the validity of organizational level constructs, use of multiple respondents would be more appropriate (Kumar, Stern, & Anderson 1993; Phillips 1981). However, the informants of the study are highly familiar and involved with the specific alliance. The informants are highly knowledgeable about overall corporate strategic activities and performance implications of alliance. Most of the respondents of this study would be top executives at the level of vice-president and above.

Another limitation pertaining to common method variance should be acknowledged. However, the researcher hopes that, given the high expertise of the respondents, the common method variance will be less. The survey results may also be subject to social desirability bias. But, the researcher feels that the anonymity and confidentiality of the respondents would reduce the social desirability bias (Konrad & Linnehan 1995). However, such social desirability bias cannot be totally ruled out.

Outline of the Dissertation

This dissertation is organized into five chapters. The first chapter introduces the scope and research objectives of the dissertation. Chapter II reviews the existing literature on alliance problems, social exchange theory, and the role of social exchange processes on alliance success. A detailed discussion of various interfirm and environmental contexts and how they may affect the relationship between social exchange processes and alliance outcomes is provided. The third chapter elaborates the research design and methodology used in the study and lays out research hypotheses. In chapter IV, the aggregate statistics, results, and tests of hypotheses will be presented. In the last chapter, a comprehensive discussion of the findings and implications of the research findings will be provided. A summary of limitations and directions of future research are also included in this chapter.

CHAPTER II

LITERATURE REVIEW

Strategic alliance has become a major competitive business strategy for most firms in several industries (Contractor & Lorange 1988; Gulati 1998; Harrigan 1985). Many corporations are renouncing their traditional reluctance to enter cooperative inter-firm arrangements, and are increasingly seeking domestic and international strategic partnerships. Strategic alliances are a *sine qua non* strategy for business survival in the global market place (Contractor & Lorange 1988; Ohmae 1989). Strategic alliances continue to proliferate with increased hypercompetition and globalization (D'Aveni 1994; Yoshino & Rangan 1995). One study points out that, in recent years, the number of strategic alliances have been growing at a rate of over 25 percent annually (Bleeke & Ernst 1991).

The proliferation of strategic alliances has led to a growing stream of research by strategy and organizational scholars. The extant strategic alliance literature can be broadly viewed under five distinct streams of research issues: (1) the rationale for the formation of alliances, (2) the choice of governance structure of alliances, (3) the dynamic evolution of alliances, (4) the performance of alliances, and (5) the performance consequences for firms entering alliances (Gulati 1998). A detailed review of this vast and burgeoning field of research is beyond the scope of the current study. For extensive reviews, see

Auster (1994), Gulati (1998), and Oliver (1991). This study primarily focuses on the dynamic on going interaction and exchange processes and their effects on alliance performance and stability.

A strategic alliance links specific facets of the businesses of two or more firms (Yoshino & Rangan, 1995). The major objective of establishing the linkage is to increase the competitiveness of partner firms through mutually beneficial trade of technologies, skills, or products. Alliances can take a variety of forms, ranging from an arm's length contract to a joint venture. The various forms of alliances include training agreements, product buyback agreements, patent/technology/knowhow licensing, franchising, marketing agreements, research partnerships, and equity based joint ventures (Contractor & Lorange, 1988). Alliance arrangements differ in terms of their legal form of agreement, as well as in their strategic impact on the operations of each partner.

This chapter is organized in terms of the following sections. First, a brief review of the rationale of alliance formation and the theoretical definition of strategic alliance are presented. In the second section, the problems and failures in strategic alliances and their causes are traced. The third section elaborates the significance of alliance interaction and coordination processes. Section four presents the social exchange theory and explains the theoretical rationale of social exchange processes in the performance and success of strategic alliance. This section also reviews the theoretical and empirical literature on social exchange processes and presents the conceptual model of relationships between social exchange processes and alliance outcomes to be tested in the present study.

The final section of this chapter reviews the literature on various interfirm and environmental contexts that affect the relationships between social exchange processes

and alliance outcomes. This section elaborates the role of environmental uncertainty, competition between partners, and international dimension of the alliance and how these factors moderate the relationship between social exchanges and alliance outcomes.

The Logic of Strategic Alliances: A Brief Review

An examination of alliance literature indicates an ample number of reasons that have been advanced as the causes and motives for entering an alliance (Glaister & Buckley 1996; Hill et al. 1997; Mariti & Smiley 1983). Several of the motives identified by these authors are similar, and often overlap and fall into some important categories. For instance, Harrigan (1985) groups these motives into internal benefits, competitive benefits, and strategic benefits. The main elements of these strategic motives include risk sharing, product rationalization and economies of scale, transfer of complementary technology, shaping competition, conforming to host foreign government policies, facilitating international expansion, and market positioning. Although these motives are not mapped neatly into theoretical frameworks, several theoretical explanations that are offered can capture these motives for formation and structuring of cooperative strategic alliances. A summary of motives and the corresponding theoretical rationalizations are presented in Table 1.

Theories range from mainstream economics approach (Contractor & Lorange 1988), the transaction cost view (Hennart, 1988; Williamson 1991), resource dependency (Pfeffer & Salanick 1978), to organizational learning (Hamel 1991; Kogut 1988). The mainstream economics approach considers the extension of the firm by alliances as a means to achieve economies of scale and some control over inputs at low cost. That is

horizontal and vertical integration can be achieved without the costs associated with capital investment (Glaister & Buckley 1996).

TABLE 1
STRATEGIC MOTIVES AND THEORETICAL EXPLANATIONS OF ALLIANCE FORMATION

Strategic Motives	Theoretical Explanations
Risk sharing, Vertical links, and Product rationalization and economies of scale	Mainstream economics
Risk sharing, technology transfer, patents Exchange, and vertical linkage	Transaction cost economics
Vertical links, and resource dependence	Resource dependence perspective
Transfer of technology, international expansion	Interorganizational learning

From a transaction cost perspective, it is argued that interfirm alliances are hybrid structures that combine the aspects of market transactions and structural characteristics of hierarchies, and fall between these two alternative forms on a continuum (Williamson, 1975a; 1991b). According to this view, recurring transactions that involve uncertain outcomes and require transaction-specific investments are most likely to take place within hierarchies; and the transactions that require no transaction-specific investments will take place across a market. In hybrid forms, joint action is achieved through legal contracts, price incentives, and formal administrative systems. Many researchers have challenged this cost based view. For example, Powell (1990) argued that the ‘continuum view’ of

interorganizational relationships is quiescent and mechanical, and does not explain the enriched cooperation between partnering firms.

From a resource dependence perspective, it has been argued that firms are interdependent on each other for critical resources, and that there are mutual gains in pooling resources (Pfeffer & Salanick, 1978; Powell, 1990). Alliances also facilitate the division of work and allow the firms to specialize their competencies. However, establishing a cooperative relationship with other companies is not devoid of problems. As Van de Ven and Walker (1984) pointed out, involvement in an interorganizational relationship implies that 1) an organization may lose its autonomy and freedom to act independently, and 2) it may have to invest critical resources to maintain a relationship. So, organizations might be reluctant to form the alliance unless they are strongly dependent on other's resources.

On the other hand, it has been recognized that resource dependence may induce cooperation, rather than competition (Aiken & Hage, 1968). Often the benefits of cooperation outweigh the disadvantages, particularly the loss of autonomy and costs of managing the relationship (Contractor & Lorange, 1988; Kogut & Singh, 1988; Provan, 1984). For example, Kogut and Singh (1988) observed that in many international business ventures companies preferred to establish cooperative relationship, because it reduces the costs and risks associated with the venture.

Interorganizational learning is another important dimension that explains the rationale for formation of interfirm alliances. Alliances facilitate the exchanging of information, knowledge, and technology resources. They also provide strategic

advantages from the exploitation of synergies, technologies, or other skills transferred (Kogut 1988; Hamel 1991; Harrigan, 1985).

Strategic Alliance Defined

Since the term alliance is subject to numerous interpretations, it is important to define the scope of the usage of the term strategic alliance here. For instance, mergers, takeovers, and acquisitions are often referred as a strategic alliance in business literature. Even the traditional overseas subsidiaries of multinational corporations (MNCs) are sometimes called alliances. Yoshino and Rangan (1995) suggest that an alliance should simultaneously possess the following necessary and sufficient characteristics:

- Two or more firms that unite to pursue a set of agreed upon goals remain independent subsequent to the formation of alliance.
- The partner firms share the benefits of the alliance and control over the performance of assigned tasks.
- The partner firms contribute on a continuing basis in one or more key strategic areas, e.g., technology, products, marketing, finance, and so forth.

It is apparent from the above characteristics that mergers, acquisitions, and takeovers where one firm assumes full control do not qualify as strategic alliance. Similarly, subsidiary relationships do not constitute strategic alliance because they do not involve independent firms with separate goals. Nor can the simple and routine buy-sell agreements for commodities or raw materials be treated as alliances for they do not involve persisting interdependence, and shared managerial control. Parkhe (1993:581) has used a similar conception and defined strategic alliances as

“relatively enduring interfirm cooperative arrangements, involving flows and linkages that utilize resources and/or governance structures from autonomous

organizations, for the joint accomplishment of individual goals linked to the corporate mission of each sponsoring firm.”

In the same vein, the international or global strategic alliances are defined as

“relatively enduring interfirm cooperative arrangements, involving cross-border flows and linkages that utilizes resources and/or governance structures from autonomous organizations headquartered in two or more countries, for the joint accomplishment of individual goals linked to the corporate mission of each sponsoring firm” (Parkhe, 1991).

The present study used the above theoretical conceptualizations as base for the empirical examination and analysis of domestic and international strategic alliances respectively.

Alliance Instability and Failures

Despite their popularity and significance, strategic alliances have a high overall failure rate, as much as 50 percent, according to some studies (Bleeke & Ernst 1995). Others have reported that failure rates of strategic alliances were close to 80 percent (Parkhe 1993c). Most of the alliance failures are due to poor mutual understanding, mistrust and power conflicts among alliance partners (Lorange & Roos 1991). There is a need to comprehend why strategic alliances that are based on a voluntary cooperation strategy often result in failures. The causes of problems in strategic alliances can be traced back to some of the well known rationalizations based on theories such as transaction cost economics (Williamson 1975, 1985), resource dependence (Pfeffer & Salanick 1978), and game theory (Parkhe 1993b).

Transaction cost economics emphasizes the negative role of opportunistic behavior of partners in interorganizational relationships. It argues that, since the partners may pursue self-interest at the expense of other parties, the alliance suffers from conflict, inefficiency, and distrust (Ring & Van de Ven 1992). Lewis (1992) argues that trust is

almost impossible between organizations. To deter opportunism, alliance partners would have to employ all kinds of formal control mechanisms. This may involve *ex ante* contracts and *ex post* monitoring resulting in increased cost of deterrence.

Game theory is another theoretical rationale that helps to understand the inherent instability and deficiencies of strategic alliances (Parkhe, 1993b). Game theory suggests that strategic alliances involve the prisoners' dilemma situation in which the players are not sure of the motives and intentions of their counter part, and may choose not to cooperate. The premise of this argument is that the payoffs from non-cooperation should be higher than that resulting from cooperation. Since the partners can get more payoffs from cheating or exploiting the other party to the alliance, it seems certain that alliances are bound to fail. But, game theory does not clarify why partners, in the first place, should get involved in strategic alliance believing that other party would cheat.

From a resource dependence perspective, it is suggested that firms often depend on other firms for their critical resources (Pfeffer & Salanick, 1978). To reduce their dependence on others, firms establish strategic linkages or interorganizational relationships or alliances. Such strategic alliances enable firms to control others' resources and thus reduce the level of dependence. Establishing relationship with other firms is not devoid of problems. Interorganizational relationships may result in loss of autonomy and call for new investments to maintain the relationship. The degree of interfirm resource dependence may also shift balance of power and result in conflicts and unplanned terminations of alliances.

However, it should be highlighted that the end of an alliance does not necessarily connote failure (Beamish & Inkpen 1995). Strategic alliances may be ended after

achieving the desired objectives, or alliances may result in complete mergers or acquisitions. However, the alliance that ends abruptly is of serious concern to partners. One of the central objectives of alliance management is to prevent the alliance from unplanned terminations and abrupt failures. Such failures are not only costly, but may affect the reputation and image of the partner firms.

Traditionally, academic research has focussed on the efficacy of the formal control mechanisms for monitoring the alliance and managing conflicts between partners (Gulati 1995; Killing 1983; Williamson 1975, 1985). The threat of opportunism has to be minimized by means of contracts and monitoring, which Williamson (1975) called “legal ordering”, and through incentives such as shared ownership of specific investments. Formal contractual agreements and equity based governance structures (Gulati 1995; Pisano 1987; Tallman & Shenkar 1994) were often recommended for effective management and control of alliances. For instance, it is suggested that a strategic partnership is likely to be stable when one partner plays dominant role based on majority share (Killing 1982, 1983). In general, previous research has largely been around the role of structural and governance aspects of strategic alliances in managing the alliance.

However, the success of an alliance may not be determined by the formal governance structures and contractual safe guards. There is recognition that excessive concern with control can be counterproductive (Lorange & Roos 1992). Several researchers and scholars have emphasized that success of an alliance is determined by various social exchange processes such as reciprocity, trust, and power sharing that occur between managers of the partner firms (Axelrod 1984; Heide 1994; Macneil 1980; Hamel, Doz, & Prahalad 1989; Ring & Van De Ven 1994).

From a relational contracting perspective, Macneil (1978, 1980) argues that relational exchange is based on social norms such as trusting, being trustworthy, equality and reciprocity. Specifically, parties involved in relational exchange derive ‘non-economic satisfactions and engage in social exchange as well as economic exchange’ (Macneil 1980: 13). This reasoning is also consistent with the work of sociologists such as Powell (1990) and Granovetter (1985), who have argued for recognizing the role played by socially embedded personal relationships in economic exchange.

Scholars are increasingly emphasizing a more interactive approach to managing interorganizational relationships (Levinthal & Fichman 1988; Van de Ven & Walker 1984). For example, Heide and Miner (1992) explored the possibility that how features of interaction patterns affect cooperation. The exchange and interaction processes are also important since most conflicts tend to occur in seemingly routine aspects of interaction (Hamel 1991; Lyons 1991). The central notion of the above arguments is that successful alliance management is essentially a social process. Such a process perspective is the core of this dissertation thesis. The following sections define and elaborate the alliance process and the social exchange theory that forms the theoretical framework of this study.

Alliance Interface and Coordination: A Managerial Challenge

Even though alliances have become a major imperative and strategic solution for managing global competition, alliances continue to evoke pessimism among business analysts and academic writers. For example, after an extensive study of interfirm alliances, a researcher concluded that “strategic alliances are doomed” (Taucher, 1988). Noted strategy thinker, Michael Porter (1990) observes that alliances are mere

“transitional devices rather than stable arrangements” and hence “destined to fail.” Porter further contends that alliances always involve significant costs in terms of coordination, reconciling goals with an independent entity, creating a competitor, and giving up profits.

Do such criticisms impair the prospects of strategic alliance as a business strategy and competitive weapon? On the contrary, alliances enable firms to concentrate on and invest in a few core competencies and technologies, leverage the competencies and knowledge of partner firms, and thereby develop into formidable global competitors. That is the implicit and explicit notion of many theoretical rationale of alliance formation summarized in the previous section.

Why then there is a pervasive pessimism on alliances? The main reason for such a notion is “the sheer complexity of alliances” and the extreme difficulty of managing and coordinating multiple perspectives and dispersed assets across firm boundaries (Bartlett & Ghoshal, 1991; Yoshino & Rangan, 1995). But should managers, on the basis of difficulty of managing alliances, repudiate the advantages of a powerful competitive weapon? Instead, managers should be prepared to face the complexity of managing alliances. They should rather develop a new mind-set and strive to find desirable and effective coordination and collaborative process qualities that will make the alliance successful.

The variety of problems that face interfirm alliances are ambiguities in relationships and tensions associated with the need to balance cooperation and competition. Often managers are unacquainted with and suspicious of interorganizational links. Alliances are also faced with complex and numerous details that need to be monitored and managed; and there is a lack of appreciation of complex connections

between the strategies, structures, and personnel of both the participating firms (Yoshino & Rangan, 1995). Thus alliance management calls for a systemic approach to manage the linkages among strategy, structure, systems, and staff in the participating organizations.

It has been documented that in many international alliances involving U.S., European, and Japanese firms support and coordination of related functional and business areas were crucial to the alliance success (*Business Week*, 1992; Graham, 1986). Further international alliances are subject to difficulties arising from differences not only in corporate but also in national cultures (Hofstede, 1980). Such challenges necessitate a new political and sociological framework for managing the alliance relationship. Traditional economic and political logic is obsolete and not applicable to the challenging task of managing alliances that involve knowledge and expertise transfers. Authority and traditional “carrot-and-stick” approaches to coordination will have immediate and dismal consequences on the partnerships.

Coordination is the process through which exchanges and interactions take place between organizations, so that the comprehensiveness, accessibility and compatibility among partners are maximized (Alter & Hage 1992). Several scholars have suggested that interfirm alliances are distinct cooperative arrangements based on reciprocity, mutual control, personal relationships, sharing and trustworthiness (Miles & Snow 1992; Miles & Creed 1995; Powell 1990). Similarly, organizational sociologists suggest that all economic relations and exchanges are embedded in trust centered social and personal interactions (Granovetter 1985).

Managers play a vital role in fostering such a climate that strengthens the bond and collaboration between independent partners. Although the alliance governance and

structure are determined by the competitive strategies of the partners, the tone, and tenor of the relationship are established by the respective boundary spanning alliance managers. Alliance success in terms of learning, effectiveness, cooperation, and generation of long-term commitment to alliance is largely determined by characteristics of the alliance managers of the partner firms. No contract or legal document or authority can ensure full cooperation. It is up to the alliance managers to create the right atmosphere, and strike appropriate chemistry with their counterparts in the partner firm.

Following are the important alliance management qualities identified by several researchers in sociology, marketing, economics, and management: fostering reciprocity, being trustworthy, trusting, and power equality- that is refraining from dominating the partner with excessive use of power and at the same time allowing the opposite party to take some control and monitoring of a firm's operation, systematic operational information exchange, facilitating close working relationships between personnel of both organizations (Gardner & Cooper 1988; Granovetter 1985; Kaufmann & Dant 1992; Macneil 1980; Lorange & Roos 1991; Powell 1990).

Alliance Management Process

Ring and Van de Ven (1994) have argued that the extant literature on interorganizational relationships such as alliances have predominantly focused on the antecedent conditions, and governance structures while neglecting the interactions among partners that unfold and modify an interorganizational relationship. Such a process perspective is highlighted in the following paragraph:

“Process, however, is central to managing interorganizational relationships. As agents of their firms, managers need to know more than the input conditions, investments, and types of governance structures required for a relationship. These

process issues also have important temporal implications for performance. The ways in which agents negotiate, execute, and modify the terms of an interorganizational relationship strongly influence the degree to which parties judge it to be equitable and efficient..... These processes also influence motivations to continue in, or terminate, the relationship over time... Interaction processes among cooperating parties may cast a positive, neutral, or negative overtone to the relationship, influencing the degree to which parties settle disputes arising out of the interorganizational relationships” (Ring & Van de Ven 1994: p.91).

After all, alliance management is a matter of coordinating activities and resources between firms (Hakansson & Snehota 1995; Dyer 1997). An effective coordination involves mutual adaptation and accommodation of each partner. Partner firms have to mutually modify and adapt interdependent activities such as production, development, and other resources to enhance the compatibility between them.

The success of interfirm adaptation is dependent on the quality of managerial coordination process that involves reciprocal commitments, being trustworthy and power sharing with the partner. This process can be described as a ‘social exchange process’ between two firms (Blau 1964; Emerson 1972; Homans 1958; Thibaut & Kelley 1959). Social exchange theory offers the conceptual and theoretical foundation for explaining the effective coordination process between firms.

Social Exchange Theory

One of the founders of social exchange theory, Homans (1974) argued that exchange is the fundamental process that makes human behavior specifically social. Exchange is a situation in which the actions of one person provide the rewards or punishments for the actions of another person and vice versa. However, a mere one time exchange in a market place, where a buyer is able to enter into exchange with one seller on one occasion, with another on another occasion, and so forth depending on the prices

offered by sellers does not qualify as a relationship. But repeated interactions and exchanges that involve mutual trust, reciprocity, and power sharing develop into strong social relationships.

These relationships grow, develop, deteriorate, and dissolve as a consequence of an unfolding social exchange and coordination process, which may be conceived as a bartering of rewards and costs between the partners (Homans 1974). There are several sources that provide the complete description of the social exchange principle (Blau 1964; Burns 1973; Homans 1974; Thibaut & Kelley 1959). The major principle of the social exchange theory emphasized in the extant literature is that social interaction is an exchange of mutually rewarding activities in which the receipt of a needed value is contingent on the supply of a favor in return. Blau (1964) narrates the social exchange process with an interesting example:

“Only social exchange tends to engender feelings of personal obligation, gratitude, and trust; purely economic exchange as such does not. An individual is obligated to the banker who gives him a mortgage on his house merely in the technical sense of owing him money, but he does not feel personally obligated in the sense of experiencing a debt of gratitude to the banker, because all the banker’s services, all costs and risks, are duly taken into account in and fully repaid by the interest on the loan he receives. A banker who grants a loan without adequate collateral, however, does make the recipient personally obligated for this favorable treatment, precisely because this act of trust entails a social exchange that is superimposed upon the strictly economic transaction”.

Social exchange differs fundamentally from strictly economic exchange. Social exchange involves bartering of social rewards and costs, and lacks strict accounting. The benefits of social interaction are intrinsic in nature and have no exact price. Since it is unspecific, it is difficult for the partners to bargain how to reciprocate or force each other to reciprocate. Since there is no way to assure an equivalent return for a favor, social

exchange requires trusting others to discharge their obligations. The establishment of friendly partnership requires making investments that constitute commitments to the other party. But it demands trusting others to reciprocate and proving oneself trustworthy.

From a research point of view, there are many advantages in analyzing the alliance relationship based on the notion of social exchange process. An explicit look at exchange processes sets the stage for analyzing the strategic alliance itself as a unit, - rather than individual partners or the larger social system as a unit of analysis. Though the alliance relationships are influenced by the individual partner characteristics and the societal contexts in which they are embedded, the developmental course of a particular relationship can only be fully captured by studying interaction and coordination processes (Van de Ven & Walker 1984; Ring & Van de Ven 1994). It has also been pointed out by several scholars that the concept of social exchange is useful to analyze the development of intersystemic and interorganizational relationships as well (Blau 1964; Homans 1971; Eisenstadt 1971; Ring & Van de Ven 1994).

Similarly Borys and Jamison (1989) argue that the hybrid arrangements represented by these strategic alliances are unique in nature and challenge the capabilities of extant theory to explain their structure, operation and performance. They further point out that many extant studies have not captured the interfirm dynamics that are involved in the maintenance of strategic alliances. As scholars have argued, the theory of cooperative alliances must shift its focus from the individual organizational characteristics to the interorganizational interaction domain (Trist 1983; Gray & Wood 1991) and examine the interfirm relational processes such as reciprocity, trust, and power relations, between partners. Although a few researchers have explored some of these issues, but the studies

have been conducted only in non-profit business settings such as social service organizations (Alter & Hage 1993; Van de Ven & Walker 1984)

Social Exchange Theory and Business Alliances

When extending the social exchange perspective to interfirm alliance relationships, scholars stress two important features. One feature is that the development process is by no means deterministic (Hakansson & Snehota 1995; Ring & Van de Ven 1994). The dyadic relationships will develop only if both parties consider it beneficial. No choice can be made unilaterally, since the counterpart must be continuously motivated to engage in transaction. Such a perspective is quite important to understand the dynamic evolution of cooperation between partners in an alliance. The extant research have primarily focused on the initial conditions and individual firm characteristics as explanations for the stability and success of strategic alliance and have neglected the dynamic, mutual, and on going interaction and exchange processes between alliance partners.

A second important feature of interfirm alliances is that their success depends on the informal relationship and mutual understanding between partner firms (Granovetter 1985). The uncertainties in the alliance and possible opportunism of parties are better handled through mutual understanding that is based on interaction and coordination patterns that occur between firms. In other words, cooperation in business relationships is primarily an informal process of coordinated action between two firms (Alter & Hage 1993; Axelrod 1984).

Social exchange theory further suggests that the coordination processes should enhance various types of relational bonds through cultivating and maintaining close

working relationships between partners (Hakansson & Snehota 1995; Homans 1961). There are various dimensions of relationship management process: they include, reciprocity, trust, and power sharing between firms. The aim of this relationship management process is to remove the perception of risk and uncertainty in the relationship, and enhance the norms of fair exchange (Blau 1964; Homans 1961). These managerial processes facilitate the development of social, functional, and structural bonds. Greater benefits are likely to be derived from relationships where there is a flow of information, some give and take, some effort expended. If the coordination is successful, the partners will find the alliance effective, a higher degree of learning occurs in the alliance, and there will be an extension of the relationship.

Researchers also support the notion that the social exchange processes can act as a social contract and avert opportunism. They are also known as self-enforcing safeguards (Dyer 1997). For example, it has been reported that, Japanese automobile manufacturers, such as Toyota, have been relying on trust, rather than contractual mechanisms to safeguard themselves against opportunism of the suppliers (Dyer 1997). Social exchange process such as trust is an efficient governance mechanism and there is an inverse relationship between trust and transaction costs (Dore 1983; Saiko 1991).

The social exchange paradigm essentially focuses on the socio-psychological processes – how to maximize cooperation and minimize conflict. In this perspective exchange is an inherently constructive relationship, but it has to be carefully nurtured. The key requirements are trust and social norms of behavior (Kaufmann & Stern 1988; Morgan & Hunt 1994). The various perspectives and suggestions that emphasize the relational processes such as relational contracting (Macneil 1980), social embeddedness

(Granovetter 1985), and game theoretic notion of reciprocity and mutuality (Axelrod 1984) are strongly rooted in social exchange theory.

Interfirm interaction, exchange, and coordination issues have tremendous significance for the effective management of international alliances that involve the additional challenges of interacting with a structurally and culturally dissimilar 'foreign' partner. Since most conflicts tend to occur in the routine aspects of interaction, successful alliance management is essentially a social process. Such a process perspective is the core of this dissertation thesis.

The present research objective is to empirically examine the role of collaborative and coordination processes in domestic as well as international strategic alliances between firms. The goals of this research effort are two fold: (1) it seeks to examine the influence of social exchange and collaborative processes such as reciprocity, trustworthiness, and power sharing in effectiveness, learning, and partner's propensity to stay in the alliance relationship; (2) it aims to examine whether the influence of social exchange processes on the success of alliances is moderated by different interorganizational, environmental contexts in which alliance partners operate. A general model of conceptual relationships between social exchanges, outcomes, and interfirm and environmental contexts examined in this study is presented in Figure 1.

The following section reviews the literature on relational social exchanges reciprocity, trust, and balance of power and their effects on alliance stability and success. The next section addresses the various environmental and interfirm contexts that moderate the influence of social exchanges on alliance outcomes.

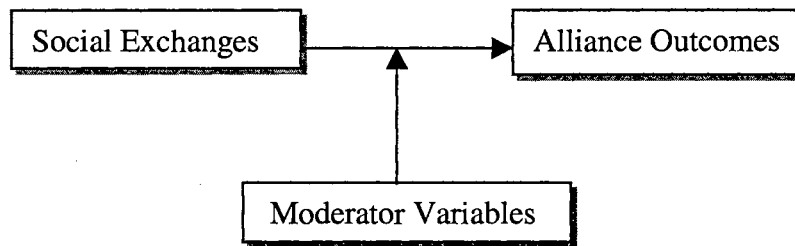


Figure 1. Model of relationships to be examined in this study

Norms of Reciprocity

Reciprocity is fundamental to build a stable relationship with an alliance partner. The reciprocity in an exchange manifests in the form of a moral obligation or a concern for collective well being of the other party as opposed to a concern for individual gratification (Blau 1964; Homans 1961). This happens because unlike the economic exchange, social exchange lacks strict accounting (Blau 1964). In social exchanges, unlike the economic exchanges, the partners are never certain about how much in debt they are to each other, and therefore strong feelings of moral obligation to repay are continually being generated and reinforced (Gouldner 1960). A partner can fulfil this obligation in at least two ways. The first way is increasing the level of inputs to the relationship already being provided. This may increase the feeling in the other partners that they are being out-given, are receiving more than they are giving, or receiving more than they think they deserve (Homans 1961). The second way is to demonstrate their reciprocal gratitude by committing additional resources that would constitute a reward to the party that is over-giving. Such reciprocal behaviors expand the range of resources being exchanged.

Reciprocity is also viewed as the commitment input that can result in long-term relationships through enhancing partners' confidence in each other. Joint commitment by both parties act as powerful indicators of quality of the relationship and develop the social norms of regulating the partners' attitudes, behaviors, and future exchanges. In alliances cooperation is not achieved prematurely (Van de Ven & Walker, 1984; Larson, 1992). Cooperation emerges as the result of a slow, incremental sharing and investment of resources by both parties. Unless the exchange parties perceive tangible indications of benefits, they will not further commit their resources to building a cooperative relationship. Successful collaboration requires one party to initiate this iterative process toward partner. The norm of reciprocity is central to this collaboration.

Reciprocal commitment is also considered as a sense of duty to the venture and the other partner, it forms the basis on which problems are addressed and solved. Reciprocity helps alliance partners to reach mutually satisfactory compromises and avoid resorting to formal procedures and third party interventions in conflict resolution (Kaufmann & Stern 1988).

The significance of reciprocity in exchange relationships is also captured in the game theorist's idea of TIT-FOR-TAT. According to game theory approach, a player cooperates whenever the other party cooperated in the prior game and defects in response to defection (Axelrod 1984; Rappaport & Chammah 1965). Game theorists found that when preplanned strategies of play were pitted against each other in round-robin computer tournaments, reciprocity based strategies performed exceedingly well even against sophisticated players (Axelrod 1984). However, the success of reciprocity depends on sufficient value being placed on future returns or long-term benefits (Axelrod

1984). This approach emphasizes the significance of ongoing interaction between partners rather than the fixed organizational traits in the production of successful cooperation.

Reciprocity also implies helping the partner over the ups and downs of business cycles and during other crisis. For example, retailers can give up writing reorders and using purchasing profit center; manufacturers can be flexible with pricing policies. Such accommodative behaviors have been found to be enhancing the relationship in many buyer-seller partnerships (Weinstein, 1992).

Reciprocity will also enhance the feeling that the relationship is effective and worth the effort. From a transaction cost theory view, it is argued that specific investments can be used to commit parties to the relationship (Williamson, 1985). After all, committed resources imply a cost. The investments tie the firm to the relationship and should perpetuate long-term commitment. Likewise, from the marketing literature, Wilson (1995) reports that bond of commitment develop over time as the level of investments grows until a point is reached when it may be difficult to terminate the relationship.

Reciprocal commitment of resources by the partner will also enhance the need for joint planning and actions, and high degree of information exchange. When both parties commit their resources they not only learn about each other, but also develop new skills and competencies. This happens because of the complementary resources and information shared by the partners. Committing time, resources, personnel and physical assets can foster more active involvement between managers at various levels of the organization and their counterparts in the alliance result in more learning.

Interfirm Trust

Trust is one of the central aspects of strategic alliance management. There is an enormous amount of literature on the role of trust in alliance success. Several researchers have argued that alliances are formed on the basis of mutual trust between firms (Beamish & Banks 1987; Buckley & Casson 1988; Harrigan 1986). Trust is an important social exchange mechanism that increases the cooperation (Granovetter 1988). Trust also reduces the development of opportunistic intentions and thus may eliminate the need for formal control mechanisms (Granovetter 1988). Several scholars have argued on the similar lines (Alter & Hage 1993; Fichman & Levinthal 1991; Gambetta 1988; Granovetter 1992; Jarillo 1988; Kumar 1996; Powell 1996).

Trust involves a belief that the partner and its promises are reliable and that the partner will fulfil its obligations in an exchange relationship (Blau 1964). Trust is also the willingness of the partners to rely on each other and place their fate partly in each other's hands (Deutsch 1962; Zand 1972). Thus trust involves both belief and behavioral intention.

It has been argued that trust strengthens interorganizational ties, speeds negotiations, and reduces transaction costs (Fichman & Levinthal 1991; Bromiley & Cummings 1993; Reve 1990). Although trust cannot be fully specified *ex ante*, it is a source of potential initial assets of a relationship. In other words, trust can serve as an initial social capital. An interesting feature of social capital such as trust is that it does not necessarily depreciate as might financial capital or technological capital (Fichman & Levinthal 1988).

As Nooteboom (1996) argued “Transactions on the basis of trust, with its implicit, pre-existing and unspecified conditions for cooperation, economizes on the specification and monitoring of contracts and material incentives for cooperation” (p.989). This process makes the economic exchange not only cheaper, but also enhances the flexibility in the alliance. On the other hand formal contracts are difficult to modify terms, less flexible, and costly.

Trust serves as a mechanism for guiding interaction behavior and resolving conflicts in strategic alliances. For instance, by cultivating trust, an alliance relationship can be stable without an institutional governance mechanism (Anderson & Weitz 1989; Dyer 1997). In fact, the necessity of a trusting environment often lies in the inability of legal governance approach in reducing uncertainty in ongoing relational exchanges (Gulati 1995). Due to the evolving and developmental nature of alliances, formal contracts can hardly spell out every contingency (Koot 1988). Also the use of legal measures may heighten the conflict and even lead to the break-up of alliances (Macaulay 1965). In the same vein, Ring and Van De Ven (1994) conclude:

“Heavy reliance on trust, or a reputation of fair dealing, may, as we have noted, lead to formal agreement defining cooperative interorganizational relationships that is unenforceable by resort to institutional guarantors (courts, arbitrators). Even when these are available, however, recourse to them typically leads the parties to end their relationship (Ouchi 1984). Thus private ordering becomes the primary dispute-resolution mechanism in cooperative interorganizational relationships” (p.94-95).

Previous explanations of trust in the interorganizational relational context have revolved around two major concepts: (1) reliance and (2) risk. Thus the trust in an alliance is often defined as reliance on another party under conditions of risk (Currall & Judge 1995; Nooteboom 1995, 1996). The concept of ‘reliance’ includes two dimensions

of trust: confidence or predictability in one's expectations about another's behavior, and confidence in another's fairness or goodwill (Anderson & Narus 1990; Ring & Van de Ven 1992). The inclusion of 'risk' factor suggests that a party in an alliance would experience negative outcomes from untrustworthy behaviors of the other party (Nooteboom 1996; March & Shapiro 1987). This condition further means that greater the risk, the higher the confidence threshold required to engage in trusting action (Inkpen & Currall 1997). This is quite important in an alliance. Alliances often involve exchange of technological and proprietary knowledge resources between partners. This is very risky because, a partner can appropriate the resources of the other party in order to eliminate the partner dependence and making the alliance obsolete, and there is a possibility that the resources and investments devoted to alliance may be of no value and irrecoverable in the event of alliance termination.

Since there is always a chance that an alliance partner may be opportunistic, partners trusting each other and being trustworthy may mitigate the inclination toward opportunism and cause exchange partners to forego opportunistic behaviors at least within reasonable bounds (Nooteboom 1995). Alliance that functions on the basis of such a social norm has better chance of survival. However, this study explicitly recognizes the risk factor in the alliance and emphasizes the trust as an expectation based on experience and interaction rather than a conviction. In the same vein, it conceptualizes interfirm trust as a relational phenomenon rather than a disposition of a partner to trust. Whereas dispositional trust is an individual trait reflecting expectancies that a person would carry from one situation to another (Rotter 1967), a relational form of trust is with specific reference to the partner in the alliance. This relational trust is likely

to be based on experience and interaction with a particular exchange partner (Ring & Van de Ven 1992). One approach to explain why a given party will have a greater or lesser amount of trust for another party is to consider attributes of the trustee; that is the trustor's perception is based on trustworthiness of the particular trustee (Good 1988; Ring & Van de Ven 1992).

A recent framework that appears to be promising as a theoretical foundation for explaining trust posits that trustworthiness is comprised of three factors: ability, benevolence, and integrity (Mayer et al 1995). Although each factor offers a unique perceptual perspective from which to consider the trustee, as a set these factors provide a solid and parsimonious for the empirical study of trust in a relationship. This study uses this trustworthiness as a construct to study the dynamics of trust in the alliance relationship. In addition, this study hypothesizes and examines the role of each of the above dimensions of trustworthiness on the alliance relationship.

Ability is that group of skills, competencies, and characteristics that allow a partner to have some influence within some domain. For an alliance partner, this subsumes its competencies and skills that are significant to alliance task. Thus, ability highlights the task and situation specific nature of the trust (Zand 1972). Benevolence is the extent to which a trustee is believed to want to do good to the trustor, aside from self-centered profit motives. If a firm in the alliance believes that counterpart cares about its interests, the counterpart will be seen as having benevolence for the firm. Benevolence is the perception of a positive orientation of trustee toward the trustor (Mayer et al 1995). Integrity is defined as the trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable. Perception of integrity in a relationship is judged by the

consistency of the trustee's past actions, the extent to which the trustee's actions are congruent with promises made, and belief that the trustee has a strong sense of justice (Butler 1991; Gabarro 1978). This argument is consistent with the notion of expectation of fairness in developing trust.

Although all three factors are important to trust, each may vary independently of others (Mayer et al 1995). These three factors may combine in idiosyncratic ways to reflect various levels of perceived trustworthiness in a relationship. In some situations, the trustee's ability may be more important than the other two factors. Other situations may involve simple tasks that do not warrant specific competencies, but trustor may expect a high degree of integrity from the trustee. When all three factors were perceived to be high, the trustee would be deemed quite trustworthy; in contrast, it is possible for a perceived lack of any of the three factors to undermine trust. However, it is important to examine empirically, in an alliance context, the role of each of the dimensions of trust. This study treats the trustworthiness as a single construct as well as the three distinct dimensions and examines their impact on alliance outcomes.

Alliance literature also examines trusts from three different perspectives: structural, social, and psychological (for a review see, Inkpen & Currall 1998). As a structural property of alliance relationship, trust is said to exist between partner firms. Although firms cannot trust one another since they cannot have attitudes (James et al 1988), firm level trust is conceptualized in several ways. For instance Gulati (1995) argued that prior ties breed trust. In the structural perspective, trust is also associated with partners' strategic motives (Buckley & Casson 1988). This structural view downplays the ongoing interaction between individual managers. In this study, the focus

is on trust as a social and psychological property of relationships between partner firms and their managers.

The social dimension of alliance trust is based on the history of ongoing interaction between the partners that provides the 'social glue' within which economic exchange occurs (Madhok 1995; Powell 1996). Social property view of alliance trust suggests that a lack of trust can lead to ineffective interactions, poor cooperation and inferior alliance performance. In contrast, presence of trust can facilitate the continuation of the relationship and can make the implementation of cooperation easier (Nootboom 1997).

A psychological perspective of alliance trust emphasizes the level of trust perceived by individual managers, the boundary spanning individuals who provide the linking mechanisms across organizational boundaries, namely alliance managers (Currall & Judge 1995). The reliance of the partner and the risk associated with alliance are considered from the perspective of the individual managers who enacts the relationship with the partner firm (Nootboom 1997). Ring and Van de Ven (1989) suggested that informal trusting relationships may serve as governance structure and may reduce the need for formal coordination and compliance measures. In the extant literature, another theoretical distinction has been made between interpersonal trust and interorganizational trust in terms of the level of analysis, and on the basis of origins and referent of trust (Zaheer et al 1998). While interorganizational trust describes the individual manager's confidence in the entire partner firm and interpersonal trust is concerned with a manager's confidence in his counterpart in the partner firm with whom he is interacting. This study

focuses at the interorganizational level rather than at the interpersonal level to explain the outcomes such as effectiveness, learning, and firm's propensity to stay in the alliance.

Trust between partners has several positive consequences. As the fear of opportunism fades because of the mutual trust the coordination and monitoring costs may reduce. For example Dyer (1997) argued that trust itself should be viewed as an efficient governance mechanism in interfirm relationships. Interfirm trust also increases the level of learning, scope of relationship, and long-term commitment in the relationship. Initially partners may be uncertain about their partner's competence and reputation. As the trust develops, partners confidently exchange information and expertise, and learn from each other. Trust facilitates continuous interfirm communication and thus allows the information to flow freely between partner firms.

There are several reports that suggest there is a positive relationship between trust and partner's collaborative behaviors in the form of self-disclosures, information exchange, and cooperative problem solving (Zand 1972; Pruitt 1981; Kimmel et al 1980). Recently, Zaheer and Venkatraman (1995) found that trust increased the scope of joint planning and action by partners in strategic alliances. Through such processes partners learn about each other's competence and develop confidence in one another. This may lead to increase in the partners' willingness to stay in the relationship and may even increase the alliance scope. Dore (1987) observed that trust among partner firms in the Japanese textiles industry enhanced the security of the relationship and led to further increase in investments, risk sharing, and knowledge exchange. One resulting action of trust can be increased commitment (Weitz & Jap 1995).

Trust is also an important ingredient for alliance effectiveness. Trust ensures a sound and cooperative relationship between the alliance partners. The higher the trust, the more efficient the alliance will be in transforming an input of alliance into collaborative output (Buckley & Casson 1988). Despite numerous theoretical suggestions, there is limited empirical support in the alliance literature on the relationship between trust and alliance effectiveness.

Balance of Power

Power in interorganizational relationships refers to the extent of influence that one party has over the other party in terms of influencing decision variables that are significant to performance of alliance or interfirm relationship (Cook 1977; Doz 1988; Gaski 1984). Interorganizational power is a critical element in the alliance management process (Doz 1988; Emerson 1962; Van De Ven & Ferry 1980; Teece 1986), since power is considered a central property of a relationship itself (Blau 1964; Cook 1977).

Power relationships may be symmetric or balanced, where both parties possess the same capability to affect the decisions of the other; but when the power relations are asymmetric or unbalanced, one of the parties, that is the stronger party can control or influence greater than the weaker party. Depending on the extent of the balance of power, the nature of mutual influence and control are determined in the relationships (Cook 1977; Emerson 1977). In other words, the extent of power sharing or balance between partners determines bilateral involvement or unilateral control in alliance relationships.

Power in an interfirm alliance is shaped by the structure of interdependence between alliance partners. The interdependence structure of a dyadic relationship involves each firm's dependence on the other party, and the degree of balance in the

interdependence between the firms. Interdependence asymmetry arises if there is a difference between the firm's dependence on its partner and the partner's dependence on the firm (Emerson 1962). That is one firm is more dependent on the partner for its resources than the other partner. The asymmetric resource dependence gives rise to power for the stronger partner. This power would help the stronger partner to alter the other party's behavior in an alliance (Gaski 1984). Symmetric interdependence exists when the firm and its partner are equally dependent on each other (Kumar, Scheer, & Steenkamp 1995). In symmetric interdependence situations, both partners possess equal influence over the other partner and thus power is balanced.

Traditionally several scholars have argued that interfirm relationships often involve a relative power imbalance, because of the differences in resource endowments, size and financial strength (Blau 1964; Emerson 1962; Pfeffer & Salanick 1978). This may lead to a situation where one partner exerts its power and influence on alliance decisions to receive undue benefits (Teece 1986).

Until recently, power has been viewed as an interfirm organizing mechanism to maximize the efficiency and effectiveness of the alliances (Pfeffer & Salanick 1978; Stern & El-Ansary 1992). From a resource dependence view, it was argued that interorganizational domain characterizes a political environment in which resource scarcity and dependence may prompt organizations to exert coercion over the firms that possess the scarce resources. However, it must be emphasized that not all dependence based relations are asymmetric. While power arises from differences in dependencies, all potential power is not necessarily enacted or exercised (Provan & Gassenheimer, 1994).

Long-term interests and deferred gratification may result in balanced power relations between partners.

From a social exchange perspective, however, power is broadly defined as the capability for influencing the other party in exchange transactions through inducing to accede to one's wishes by rewarding other party for doing so (Homans 1961; Blau 1964). By supplying services in demand to others, one party establishes the power over the other party. If these services cannot be readily obtainable elsewhere, other party becomes dependent on and obligated to one providing these services. Providing needed benefits others cannot easily do is undoubtedly the most prevalent way of attaining power, though not the only one, since it can also be attained by threatening or coercing the other party (Blau 1964; Emerson 1962).

The coercive power, however, has negative ramifications. If the power demands are too severe, relinquishing the benefits of dependence may be preferable to yielding to the demands of the stronger party (Blau 1964). For this reason, coercion is an ineffective mechanism for managing an alliance process where often the party cannot be made to yield. On the other hand, dependence does not mean unilateral power over the party, since alliances often involve exchange of strategic resources that are critical to each partner. This demands that relative power partners possess has to be balanced for achieving an effective relationship.

If the power is asymmetric or unbalanced, the weaker partner may perceive an undue exploitation and may resort to preemptive strike or rebellion against the more powerful firm's domination (Lawler, Ford & Blegen 1988), and this may escalate the costs of negotiation and exchanges (Cook 1977; Williamson 1975). Such approaches to

interorganizational relationships are detrimental to cooperative alliance. In general, all unbalanced relationships are inherently unstable (Anderson & Weitz 1989).

Relationships governed by power alone or by unilaterally dictated decisions are not considered healthy relationships.

In fact, the restricted use of power may be a fundamental shift in policies of firms entering long-term strategic alliance relationships (Achrol 1991). Strategic alliances should make less use of dependence-based coercive methods, but rely more on norms of sharing and equality (Achrol 1991; Alter & Hage 1992). Morgan and Hunt (1994) claim that power should no longer be the central concept if one attempts to understand successful relational exchanges. Despite this argument, distribution and use of power still appears to be an important factor that affects the ongoing interaction in long-term strategic alliances (Harrigan & Newman 1990).

Although strategic alliances imply cooperation and resource interdependence, self-interests may play a role in several cases, because partners remain independent in terms of their financial objectives. In addition, boundary-spanning managers representing partner firms may take divergent positions and impose their power over other in the operation of alliance. Such managerial power dynamics may have significant impact on the alliance relationships.

From a reciprocal social exchange perspective, the process of interaction and collaboration are characterized by harmony, balance, and equality rather than coercion and power motives (Alter & Hage 1992; Macneil 1985; Molnar 1978; Heide & Miner, 1992). For example, Heide and Miner (1992) found that partners in a cooperative relationship even refrained from using their power. Indeed, restraint in the use of power

by one partner over another is one of the social norms of governance and management (Kaufmann & Dant 1992; Macneil 1981). Cook and Emerson (1978) found some evidence that power use varies inversely with cooperation and commitment in exchange relationships.

Power equality between partners in a relationship is essential for positive interorganizational outcomes. Social exchange theory suggests that power is an important phenomenon underlying distributive justice (Homans 1976). The relative power partners perceived to possess exerts a strong influence on how they view their contributions as well as distributive outcomes. In power imbalanced relations, weaker parties may develop a sense of distributive injustice. The result can be frustration and conflict between partners (Bies, 1987; Kabanoff, 1991).

But, effective alliances function on the principle of accommodation and mutual adjustment. This encourages partners to engage in democratic and participative processes that reinforce learning, and cooperation among partners. Also power equality may induce partners toward cohesiveness and assertive pursuit of a fair share and thus resulting in the perception of effectiveness in the alliance. In sum, power equality is an important interaction process through which learning, and operational cooperation, and commitment to stay further in the alliance are shaped.

Summary: This section elaborated the significance of social exchange processes such as reciprocity, trust, and power equality in the performance and success of strategic alliances. In keeping with the objectives of the study and based on the literature reviewed the following conceptual model of relationships (Figure 2) between social exchange processes and alliance outcomes has been developed. This model depicts the first part of

the present study. It is hypothesized that social exchange processes are positively related to the alliance outcomes such as effectiveness, interfirm learning, and partner's propensity to stay in the alliance.

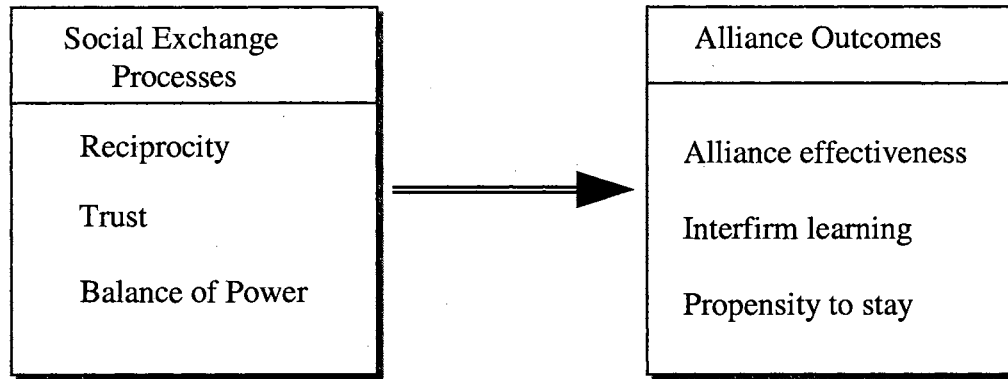


Figure 2. Proposed Model of Alliance Success

Interfirm and Environmental Contexts (Moderator Variables)

Environmental Uncertainty

Environmental uncertainty has long been a central concern of organizations (March & Simon 1958; Milliken 1987). A significant amount of research has been conducted to understand the significance and effects of environmental uncertainty on organizations' strategy, structure, decision making, and performance (see Milliken (1987) for reviews). Although efforts have been made to objectively assess environmental uncertainty, generally it is conceptualized as perceptual phenomenon, a property of organizational executives (Milliken 1987).

Perceived environmental uncertainty occurs when administrators perceive an organization's environment to be unpredictable. Perceptions of environmental uncertainty occur when the changes in components of the environment are very frequent and managers possess an incomplete understanding of the components of the business

environment such as suppliers, competitors, customers, technologies, and regulatory agencies. Environmental uncertainty may have significant impact on alliance management processes and governance decisions. Uncertainty and unpredictability of business environments also augment the complexity of alliance tasks such as joint R&D, product development, and marketing. In highly uncertain business environments individual partners may become obsessed with their own problems and lose sight of the joint objectives.

The uncertain environments are likely to increase the friction and conflicts between partners (Dwyer & Oh 1987) and demand parties to remain flexible and independent. The uncertainties of technology and demand patterns also reduce the perceived effectiveness in the alliance and deteriorate the relationship quality. The research in buyer-seller channel relationships observes that, in uncertain environments partners exhibit lower commitment and lower expectations of continuity.

Although social exchanges have been conceptualized as relational governance mechanisms that reduce the perception of risk and uncertainty in alliance relationships (Parkhe 1993), the uncertain environments reduce the efficacy of alliance relationships. Outcomes are likely to fluctuate widely in uncertain environments and cause partners to consider other strategic alternatives. That is, the effect of social exchanges will be less significant and will have lesser consequences when the partners incur losses due to frequent and fast changes in the markets, technologies, and competitive practices. Therefore, it is expected that environmental uncertainty will moderate the effects of social exchanges on perceived effectiveness, interfirm learning, and propensity to stay in the relationship.

International Alliances

International or global alliances are becoming an essential feature of corporations' overall strategy and structure. International alliances are crucial to achieving competitive advantage and securing future for many firms. Since international partners are likely to carry valid information and knowledge about their domestic markets, both partners are relatively equally interdependent on each other irrespective of the differences in their size and technological advantages. Because of the inherent information asymmetry partners have to depend on their foreign counterpart to achieve success in the international business operations.

But, international alliances involve certain innate challenges and difficulties arising out of sharp differences in the partnering firms' national origins, and socio-cultural, and political bases (Harrigan 1988; Parkhe 1991). Differences arising out of cultural differences between partners firms can severely affect the interfirm cooperation. Since organizations are rooted in the culture of their founding (Dunning 1979), the cultural diversity in international alliances may pose severe constraints on the alliance performance. Different cultural contexts make the transactions and resource sharing between partners less efficient, because of the difficulties involved in communication and socialization between culturally divergent partners. The language and distance barriers make it difficult to jointly plan and execute strategies.

Although international partner firms may trust each other and commit their resources to the alliance venture, international alliances often suffer from poor compatibility of human resource strategies between partners. Partner firms from foreign countries encounter several problems in designing and executing a human resource

strategy for the strategic alliance (Pucik 1988). The differences arise because, the partners from different societal and cultural contexts embrace divergent approaches in shaping their human resources for competitive advantage. Pucik (1988) pointed out the differences between Westerns and Japanese partners in recruiting and staffing, training and development, performance appraisal, and the compensation and reward system and how that led to misreading of the intentions and disagreements between partners. For instance, Pucik (1988) observed that Western manager's understanding of the performance achieved by Japanese managers in a strategic alliance is often limited by the language barriers and the language bias in performance appraisal is a frequent source of discontent among the Japanese staff. Similarly, differences in compensation and reward systems between partner firms may induce conflict and friction between managers within the alliance. Such conflicts may reduce the alliance effectiveness and discourage interactions between managers.

International alliances are, in general, more complex and uncertain. The alliance performance and knowledge transfer across international partners may be affected a host of factors not within the control of partners. For instance, international cost differentials, tariffs, transport costs, political risks of expropriation, and blocking of profit repatriation from foreign markets reduce the alliance effectiveness and discourage further cooperation between partners. Therefore, it is expected that despite the positive aspects of social exchanges in an alliance, the trust, reciprocity, and power sharing will have lesser impact on alliance performance, learning, and partner's propensity to stay in international alliances, because of the inherent complexities that plague international alliances.

Competitive rivalry between partners

Alliances are often formed between competitors. Partners with similar products, services, skills and assets that compete for the same markets and clients often form alliances to co-opt their uncertain business environments. Competitive alliances help circumvent the monopoly restrictive acts and regulations that restrict the formation of mergers, and acquisitions between competing firms. Alliances between rival firms can influence the structure of competition (Porter & Fuller 1986). Such alliances reduce the competitive intensity by binding the potential rivals into allies. They also help the competing partners to defend their advantages against market forces that are too strong for one firm to withstand (Glaister & Buckley 1996).

Despite the advantages, alliances with competitors involve tremendous risk (Balakrishnan & Koza 1993; Khanna 1998). Rival firms may use alliances as a mechanism to absorb the competitors' skills and technologies and cannibalize the partner (Khanna 1998). Especially, asymmetric partnerships (between large and small) between competitors poses a high risk for the smaller partner. For instance, a larger firm may find the alliance with a smaller partner unattractive after having absorbed the necessary skills and knowledge. If there is not sufficient attraction to continue in the alliance with a smaller competing partner, larger partner may choose to quickly terminate the alliance resulting in investment losses to the small partner.

Because of the competitive dynamics and chances for cannibalization, partners may find the alliance less rewarding and unattractive to continue further. It is expected that trustworthiness, reciprocity, and power sharing between competing partners in an alliance will have relatively lesser consequences on alliance performance, interfirm

learning, and partner's propensity to stay. Therefore, it is expected that competitive rivalry between partners will moderate the effects of social exchanges on perceived alliance effectiveness, interfirm learning, and partner's propensity to stay.

Summary: The above paragraphs discussed the various interfirm and environmental contexts in which alliances operate, and highlighted the significance of ongoing social exchange processes between partners for achieving alliance success. As elaborated, uncertain business environment, international partnerships, and the scope for competition between partners moderate the relationship between social exchanges and alliance outcomes. Figure 3 presents the conceptual model of relationships between moderators, social exchanges, and outcomes.

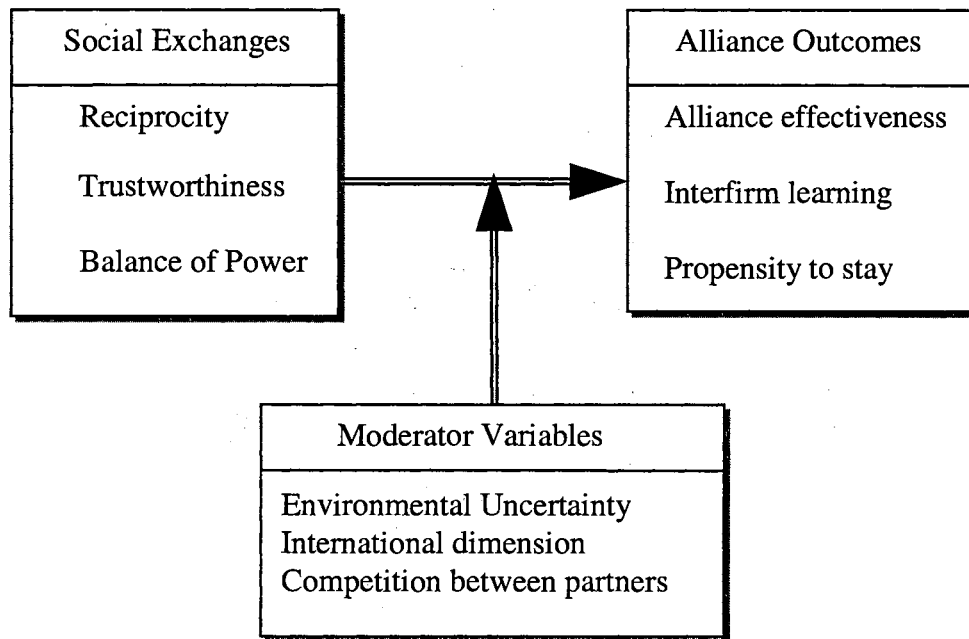


Figure 3. Moderating Effects of Interfirm Environmental Factors

The next chapter briefly summarizes the literature reviewed and presents the hypotheses tested in the study. The chapter 3 also elaborates the research design of the study and discusses the development of measurement scales employed in this study.

CHAPTER III

RESEARCH HYPOTHESES AND METHODOLOGY

The previous chapter reviewed and integrated the extant literature on social exchange processes and their influence on alliance outcomes, interfirm cultural diversity and its effects on social exchanges between alliance partners. Several scholars have argued the importance of relational social exchange processes for the success of interorganizational relationships. However, there is a paucity of research on the relationship and coordination processes within strategic alliances. First, the role of relational exchange processes in the performance of alliances has not been comprehensively explored in the extant literature. Second, the different interfirm and environmental contexts have not been successfully integrated into theory building on international strategic alliances.

This study attempts to advance our knowledge about relational governance and coordination processes and the effects of interfirm contexts on relational exchanges between partners. There are two main parts in the present study. First part of the research involves the examination of the influence of ongoing relational social exchange processes on outcomes in all types of strategic alliances. The second part specifically investigates the moderating effects of interfirm contexts on the relationship between

social exchanges and alliance outcomes. This study attempts to investigate the moderating effects of environmental uncertainty, international scope, and competition between partners. Two specific questions addressed by the research are:

1. How do relational social governance processes affect the success of alliance? i.e. the relationship between reciprocity, trustworthiness, and balance of power and dependent variables alliance effectiveness, interfirm learning, and propensity to stay in the alliance.
2. How do interfirm and environmental contexts such as uncertain environment, competition between partners, and international dimension in the alliance moderate the relationship between social exchange processes and dependent variables?

Research Hypotheses

Given the above research questions, relationships between three sets of variables are examined in the study. These are relational social exchanges, alliance outcomes, and moderator variables. The previous chapter examined three dimensions of relational social exchange processes: reciprocity, trustworthiness, and balance of power (power sharing or equality). This study incorporates these dimensions as independent variables of alliance outcomes (See Figure 2).

The previous chapter discussed the conceptual and empirical evidence in support of the relationships between the three social exchanges and alliance outcomes such as effectiveness, interfirm learning, and propensity to stay in the alliance. Based on the proposed relationships, a number of hypotheses are established. In the following paragraphs, a brief summary of the literature reviewed in the previous chapter for each of the variable is provided and hypotheses are presented.

Reciprocity: Cooperation emerges as the result of a slow, incremental sharing and investment of resources by both parties (Van de Ven & Walker, 1984; Larson, 1992). Unless the exchange parties perceive tangible indications of benefits, they will not further commit their resources to building a cooperative relationship. Successful collaboration requires one party to initiate this iterative process toward partner. The norm of reciprocity is central to this collaboration. Resources committed by one party also compensate for the other party's transaction-specific assets that are utilized in the relationship, and thereby invoke continuity and guarantee a stable relationship (Powell, 1990). Tangible actions that suggest reciprocity further reinforce the bond between partners and enhance accommodative behavior. Reciprocity will also enhance the feeling that the relationship is effective and worth the effort. The investments tie the firm to the relationship and should perpetuate commitment. Reciprocal commitment of resources by the partner will also enhance the need for joint planning and actions and result in operational integration of partners and learning from each other. Absence of commitment of resources on the part of one or both partners can cripple an alliance. On the contrary, committing time, resources, personnel and physical assets can foster more active involvement between managers at various levels of the organization and their counterparts.

Hypothesis 1a: Reciprocity between partners is positively related to interfirm learning.

Hypothesis 2a: Reciprocity between partners is positively related to perceived effectiveness in alliance.

Hypothesis 3a: Reciprocity between partners is positively related to propensity to stay in the alliance.

Interorganizational Trust: Trust is the core social component of exchange relationship (Larson 1991; Macneil 1980). Trust is an expression of confidence in certain social order and provides the foundation for cooperation. Cooperation requires trust especially when parties in a relationship place their fate partly in each other's hands (Deutsch, 1962). In other words, trusting is the belief that another party will perform an activity that is beneficial or at least not detrimental to oneself (Gambetta 1988). In a way trust serves as a potential initial asset of a cooperative relationship (Fichman & Levinthal 1991).

Interfirm trust is reported to be enhancing the security of the relationship and increasing cooperation in investments, risk sharing, and knowledge exchange in Japanese textile industry (Dore 1987). One resulting action of trust can be increased cooperation and commitment. Trust also has been found to encourage continuous interfirm communication and allow the information to flow freely between organizations (Weitz & Jap 1995). Trust enhances the scope of joint planning and actions by partners (Zaheer & Venkatraman 1995). This may enhance the symbiosis between the partners and results in effective alliance relationship. In general, there is support for the argument that trust results in enhanced cooperation, interfirm learning, and alliance effectiveness.

A recent framework argues that trust develops because of the perceived trustworthiness of the other party in a relationship. The trustworthiness is comprised of three factors: ability, benevolence, and integrity (Mayer et al 1995). Although each factor offers a unique perceptual perspective from which to consider the trustee, as a set these factors provide a solid and parsimonious for the empirical study of trust in a relationship. This study uses this trustworthiness as a construct to study the interfirm trust in the

alliance relationship. In addition, this study hypothesizes and examines the role of each of the above dimensions of trustworthiness on the alliance relationship.

Although all three factors are important to perception of trustworthiness, each may vary independently of others (Mayer et al 1995). These three factors may combine in idiosyncratic ways to reflect various levels of perceived trustworthiness in a relationship. In some situations, the trustee's ability may be more important than the other two factors. Other situations may involve simple tasks that do not warrant specific competencies, but trustor may expect a high degree of integrity from the trustee.

When all three factors were perceived to be high, the trustee would be deemed quite trustworthy; in contrast, it is possible for a perceived lack of any of the three factors to undermine trust. Thus, it is important to examine empirically, in an alliance context, the role of each of the dimensions of trust. This study treats the trustworthiness as a single construct as well as the three distinct dimensions and examines their impact on alliance outcomes.

Hypothesis 1b: Ability based trust in the relationship is positively related to interfirm learning.

Hypothesis 2b: Ability based trust in the relationship is positively related to perceived effectiveness in alliance.

Hypothesis 3b: Ability based trust in the relationship is positively related to propensity to stay in the alliance.

Hypothesis 1c: Benevolence based trust in the relationship is positively related to interfirm learning.

Hypothesis 2c: Benevolence based trust in the relationship is positively related to perceived effectiveness in alliance.

Hypothesis 3c: Benevolence based trust in the relationship is positively related to propensity to stay in the alliance.

Hypothesis 1d: Integrity based trust in the relationship is positively related to interfirm learning.

Hypothesis 2d: Integrity based trust in the relationship is positively related to perceived effectiveness in alliance.

Hypothesis 3d: Integrity based trust in the relationship is positively related to propensity to stay in the alliance.

Balance of Power: Traditionally, scholars opined that interorganizational relationships involve a relative power imbalance; that is one partner exerts its power and receives undue benefits (Teece, 1986; Pfeffer and Salanick, 1978; Blau, 1964). Such approaches to interorganizational relationships are detrimental to cooperative alliance. In general, all imbalanced relations are inherently unstable and unhealthy (Anderson and Weitz 1989). From a reciprocal social exchange perspective, the process of interaction and collaboration are characterized by harmony, balance, and equality rather than coercion and power motives (Alter & Hage, 1992).

Social exchange theory suggests that power is an important phenomenon underlying distributive justice (Homans, 1976). The relative power partners perceived to possess exerts a strong influence on how they view their contributions as well as distributive outcomes. Effective alliances function on the principle of accommodation and reciprocal trust. This encourages partners to engage in democratic and participative processes that reinforce learning, and cooperation among partners. Also power equality may induce partners toward cohesiveness and assertive pursuit of a fair share and thus resulting in the perception of effectiveness in the alliance. In sum, power equality is an important process through which learning, and operational cooperation, and commitment to stay further in the alliance are shaped.

Hypothesis 1e: Balance of power between partners is positively related to Interfirm learning.

Hypothesis 2e: Balance of power between partners is positively related to perceived effectiveness.

Hypothesis 3e: Balance of power between partners is positively related to propensity to stay in the alliance.

To summarize, it is hypothesized that each of the relational social exchange variables is linked to three alliance success measures. The hypothesized relationships are summarized in Table 3. These relationships are hypothesized to exist in all types of strategic alliances: equity or non-equity and domestic and international.

TABLE 2

HYPOTHESES PERTAINING TO SOCIAL EXCHANGES AND ALLIANCE OUTCOMES

Predictor Variables	Dependent Variables		
	Interfirm Learning	Perceived Effectiveness	Propensity Stay
Reciprocity	H1a +	H2a +	H3a +
Ability based Trust	H1b +	H2b +	H3b +
Benevolence based Trust	H1c +	H2c +	H3c +
Integrity based Trust	H1d +	H2d +	H3d +
Balance of Power	H1e +	H2e +	H3e +

Interfirm and Environmental Contexts (Moderators)

This study conjectures that various interfirm and business environments in which alliances operate determine the efficacy of the social exchange processes. In other words, the significance of social exchanges become more or less prominent in alliances depending on the context in which they operate. The following paragraphs summarize the literature on different interfirm and business contexts and their influences reviewed in

the previous chapter. Based on the literature reviewed on the effects of moderator variable on social exchanges and alliance outcomes, a number of hypotheses are presented (See Figure 3).

The interfirm and business environmental contexts affect the alliance relationships as well as outcomes. Highly uncertain environments pose serious challenge to cooperation. Fast changes in technologies and markets introduce frequent changes in firms' strategies, and structures. These frequent changes may lessen the level of complementarity in the alliance and may affect the relational equation between partners. Uncertainty in the business environment also affects the performance level of individual partners. In highly uncertain business environments individual partners may become obsessed with their own problems and loose sight of the joint objectives.

Uncertain business environments may cause wide fluctuations in outcomes and reduce the efficacy of alliance relationships. In general, alliances in uncertain business environments will be less effective, and reduce the propensity of the partners to stay in the alliance. The following hypotheses are posited:

Hypotheses 4a, 4b, 4c: The relationships between social exchanges (reciprocity, trustworthiness, and power equality) and interfirm learning will be weaker in uncertain environment.

Hypotheses 5a, 5b, 5c: The relationships between social exchanges (reciprocity, trustworthiness, and power equality) and alliance effectiveness will be weaker in uncertain environment.

Hypotheses 6a, 6b, 6c: The relationships between social exchanges (reciprocity, trustworthiness, and power equality) and propensity to stay will be weaker in uncertain environment.

International or global strategic alliances are becoming an essential feature of corporations' overall strategy and structure. International strategic alliances are crucial to

achieving competitive advantage and securing future for many firms. But, international alliances involve certain innate challenges and difficulties arising out of sharp differences in the partnering firms' national origins, and socio-cultural, structural, and political bases (Harrigan 1988; Parkhe 1991). Differences arising out of cultural differences between partner firms can severely impede the alliance effectiveness, interfirm learning, and propensity to stay.

International alliances are, in general, more complex and uncertain. The alliance performance and knowledge transfer across international partners may be affected by a host of factors not within the control of partners. For instance, international cost differentials, tariffs, transport costs, political risks of expropriation, and blocking of profit repatriation from foreign markets reduce the alliance effectiveness and discourage further cooperation between partners. Therefore, it is posited that

Hypotheses 7a, 7b, 7c: The relationships between social exchanges (reciprocity, trustworthiness, and power equality) and interfirm learning will be weaker in international than in domestic alliances.

Hypotheses 8a, 8b, 8c: The relationships between social exchanges (reciprocity, trustworthiness, and power equality) and alliance effectiveness will be weaker in international than in domestic alliances.

Hypotheses 9a, 9b, 9c: The relationships between social exchanges (reciprocity, trustworthiness, and power equality) and propensity to stay will be weaker in international than in domestic alliances.

Despite the advantages, alliances with competitors involve tremendous risk (Balakrishnan & Koza 1993; Khanna 1998). Alliance may result in a competing partner absorbing the skills and technologies of the other and cannibalize that partner firm (Khanna 1998). Especially, in asymmetric partnerships involving large and small

partners there is a high risk for the smaller partner. For instance, a larger firm may find the alliance with a smaller partner unattractive after having absorbed the necessary skills and knowledge. If there is not sufficient attraction to continue in the alliance with a smaller competing partner, larger partner may choose to quickly terminate the alliance resulting in investment losses to the small partner. Because of the competitive dynamics and chances for cannibalization, partners may find the alliance less rewarding and unattractive to continue further.

It is expected that trustworthiness, reciprocity, and power sharing between competing partners in an alliance will have relatively lesser consequences on perceived effectiveness, interfirm learning, and partner's propensity to stay. Therefore, it is expected that competitive rivalry between partners will moderate the effects of social exchanges on perceived alliance effectiveness, interfirm learning, and partner's propensity to stay.

Hypotheses 10a, 10b, 10c: The relationships between social exchanges (reciprocity, trustworthiness, and power equality) and interfirm learning will be weaker, if the competitive rivalry is high.

Hypotheses 11a, 11b, 11c: The relationships between social exchanges (reciprocity, trustworthiness, and power equality) and alliance effectiveness will be weaker, if the competitive rivalry is high.

Hypotheses 12a, 12b, 12c: The relationships between social exchanges (reciprocity, trustworthiness, and power equality) and propensity to stay will be weaker if the competitive rivalry is high.

Following sections narrates the research design and methodology employed to collect data for the examination of the above hypotheses.

Research Design and Methodology

The aforementioned hypotheses will be tested within the present study. This section explains the research design and methodology used in collecting the data and development of the measurement instrument.

Survey Methodology

A survey research methodology was used to collect data for the present study. The self-report questionnaire survey was conducted among key informants associated with strategic alliances such as alliance managers to obtain information on relational independent variables and the dependent variables. For smaller firms, the questionnaire was targeted to chief executives. This is consistent with the recommendations to make use of most knowledgeable respondents (Daft & Bradshaw 1980; Bagozzi & Phillips 1982; Venkatraman & Grant 1986).

The unit of analysis in this study is dyadic strategic alliance as represented by alliance managers, and currently the study examined the survey responses from one side of the alliance dyad. Due to limitations of time, and access, this study focused on the responses from one side of the dyad, though alliance relationships can be better examined by the responses from both sides of an alliance. Using a structured research instrument to interrogate the managers is the most appropriate method to examine the 'social process' such as exchanges and interactions between firms and their managers.

Sampling Framework

Since the study focused on the role of interfirm social exchanges, ideally the data would have been drawn from the total population of all strategic alliances. However, it

was not practical and feasible to draw a random sample from such a widely varying population. The researcher decided to sacrifice the external validity to a minor extent and selected firms in a convenient sampling approach. The researcher, however, took care to draw the sample from multiple industries, so that the results could be validated in multiple contexts. The researcher also hopes that this approach would still allow the examination of focal variables while other factors were held relatively constant (Cook & Campbell 1979).

The sampling of alliances was based on the criteria that included, 1) respondent firm nationality, 2) industry sectors, 3) time period, and 4) number of partners. This study targeted strategic alliances that had been formed by US firms (with domestic as well as international partners) between 1994 and 1998 in the industrial groups namely, biotech and pharmaceutical (Standard Industrial Classification [SIC] code 283), computers and office equipment (SIC 357), software (SIC 737), electronics components (SIC 367), and telecommunication (481). The sample selection was restricted to US respondents, because of the limitations on access and time to collect data from international partners. These industrial groups were selected because alliance has been a predominant strategy and partnerships and joint ventures were most prolific in these industries (Harrigan 1988; Hergert & Morris 1988). This timeframe was selected to capture the recent trends in the alliance formation, and for the reason that the alliances are at least one year old and have passed the initial formation phase and at the same time they are not too old to have accomplished their alliance goals warranting the end. The researcher believes that the chosen timeframe would capture effectively how the interactions and social exchanges structure the quality of relationships at a given point in

time. This would also ensure more consistent research findings regarding the relationship between alliance coordination processes and the outcomes in terms of effectiveness, extent of interfirm learning, and long-term commitment to stay in the relationship.

The initial search and identification of the target firms and the key informants was conducted using 'LEXIS-NEXIS' database and 'Predicast's PROMT business and industry Internet database. The alliances identified were further cross-verified by referring to F&S index of corporate change and other sources such as journals, industry reports, company annual reports, and web page of companies. Several researchers have previously used company announcements and reports, case studies and other published information as sources of alliance data (Glaister & Buckley 1996; Gulati 1995; Hergert & Morris 1988). Most of the news reports and company web pages on alliance partners narrate the scope, objectives, and managerial expectations. The key informants were identified from the news reports, Internet business guides (e.g. <http://biz.yahoo.com>), and company web pages. If the alliance manager could not be identified in the reports, the Public Relation Officer (PRO) or other contact person listed in the reports was contacted to identify the key executive in-charge of the alliance. In a few cases, Standard & Poor's Register of Corporations, Directors and Executives was referred to verify the title and address of the key executive likely to be able to complete the survey.

The researcher screened and omitted complete mergers, acquisitions, fully owned international subsidiaries. Alliances that had more than two partners (network alliances) were also omitted, since the focus of this study was on the dyadic relationships. About 830 alliances were initially identified from the above sources. The published information concerning the equity structure, motives, objectives, and scope of alliance activities were

used to screen and identify the alliances. A total of 610 firms formed the final sample for which complete information of names and addresses of the firms and the contact persons was available. The final sample constructed contained 610 firms with each firm representing a separate alliance.

Data Collection

Multiple survey techniques were employed to elicit information from the respondents throughout the study. Though mail survey was the major technique used for data collection, electronic mails and telephone interviews were used to verify the addresses of the respondents, and to follow up the informants. During the telephone follow-ups, the researcher had the opportunity to interview several key informants.

To maximize the response rate, the researcher tried several survey techniques recommended by Dilman (1978). The following sequential steps were taken during the entire survey process. 1) The researcher sent emails or letters, or made phone calls before mailing the first wave of surveys, 2) mailed the first wave with a detailed letter requesting participation and business-reply envelope, 3) mailed the second wave of survey with a reminder letter to all non-respondents, and made follow-up phone calls to about 90 non-respondents. The researcher also used electronic mails to send questionnaires to several managers. Due to constraints of time and funding, the researcher could not phone up all the non-respondents. Of the 90 phone calls made, the researcher could directly talk to only about 35 executives. However, the phone calls were productive and resulted in responses. During the phone calls, the researcher had the opportunity to interact with key alliance executives and received valuable qualitative information on the important issues of the study.

Respondents

Of the 610 questionnaires mailed, 137 (22.45 %) responses were received. Nine responses were unusable because of missing data, resulting in 128 (20.9 %) usable responses. This response rate was satisfactory considering that similar 15-24 percent response rate reported in published studies on interfirm alliances (e.g., John 1984; Provan & Skinner 1989). Since the respondents were senior executives directly involved in managing the alliance and the information collected was of very sensitive in nature, the researcher was pleased with this response rate. The questionnaire required the respondent to provide information with reference to the partner identified. This response rate is also satisfactory, given the unavoidable logistical limitations in reaching the executives. Many firms told the researcher that it is their policy not to respond to surveys. During the follow-up phone calls, the researcher also realized that, the secretaries often screened the questionnaire from the executives. The researcher also found it difficult to speak directly with the executives, because of their busy schedules.

Possible nonresponse bias was examined by comparing survey respondents (N = 128) demographic characteristics with those of nonrespondents and those returned incomplete and unusable responses (N = 482). Three firm characteristics namely, sales, assets, and number of employees were examined between these two groups. One-way between-groups analysis of variance (ANOVA) resulted in a statistically non-significant F of 1.181 for number of employees ($p = .278$), non-significant F of 1.614 for sales ($p = .204$), and non-significant F of .696 for assets ($p = .404$). Thus, the responding firms did not differ structurally from the nonresponding firms in terms of their sales, assets, and number of employees.

Measurement Instrument

This study operationalized the dependent and independent variables using multi-item measures. Although not many established multi-item measures and scales have been developed exclusively for strategic alliances, this study made use of the measures developed in various behavioral and interorganizational studies conducted in the fields of management and marketing, and adapted them to the strategic alliance context. The final questionnaire instrument included three sets of measures: (1) on relational processes such as reciprocity, trustworthiness, and balance of power (2) the success measures such as perceived effectiveness, interfirm learning, and willingness to stay in the alliance and (3) moderator variables environmental uncertainty, and extent of competition (rivalry) between partners. All the above items were measured on 7-point scales. These scales were pilot-tested by the researcher under a research project conducted by the Oklahoma State University (Frankwick, Wiener, Senthilkumar, & Larson 1998-working paper).

Factor analysis, correlation analysis, and other statistical methods were used to test and evaluate the measurement-related validity. The research hypotheses were tested using multiple regression technique. Details of the constructs and their operationalization are discussed below.

Pilot Studies: Although many of the measurement scales used in this study were adapted from the published research, before the questionnaire was administered to the alliance managers, the scales were pilot tested. In a research project conducted by Oklahoma State University (Frankwick, Wiener, Senthilkumar, & Larson 1998-working paper), the researcher had the opportunity to test many of the scales used in this study. The research project involved the study of evolution of interfirm relationships among

Oklahoma based small and medium scale manufacturing enterprises. The scales were first shown to two of the faculty coordinators and a company executive who has been the representative of companies participating in this project. Based on their comments regarding content, clarity and wording of the questions minor changes were made. This questionnaire was administered to twenty firms that were part of this research project. Fourteen firms responded. The respondents were top managers of these small and medium-sized enterprises. Cronbach alpha analysis of the responses was done to verify the reliability of measurements. The results indicated that the scales met the required minimum reliability coefficient 0.70 as recommended by Nunnally & Bernstein (1994).

Since the scope and objectives of this present study are different from the above-mentioned project, and it involved different industries, the items of many of the scales had to be modified and generalized to suit the context. The present study also required the development and measurement of a few new constructs. The researcher circulated the questionnaire to Business School faculty members and doctoral students familiar with research in strategic alliance to assess the face validity of the selected construct items. Based on their comments regarding clarity of the questionnaire items further refinements were made. With the final instrument, the researcher conducted a pretest interviews with two alliance executives in Atlanta and California. These executives recommended several useful suggestions to improve the format and wording of the questionnaire items.

Scale counterbalancing: To test and reduce the effects of consistency artifacts, the survey questionnaire was designed in two formats. In the first format, the measures of independent variables preceded the dependent variables and in the second format the measurement items of the independent variables were placed after the dependent

variables. Although Podsakoff and Organ (1986) suggested that “the correlations would be similar using either method”, the researcher felt that this twin format would help detect the respondent inconsistency if any, and also counterbalance the effects of artifacts. Each format had 50 percent of the questionnaires. Of the 128 responses 53 responses were from the questionnaires with dependent first and 75 responses came from the questionnaires with independent variables first. Although one-way between groups analysis of variance did not reveal any significant difference between the groups for most of the variables, the researcher observed that there is a noticeable difference in a few correlations between two groups.

Alliance Success Measures

The success and stability of an alliance can be captured by using performance measures, the extent of interfirm learning, and the propensity to stay (commitment to stay). Although quantitative and financial indicators can be used to measure performance, it is difficult to track the benefits of alliance quantitatively. Since alliances are often between SBUs or functional divisions of the large corporations, the corporate level financial and market indicators may not reflect the benefits of alliance alone. Alliances also are aimed at long-term benefits. Several financial indicators are less effective in capturing the long-term benefits that accrue to alliance partners. In addition to joint efforts of partners, individual firm efforts and general economic conditions may be reflected in the quantitative financial measures (Bucklin & Sengupta 1993; Kumar et al. 1992). Tracking and separating the contribution of alliance is difficult.

Alliance effectiveness: This study attempts to capture the performance of alliance in terms of a qualitative measure, the perceived effectiveness of alliance. This measure

has been used in several interorganizational studies (Van de Ven & Ferry 1980; Van de Ven & Walker 1984; Bucklin & Sengupta 1993). Van de Ven and Walker (1984) suggest that effectiveness is judged by the extent the relationship is productive, worthwhile, and equitable. Simonin (1997) called alliance performance as tangible collaborative benefits and measured it by the extent alliance contributed to profits, market share, and competitive advantage. Adapting from the above scales, a five-item measure has been developed to measure perceived effectiveness. All five items are 7-point scales ranging from '1=strongly disagree' to '7=strongly agree'.

Interfirm learning: Alliance success is also reflected in the extent of interfirm learning (Simonin 1997). Simonin calls interfirm learning as intangible benefits. In successful collaborative alliances, there are many learning benefits. First, the partners learn about interfirm cooperation. Powell, Koput, and Smith-Doerr (1996) argued that interfirm learning involves development of cooperative routines that help partners to better manage the interfirm relationships effectively, and enable transfer of critical resources across alliances. Partnering firms learn to adjust each other's concerns, transfer knowledge and other resources across each other and take joint action for co-optation of environment. In the extant research, this has been also referred to as joint action and measured using indicators – that captured the extent of joint planning and forecasting between partners in the alliance (Heide & John 1990; Zaheer & Venkatraman 1995). Firms also learn the specific skills and competencies held by the partner for which alliances are created. The success of alliance is also reflected by the extent of learning such skills and competencies (Simonin 1997). Following the above literature, a four-item

measure was designed to capture the extent of interfirm learning in the alliance. All items are seven-point scales ranging from '1=not at all' to '7=a great deal'.

Propensity to stay: Another measure of alliance success employed in this study is the propensity of the partner to stay in the alliance or in other words, propensity to stay in the alliance. Since abrupt dissolution is the major problem facing alliances, continued commitment to stay in the alliance should be an important indicator of alliance success. Following Anderson and Weitz (1992) and Mohr and Nevin (1990), a five-item measure with one reverse item was adapted to measure the long-term affective commitment and willingness to stay in the alliance. This measure captured the extent of desire to continue the alliance relationship because of the positive affect toward the partner and the partner's perception of both its own and its partner's intent to remain in the relationship.

Relational Social Exchanges

Reciprocity: From the social exchange theory point of view, reciprocity implies that partners in the exchange relationship responds to the actions taken by the other in a reciprocal fashion (Blau 1964; Gouldner 1960; Homans 1961). Investments or other inputs committed by one party evoke a moral obligation of the other party to reciprocate the same. This moral obligation of partners is also referred to as a joint input commitment or mutual commitment (Williamson 1985; Dwyer et al. 1987). The given literature emphasizes two dimensions in the structure of commitment: they are credibility and proportionality or symmetries in commitment of the partners (Anderson & Weitz 1992; Gundlach et al. 1995). Credibility refers to the magnitude of the parties' combined commitment. The larger and more significant the resources committed by both partners, the more stronger the social norms and relational process in the alliance enhancing

stability and success of the alliance. Following the literature a three-item measure was developed to capture the extent of resources in terms of finance, technology, physical facilities, managerial resources, and time committed by both parties. To take into account the mutuality, reciprocity was measured as the total sum of a partner's account of the resources committed by itself and its perception on the extent of resources committed by the other party. All the items are seven-point scales ranging from 'strongly disagree to strongly agree'.

Trustworthiness: Following Ring and Van de Ven (1992), and Anderson and Narus (1990), this research focuses on the exchange dyad to conceptualize and measure the interorganizational trust. The researcher is specifically interested in studying trust in terms of confidence in one party's (trustor's) expectations about another's (trustee's) behavior as well as goodwill. In this study, trustworthiness is conceptualized as the trustor's perception of trustee's trustworthiness. This conceptualization focuses on a party's relational trust based on the interaction and experience with a particular partner rather than a party's general propensity to trust. Mayer et al (1995) offer a theoretical framework to understand the attributes of trustee that lead to trust and define the construct of trustworthiness. They argue that trustworthiness is comprised of three factors: ability, benevolence, and integrity. Ability is that groups of skills, competencies, and characteristics that a partner perceives in the counterpart. Benevolence is the extent to which a specific partner is believed to do good to the focal party. Integrity refers to the extent a partner is perceived to adhere to certain principles acceptable to the focal party. Based on this framework, Mayer and Davis (1998) created and validated an instrument

for measuring trustworthiness. This study relied on this instrument for measuring the perceived trust in the alliance relationship.

A 17-item measurement instrument from Mayer and Davis (1998) was adopted and modified to reflect the interfirm alliance context of the study. 'Ability' factor in the trust was measured using 6 items that captured the focal party's perception of the partner's capabilities, knowledge, and skills related to the alliance. 'Benevolence' dimension was measured using 5 items that captured the extent the focal party perceived the partner to do good. 'Integrity' dimension was measured with 6 items that captured the focal party's perception regarding partner's fairness, sense of justice, consistency, and values. The items indicated the extent of the above dimensions on seven-point scales ranging from 'strongly disagree' to 'strongly agree'.

Balance of Power: This construct measured is developed on the basis of existing research that addresses the interfirm influence and bargaining power (Gaski 1984; 1994). Four items are used to measure the extent to which a firm can influence the other in decisions concerning marketing, R&D, technology, and finance related matters, and the extent the power is balanced between partners. The first and second items measure the influence of the respondent firm over the other firm and attributed power of the partner firm respectively. The absolute difference between these two scales (the power of the respondent firm and the attributed power of the partner) is used to measure power imbalance and reversed to capture the balance of power. Bucklin & Sengupta (1993) has used a similar technique to measure power imbalance in marketing alliances. This score is used in combination with third and fourth items that capture the power equality in the

alliance. All items are seven-point scales with 'strongly disagree' and 'strongly agree' as the anchors.

Moderator Variables

Environmental Uncertainty: Following the description and conceptualization of Milliken (1987) and Miles and Snow (1978) a five-item measure of environmental uncertainty has been adopted here. This measure captured the perceived uncertainty in the partner firm's principal business environment in terms of marketing practices, product/service obsolescence, predictability of competitors' actions, and consumer demand patterns. All five items are seven-point scales with 'strongly disagree' and 'strongly agree' as the anchors.

Competition between partners: This is a new scale developed to capture the extent of present competition and potential for future competition between partners. Two items are used to measure the extent of competition between the partners participating in the alliance. The items are seven-point scales with 'strongly disagree' and 'strongly agree' as the anchors.

International dimension: An alliance is classified as international in scope, if the partners' corporate headquarters are located in two different countries. A dummy variable was coded "1" if the alliance involved international partnership and coded "0" otherwise (domestic).

Control Variables

The survey instrument also included questions pertaining to firm and respondent characteristics. The important firm characteristics surveyed are: number of employees, type and scope of strategic alliance, major line of business of alliance, number of alliances

the firm has entered into, past alliance experience between partners, percentage of equity invested in the alliance (if any).

This study will control for the effects of the following variables: firm size, industry, past alliance experience, importance of specific alliance to the partners, number of alliances the respondent has entered into, and the type of alliance (joint venture, minority, non-equity differences). Of these variables, the number of alliances and past experience with partner are expected to share significant variance in the relationships between social exchanges and dependent variables. Past experience with a partner smoothens the interfirm interactions and exchange processes, and enhances the effectiveness and learning in the alliance. Past experience help overcome the initial difficulties associated with exchanges and transfers and it helps the partners to reach stability in relationship quickly. Equity/non-equity effects were controlled by assigning dummy variables to the generic classification of alliances (Das and Teng 1998), namely non-equity, minority equity, and joint venture types.

In addition, the survey included five items to capture the extent of reliance on formal controls and monitoring to coordinate the alliance. This measure will be used as one of the control variables along with other control variables such as size, and industry in the test of relationships between social exchanges and alliance outcomes. This measure is a new scale. Following the arguments of Alter and Hage (1993) and Williamson (1990), and the measure of formality in interfirm relationships developed by Ruekert and Walker (1987), a five-item measure has been adapted to capture the extent of formal monitoring and control employed in the alliance. All five items are seven-point scales with 'strongly disagree' and 'strongly agree' as the anchor points. All the

measures, their sources, and reliability coefficients (Cronbach's alphas) from the extant literature and pretest of these scales are reported in Table 3. A complete survey questionnaire is provided in Appendix A.

TABLE 3
SUMMARY OF MEASURES

Measures	Sources
Perceived effectiveness	5 items adapted from Bucklin and Sengupta (1993), Simonin (1997), and Van de Ven and Walker (1984) (Cronbach alpha = 0.79)
Interfirm learning	4 items adapted from Powell et al. (1996), and Simonin (1997) (Cronbach alpha = 0.75)
Propensity to stay	5 items adapted from Anderson and Weitz (1992), and Mohr and Nevin (1990) (Cronbach alpha = 0.75)
Reciprocity	6 items adapted from Anderson and Weitz (1992), and Gundlach et al. (1995) (Cronbach alpha = 0.92)
Trustworthiness	17 items adapted from Mayer et al (1995) and Mayer and Davis (1998) (perceived trustworthiness of the partner) (Ability based trust – 6 dimensions; Benevolence based trust – 5 dimensions; Integrity based trust – 6 dimensions)
Balance of power	4 items adapted from Gaski (1984), and Emerson (1962) (Cronbach alpha = 0.73)
Formal controls	5 items adapted from Ruekert and Walker (1987)
Environmental Uncertainty	Miles and Snow (1978); Milliken (1987).

CHAPTER IV

TESTS OF HYPOTHESES AND RESEARCH RESULTS

This chapter recounts the empirical findings from the study. A descriptive profile of respondents and the organizations they represent, and the nature and scope of alliances captured in this study is first provided. Next an assessment of measures of key constructs is presented. Finally, tests of hypotheses are conducted and the results are presented.

Profile of Strategic Alliances

The sample for the study examined in this section came from 128 professional managers representing 128 distinct alliances formed by US firms between 1994 and 1998.

Characteristics of Strategic Alliances

Nature of alliance: The alliances vary from long-term contractual relationships to establishment of joint ventures between partner firms. The extent of ownership or equity shared by partners may not only influence the extent of social exchange between partners, but also affect the stability in the relationship between partners. Based on the reporting of the 128 firms that responded, 71 (55.5%) were of non-equity based, 33 alliances (25.8%) were of minority-equity type, and 24 alliances (18.8%) were joint ventures. Although

most of the alliances reported in this study were of non-equity type, the proportions fairly represent the population of such strategic alliances. In equity (both minority and joint venture types) type alliances, the percentage of equity held in the alliance by the respondents ranged from 3% to 95%. Of the 128 alliances, 80 alliances (62.5%) were reported to be domestic partnerships, i.e. between US companies, and 48 alliances (37.5%) were international partnerships, i.e. between US and Non-US companies.

Scope of alliance: Another important classification of alliance is based on the important purpose or strategic objective of the alliance. Although alliances may have multiple goals with a broader scope, this classification was based on the primary strategic objective reported in the questionnaire as well as the secondary sources. Of the 128 alliances, 51 (39.8) were R&D focused, 30 (23.4%) were manufacturing based, and 47 (36.7%) were marketing based.

Respondent-Firm Characteristics

Past experience and Number of alliances: Of the 128 alliances, 49 (38.3%) were repeat alliances, i.e. partners in a specific alliance had previous relationships with each other. Another factor that may influence a firm's relationship with a partner firm is its experience in dealing with other partners. Specifically, the total number of alliances a firm is currently engaged in may be an important factor influencing how the firm may behave with a specific partner. The number of alliances respondent firms engaged with ranged from 1 to 200 alliances.

Firms Line of Business: Firms responding to this study came from wide variety of industrial sectors. Of the 128 firms providing usable responses, 36 (28.1%) were Biotech companies, 16 (12.5%) were Computers & Office Equipment firms, 29 (22.7%) were

Software firms, 20 (15.6%) were Electronic components manufacturers, and 27 (21.1) were telecommunication companies.

Firms' structural characteristics: One major indicator of firm size is the number of employees. The number of employees of the firms responding in this study ranged from 5 to 85400. Of the 128 respondent firms, 10 (7.81%) had up to 50 employees, 14 (10.93%) firms had 51-100 employees, 41 (32.03%) firms had 101-500 employees, 12 (9.37%) firms had 501-1000 employees, 24 (18.75%) had 1001-5000 employees, 9 (7.03%) had 5001-10000 employees, and 18 (14.06%) had more than 10000 employees.

Other major indicators of a firm's size are its total assets and sales. From secondary sources, the respondents' total sales and assets figures for year 1999 were collected. The total sales of these firms ranged from \$ 0.19 million to \$ 25.3 billions. Of the 128 firms, 17 (13.28%) firms had total sales of under \$ 10 millions, 49 (38.28%) firms had total sales of \$ 10-100 millions, 35 (27.34%) firms had total sales of \$ 100-1000 millions, and 27 (21.09%) had total sales of more than \$ 1 billion.

Assets of these firms ranged from \$ 1.67 million to \$ 48.26 billions. Eleven (8.59%) firms had total assets of under \$ 10 millions, 48 (37.5%) firms had total assets of \$ 10-100 millions, 34 (26.56%) firms had total assets of \$ 100-1000 millions, and 35 (27.34%) firms had total assets of more than \$ 1 billion.

Respondent Traits: The potential respondent for this study was identified with a key criterion – whether the respondent was a key boundary spanning official who is directly managing the alliance venture as well as dealing with the partner in the alliance. The title of the respondents to this study is widely varying. Respondents included CEOs, vice presidents for strategic alliances or joint ventures, directors of alliances, and R&D

directors, general managers, chief engineers, and marketing vice presidents. The functional background of these executives is also of a widely varying. 41 (32%) of the respondents had marketing background, 18 (14.06%) had manufacturing background, 37 (28.9%) had come from R&D or engineering, 24 (18.8%) had information systems background, 8 (6.3%) had finance or legal background. The respondents' tenure in their current position ranged from 1 to 18 years.

Summary

The firms participating in this study represented a wide variety of strategic alliances and came from a wide range of industries. The informants for this study were key executives who were directly associated with the alliances under study and were representative of top management with widely varying functional background. Most of the respondents had adequate years of work experience and possessed the expertise and knowledge to provide valid information about alliances.

Measurement of Key Constructs

This section presents an assessment of the measures used in this study. The dimensionality and reliability of the measures were examined through principal components factor analysis and Cronbach's alpha (α) reliability analysis. The key constructs assessed here are social exchange between partners (Reciprocity, partner's trustworthiness, power equality (balance of power), alliance performance and stability measures or dependent variables (perceived effectiveness, interfirm learning, propensity to stay), and control measures such as formal control, and alliance importance, and moderator constructs rivalry between partners and industry uncertainty.

As a first step in the analysis, principal components factor analysis with a varimax rotation procedure was conducted to examine whether the measurement items converged with the respective constructs with sufficient factor loadings. The criterion was latent root or eigen value > 1.0 and items loading on their respective constructs with a factor loading of 0.5 or higher. With all the measurement items of the independent and dependent variables (eight constructs), factor analysis results revealed that there were eight distinct constructs and the items loaded on their corresponding constructs. There was no cross loading of the items. The factor structure results provided support for the convergent and discriminant validity of the constructs. In addition the researcher examined the Unidimensionality of each construct with separate factor analyses and Cronbach's alpha statistics were then calculated for assessing scale reliabilities.

Social exchanges between partners

Three constructs were included as measures of relational social exchanges between alliance partners: Reciprocity, trustworthiness, and balance of power. The factor analysis results for the measure of reciprocity is presented in Table 4. For this construct, a unidimensional factor structure was identified; all items loaded at levels above 0.50. The cronbach's alpha was 0.93

TABLE 4
RESULTS OF PRINCIPAL COMPONENT FACTOR ANALYSIS
MEASURE - RECIPROCITY

<u>Item</u>				<u>Factor Loadings</u>
1. Our firm has committed a substantial amount of financial resources to participate in the alliance with the partner.				.857
2. Our managers have spent a lot of time and energy to maintain the alliance.				.856
3. Our firm has committed substantial human, technological, or marketing resources in the alliance.				.857
4. The partner has committed a substantial amount of financial resources to participate in the alliance with our company.				.922
5. The partner firm's managers have spent a lot of time and energy to maintain this alliance.				.823
6. The partner firm has committed substantial human, technological, or marketing resources in the alliance.				.824
Eigen value	4.40		Cronbach's alpha	0.93
% of Variance	73.45			

The factor analysis results for the measure of trustworthiness are provided in Table 5. This construct was measured with 17 items for capturing three dimensions of trustworthiness: ability, benevolence, and integrity of partner as perceived by the focal respondent firm. Ability dimension was measured with 6 items, benevolence was measured with 5 items, and integrity was captured with 6 items again.

To understand the breadth and multidimensionality of this construct, a principal component analysis with “varimax” rotation was performed on items tied to ability, benevolence, and integrity dimensions of trustworthiness. A three-factor model was expected *a priori* as suggested by Mayer et al (1997). This analysis produced three factors with eigen values greater than one, which together accounted for 81% of the variance in the data. The first factor, ability based trust perceived in the relationships,

explained 62.69 percent of the variation and had an eigen value 10.66. This measure suggests that the skills, abilities, knowledge of the partner as perceived by the respondents result in higher degree of trustworthiness in the relationship. The second factor, integrity based trust perceived in the relationships, explained 11.02 percent of total variation and had an eigen value of 1.87. The third factor, benevolence based trust perceived in the relationships, explained 7.45 percent of total variation and had an eigen value of 1.27. The measurement items loaded on corresponding single factor levels of 0.50 or higher, with low loadings on other factors.

The reliability of the sub-scales was confirmed through examining Cronbach's alpha for each dimension of trustworthiness in the relationship. The coefficient alpha for ability, integrity, and benevolence based trust were 0.96, 0.93, and 0.92 respectively. The scales display a high degree of reliability.

TABLE 5

**RESULTS OF PRINCIPAL COMPONENTS ANALYSIS WITH 'VARIMAX' ROTATION
MEASURES OF TRUSTWORTHINESS**

<u>Item</u>	<u>Factor Loadings</u>		
	<u>Ability</u>	<u>Integrity</u>	<u>Benevolence</u>
1. The partner firm is very capable of performing its role in the alliance.	.837	.265	.344
2. The partner firm is known to be successful at the things it tries to do.	.876	.228	.184
3. The partner firm is well qualified for the alliance.	.845	.309	.280
4. The partner firm has much knowledge about the work that needs done in the alliance.	.807	.283	.289
5. We are very confident about partner firm's skills.	.849	.235	.331
6. The partner firm has specialized capabilities that adds value to the alliance.	.845	.273	.290
7. While making important decisions, the partner firm is concerned about our company's welfare.	.239	.423	.760
8. The partner firm would not knowingly do anything to hurt our company.	.381	.193	.731
9. Our firm's needs are important to partner firm.	.242	.365	.778
10. The partner firm looks out for what is important to our firm in the alliance.	.325	.264	.753
11. The partner firm will go out of its way to help our firm.	.322	.234	.816
12. The partner firm has a strong sense of justice.	.258	.711	.474
13. The partner firm is fair in business dealings with us.	.322	.737	.391
14. This alliance partner stands by its word.	.325	.774	.308
15. The partner firm's behaviors are not very consistent.(R)	.230	.778	.204
16. We like the partner firm's values and ideals.	.213	.850	.138
17. Sound principles seem to guide the partner firm's actions.	.238	.828	.279
Eigen values	10.61	1.92	1.26
% of total variance	62.45	11.33	7.40
Cronbach's alpha	0.96	0.93	0.92

The factor analysis results for the measure of power balance between partners appear in Table 6. A unidimensional factor structure was identified, with all the items loading at levels above 0.5 or higher. The reliability coefficient (Cronbach's alpha was 0.83 for this construct measure)

TABLE 6
RESULTS OF PRINCIPAL COMPONENTS ANALYSIS
MEASURES OF POWER EQUALITY (BALANCE OF POWER)

<u>Item</u>	<u>Factor Loadings</u>
1. Power imbalance (difference between firm A's and firm B's influence)	0.828
2. Our firm and the partner company have equal say in all the business dealings in the alliance.	0.881
3. Our firm and the partner firm have equal influence on each other on all alliance related decisions.	0.898
Eigen Value	2.267
% of variance	75.56
Cronbach's alpha	0.83

The mean scores for the relational social exchanges are provided in Table 7. One way between-groups ANOVA did not reveal any significant difference between domestic and international alliances for all the variables, except for the variable power equality.

TABLE 7
MEAN SCORES ON MEASURES OF RELATIONAL SOCIAL EXCHANGES

Measure	All Alliances Mean Score (N = 128)	U.S Domestic Mean Score (N = 80)	International Mean Score (N = 48)
Reciprocity (6 items)	4.44	4.42	4.48
Ability-Trust (6 items)	4.66	4.56	4.82
Benevolence-Trust(5 items)	3.81	3.79	3.86
Integrity – Trust (6 items)	4.38	4.37	4.39
Interfirm Trust (17 items)	4.31	4.27	4.38
Power Equality (3 items)	4.75	4.57	5.05

Alliance Performance and Stability Measures

The alliance performance and stability was captured with three constructs namely, interfirm learning, perceived effectiveness, and propensity of the partner to stay in the alliance. The extent of interfirm learning was measured with 4 items, the perceived effectiveness and propensity to stay in the alliance were measured with 5 items each. The mean scores for these measures are presented in the Table 8.

TABLE 8

MEAN SCORES ON MEASURES OF ALLIANCE PERFORMANCE & STABILITY

Measure	All Alliances Mean Score (N = 128)	U.S Domestic Mean Score (N = 80)	International Mean Score (N = 48)
Interfirm learning (4 items)	4.22	4.00	4.31
Effectiveness (5 items)	4.65	4.52	4.85
Propensity to Stay (5 items)	4.55	4.30	4.95

A principal components analysis was conducted to examine the unidimensionality of the above constructs. The results indicated that the above constructs are unidimensional with factor loading levels 0.50 or higher. The reliability coefficients (Cronbach alpha) indicated a higher degree of reliability of these measures. The results of the factor analysis and reliability analysis are presented in Table 9.

TABLE 9
RESULTS OF PRINCIPAL COMPONENT FACTOR ANALYSIS
MEASURE – INTERFIRM LEARNING

<u>Item</u>				<u>Factor Loading</u>
1. Our firm has learned to jointly execute marketing, R&D, or production operations with the alliance partner.				0.914
2. Our firm has learned to exchange skills, know-how, or technologies with the partner company.				0.867
3. Our firm has gained new techniques, competencies or technologies from the partner.				0.912
4. Our firm has developed new ideas, or skills because of the strategic alliance.				0.927
Eigen value	3.279	Cronbach'a alpha		0.92
% of variance	81.97			

MEASURE – ALLIANCE EFFECTIVENESS

<u>Item</u>				<u>Factor Loadings</u>
1. Our firm's relationship with the partner in this alliance has been very productive.				0.898
2. Our firm's relationship with the partner in this alliance has been very worthwhile.				0.796
3. Benefits and returns from the alliance have been fair and equitable.				0.902
4. Alliance with this partner has contributed to our profits.				0.901
5. This alliance has contributed to achieving market share or competitive advantage.				0.894
Eigen value	3.863	Cronbach'a alpha		0.92
% of variance	77.26			

MEASURE – PROPENSITY TO STAY

<u>Item</u>				<u>Factor Loadings</u>
1. Joining this alliance may be a mistake on our part(R).				0.894
2. Our firm will gain a lot by continuing in this alliance.				0.924
3. We expect our relationship with the alliance partner to continue for a long time.				0.896
4. Our firm made the right decision in choosing to participate in this alliance.				0.906
5. We would like to continue this alliance, because we enjoy our relationship with the partner firm.				0.913
Eigen value	4.108	Cronbach's alpha		0.94
% of variaance	82.15			

Other variables

This study also employed a few other constructs in the theoretical model such as formal controls, and environmental uncertainty. Multi-item scales were developed to measure these constructs. The “Formal controls” variable was introduced in the empirical model as an alternative explanation for the performance and stability in the alliance. Five items were used to capture the extent of formal, legal, and procedural mechanisms employed in the alliance. The “Environmental uncertainty” factor is hypothesized as a moderator of relationships between social exchanges and alliance performance measures. A five-item measure was used to capture the extent of uncertainty in the respondent’s industry in terms of product/service obsolescence, predictability of market demands, degree of change in technologies.

The principal components factor analysis of the formal control measure indicated that one of the items “Our firm’s relationship with the partner is very formal” loaded low as .536 on formal control factor, while other items loaded substantially high. Similarly, the reliability analysis indicated that this particular item had low correlation with the total correlation, and if this item deleted the alpha coefficient of the scale would improve. The researcher decided to delete this item, and conducted the factor analysis and reliability analysis only with remaining four items only. The results indicated that with four items, the “formal controls” measure is unidimensional and explained 59% of the total variance with Cronbach’s alpha of 0.76. The principal components analysis of the “uncertainty” measure indicated that this scale is unidimensional and accounted for 57% of the variance with a Cronbach’s alpha of 0.81. The results are presented in Table 10.

TABLE 10
RESULTS OF PRINCIPAL COMPONENT FACTOR ANALYSIS
MEASURE – FORMAL CONTROL

Item				Factor Loadings
1. We very often consult with legal experts to sort out the problems in the alliance.				0.632
2. We strictly follow the written contracts to coordinate this alliance.				0.856
3. We very often rely on legal means to ensure that partner firm meets its obligations.				0.783
4. Rules have been strictly enforced in the alliance.				0.798
Eigen value	2.382	Cronbach's alpha		0.76
% of variance	59.54			

MEASURE – UNCERTAINTY

Item				Factor Loadings
1. Our firm very often has to change its marketing practices to keep up with competition.				0.832
2. The rate of product / service obsolescence in the industry is very high.				0.746
3. Actions of the competitors are easy to predict.				0.791
4. Demand and consumer preferences are almost unpredictable.				0.800
5. Production / service technologies in the industry are not subject to change.				0.680
Eigen value	2.894	Cronbach'a alpha		0.81
% of variance	57.8			

Summary

The preceding assessment of key constructs through factor analysis and Cronbach's alpha provides strong support for the dimensionality and reliability of the measures used in the study. The reliability of all measures was consistent with Nunnally's (1978) criterion of coefficient of alpha of 0.7. This reinforced the researcher's confidence in using these measures for further analyses.

Test of Hypotheses

As an initial assessment of the associations among the research constructs, a correlation analysis was conducted. Since this analysis revealed a strong correlation between the independent variables, an assessment was carried out to examine potential multicollinearity problems. Formal tests of the research hypotheses involved regression analyses. Several multiple regression models were established for examining the linkages between relational social exchanges and the measures of alliance performance, and stability. To test the moderation effects, interaction terms in addition to the independent variables were introduced into separate regression models for each of the dependent variable. The models also included several control variables to account and control for the confounding effects of alternative factors that may influence the dependent variables of this study.

Correlation Analysis

Correlation analysis was conducted to examine the relationships among the predictor, and criterion variables in this study. Results of the analysis were presented in the Table 11. Most of the correlations between independent variables and dependent variables are significantly correlated ($p < .01$). Among the relational social exchange variables, trustworthiness measures – ability based trust and integrity based trust – had a relatively high correlation with the dependent variables. The “power equality” variable had less, but significant association with dependent variables.

TABLE 11

PEARSON CORRELATIONS AMONG PREDICTOR AND CRITERION VARIABLES

Measure	Means	S.D	1	2	3	4	5	6	7
1.Reciprocity	4.43	1.11							
2.Ability –Trust	4.66	1.37	.67***						
3.Benevolence – Trust	3.81	1.24	.61***	.68***					
4.Integrity – Trust	4.38	1.02	.72***	.63***	.69***				
5.Power Equality	4.75	1.13	.065	.16*	.11	.15*			
6.Interfirm Learning	4.22	1.14	.60***	.64***	.56**	.55***	.21**		
7.Alliance Effectiveness	4.65	1.21	.61***	.61***	.51***	.63***	.37***	.70***	
8.Propensity to Stay	4.55	1.30	.58***	.60***	.53***	.62***	.42***	.64***	.76***

(All items are seven point scales 1 to 7)

*** p < .01

** p < .05

* p < .10

Checking for Multicollinearity

A key assumption of regression analysis is that of independence of the predictor variables. Due to the relatively strong correlation between predictor variables especially between trustworthiness measures and reciprocity, an assessment of multicollinearity was carried out through the computation of (1) tolerance value, and (2) its inverse – variance inflation factor (VIF) for the predictor variables. Hair et al. (1992, p.48) identify the commonly accepted cutoff thresholds as a tolerance level of .10 and VIF of 10. That is, tolerance level below .10 and VIF level above 10 indicate multi-collinearity. The tolerance levels for all the predictor variables were well above the .10 cutoff. The VIFs for reciprocity, ability based trust, benevolence-trust, integrity-trust, and power equality were 2.61, 2.39, 2.40, 2.85, and 1.07 respectively, which were much below the cutoff. These results indicated that multicollinearity is not a problem.

Hypothesis Testing: Relational Social Exchanges and Interfirm Learning

Hypothesis 1: It was proposed that social exchanges (reciprocity, ability-trust, benevolence-trust, integrity-trust, and power equality) are positively related to Interfirm learning. Sub-hypotheses stated in the previous chapter are:

- H1a: Reciprocity is positively related to Interfirm Learning.
- H1b: Ability based trust is positively related to Interfirm Learning.
- H1c: Benevolence based trust is positively related to Interfirm Learning.
- H1d: Integrity based trust is positively related to Interfirm Learning.
- H1e: Power Equality is positively related to Interfirm Learning.

The results of the regression analysis are summarized in Table 12. In addition to hypothesized variables, several control variables were introduced in the model to account for alternative explanations. Firm size (no. of employees), International alliance (international =1 and Domestic=2), Alliance Type (Non-Equity=1; Minority Equity=2; Joint venture=3), Industry (dummy variable), alliance importance to partners, past experience with partner, the total number of alliances engaged by respondent, and the extent of formal controls. The regression model is significant (with $F = 12.54$, $p < .001$) and explains 54% of the variance in Interfirm learning ($\text{Adj. } R^2 = .54$).

As hypothesized, relational social exchanges reciprocity, ability based trust, and power equality between partners positively predict the extent of interfirm learning in the alliance (respective standardized beta coefficients $b = .271$, $p < .01$; $b=.215$; $p < .05$; $b = .158$, $p < .05$). However, benevolence based trust, and integrity based trust did not significantly predict the interfirm learning (respective beta coefficients, $b=.086$, $p > .10$; $b=.069$, $p > .10$). Hypotheses H1a, H1b, and H1e are supported. Hypotheses H1c and H1d are not supported.

TABLE 12

REGRESSION ANALYSIS OF SOCIAL EXCHANGES WITH
INTERFIRM LEARNING

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	-.010	-.140	.889
International Alliance	.026	.384	.702
Alliance – Type	.076	1.128	.262
Firm – Industry	-.058	-.845	.400
Alliance importance	.167	2.604	.010
Past Experience with partner	.268	3.794	.000
Total number of alliances	-.037	-.508	.613
Formal Controls	-.106	-1.535	.128
Reciprocity	.271	2.710	.008
Ability-Trust	.215	2.130	.035
Benevolence-Trust	.086	.856	.394
Integrity-Trust	.069	.676	.500
Power Equality	.158	2.380	.019
R ²	.58	F	12.54
Adjusted R ²	.54	Prob. F	.0001

Hypothesis 2: It was proposed that relational social exchanges (reciprocity, ability-trust, benevolence-trust, integrity-trust, and power equality) are positively related to Alliance effectiveness. Sub-hypotheses stated in the previous chapter are:

- H2a: Reciprocity is positively related to Alliance effectiveness.
- H2b: Ability based trust is positively related to Alliance effectiveness.
- H2c: Benevolence based trust is positively related to Alliance effectiveness.
- H2d: Integrity based trust is positively related to Alliance effectiveness.
- H2e: Power Equality is positively related to Alliance effectiveness.

Results of the regression model are presented in Table 13. The model is significant (with $F = 12.94$, $p < .0001$) and explained 55% of the variance. As hypothesized, reciprocity, ability-trust, integrity-trust, and power equality between partners are positively related to alliance effectiveness. The benevolence based trust did

not significantly relate to alliance effectiveness. Except H2c, all other hypotheses H2a, H2b, H2d, and H2e are supported.

TABLE 13
REGRESSION ANALYSIS OF SOCIAL EXCHANGES WITH
ALLIANCE EFFECTIVENESS

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	-.083	1.158	.249
International Alliance	.063	.949	.345
Alliance – Type	.043	.634	.527
Firm – Industry	-.006	-.082	.935
Alliance importance	.126	1.982	.050
Past Experience with partner	.001	.006	.995
Total number of alliances	-.057	-.802	.424
Formal Controls	-.018	.264	.792
Reciprocity	.197	1.986	.049
Ability-Trust	.257	2.574	.011
Benevolence-Trust	-.004	-.045	.964
Integrity-Trust	.292	2.873	.005
Power Equality	.255	3.876	.000
R ²	.60	F	12.94
Adjusted R ²	.55	Prob. F	.0001

Hypothesis 3: It was hypothesized that relational social exchanges (reciprocity, ability-trust, benevolence-trust, integrity-trust, and power equality) are positively related to a firm’s willingness or propensity to stay in the alliance. Sub-hypotheses stated are:

- H3a: Reciprocity is positively related to propensity to stay in the alliance.
- H3b: Ability based trust is positively related to propensity to stay in the alliance.
- H3c: Benevolence based trust is positively related to propensity to stay in the alliance.
- H3d: Integrity based trust is positively related to propensity to stay in the alliance.
- H3e: Power Equality is positively related to propensity to stay in the alliance.

The results of the regression analysis are reported in Table 14. The model is significant (with $F = 15.41$, $p < .0001$) and explained 59% of the variance. As hypothesized, reciprocity, ability-trust, integrity-trust, and power equality between

partners are positively related to partner's propensity to continue in the alliance. This confirms the hypotheses that social exchanges between partners stabilize the alliance relationship. However, the benevolence based trust did not significantly relate to propensity to continue. Except H3c, all other hypotheses H3a, H3b, H3d, and H3e are supported.

TABLE 14
REGRESSION ANALYSIS OF SOCIAL EXCHANGES WITH
PROPENSITY TO STAY IN ALLIANCE

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	.012	-.174	.862
International Alliance	.110	1.749	.083
Alliance – Type	.023	.355	.724
Firm – Industry	-.074	1.138	.258
Alliance importance	.063	1.041	.300
Past Experience with partner	.169	2.558	.012
Total number of alliances	-.011	-.156	.876
Formal Controls	-.025	-.382	.703
Reciprocity	.224	2.390	.019
Ability-Trust	.164	1.736	.085
Benevolence-Trust	-.007	-.077	.939
Integrity-Trust	.289	3.000	.003
Power Equality	.312	4.999	.001
R ²	.64	F	15.41
Adjusted R ²	.59	Prob. F	.0001

The above tests are conducted to examine the relationships between key independent variables and dependent variables. The tests revealed that the theoretical relationships between social exchanges and alliance performance and stability are supported by the data.

Hypothesis Testing: Moderating Effects

Hypotheses 4 through 12 seeks to examine the moderating effects of interfirm environments such as uncertainty, international dimension, and the extent of rivalry between partners on the relationships between social exchanges and alliance performance, and stability measures. The 'international dimension' was coded with a dummy variable '1'. The extent of competitive rivalry between partners is measured with two items on a seven point scale, and the uncertainty was measured with five items on a seven point scale. The moderators in this study are treated as "quasi moderators", since they may well interact with the predictor variables while also being directly related to the criterion variables (Hair et al. 1998). These moderator variables are hypothesized to negatively influence the relationships between social exchanges and alliance performance, and stability measures. The models for testing interaction effects take the general form:

$$Y=B_0+ B_1X_1+ B_2X_2+B_3(\text{moderator})+B_4X_1(\text{moderator})+ B_5X_2(\text{moderator})$$

A number of statistical results are examined within each regression model to test the moderator effects. For the moderator analysis, 17-item trustworthiness measure was combined into one single item, instead of three different measures. This was done to reduce the complexity of moderation analysis. However, the researcher examined whether the different trustworthiness dimensions exhibited any differential moderation effects. Since there was no difference, the researcher decided to test the moderation effects with a single trustworthiness measure. To determine whether moderator effect is significant, the researcher first estimated the original unmoderated equation model for each of the dependent variable and then estimated the moderated relationship. If the change in R^2 is statistically significant, then a significant moderator effect is present.

This was conducted with change in F statistics. In addition, to test the sub-hypotheses of the individual moderator effect on each of the relationship, the significance of the beta coefficients for each moderator and the interaction terms in the equation are assessed.

Moderating Effect of Uncertainty

Hypothesis 4: It is proposed that environmental uncertainty influences the relationship between social exchanges and the extent of interfirm learning.

H4a: The relationships between reciprocity and interfirm learning will be weaker in uncertain environment.

H4b: The relationships between interfirm trust and interfirm learning will be weaker in uncertain environment.

H4c: The relationships between power equality and interfirm learning will be weaker in uncertain environment.

The results of the moderated regression analysis are presented in Table 15. The overall model is significant with an Adjusted R^2 of .59. The change in R^2 (.051) is also statistically significant (change in $F=5.302, 3, 112$) at $p<.01$. These results suggest that introduction of uncertainty interactions increased the explanatory value to a small extent. The beta coefficient of 1.002 for uncertainty is statistically significant at .10 level. Thus, uncertainty appears to have a positive influence on the extent of interfirm learning. However, only two of the three interaction terms were significant. The beta coefficient for uncertainty*reciprocity is 1.241 significant at $p<.10$, indicating a positive effect that is counter to H4a. While the beta coefficient for uncertainty*trustworthiness (H4b) is not significant, the coefficient for uncertainty*power equality is -1.778 statistically significant at $p<.001$ supporting hypothesis H4c.

The significant moderating effect of uncertainty is plotted with Figure 4 and Figure 5. Figure 4 narrates how uncertainty moderates (monotonically) the relationship between learning and reciprocity monotonically. Figure 5 narrates how uncertainty negatively moderates (monotonically) the relationship between interfirm learning and power equality. An explanation of the contradictory result of H4a may lie in the difference between tangible current reciprocal commitments and other form of intangibles between firms in the alliance such as partner's trustworthiness and power-equality on the interfirm learning. To conclude, only H4c is supported and indicating a partial support for the moderator effect of uncertainty.

TABLE 15

MODERATED REGRESSION ANALYSIS OF SOCIAL EXCHANGES AND
UNCERTAINTY WITH INTERFIRM LEARNING

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	.016	.237	.813
Alliance – Type	.087	1.369	.174
Firm – Industry	-.152	-2.186	.031
Alliance importance	.114	1.779	.078
Past Experience with partner	.317	4.663	.000
Total number of alliances	-.094	-1.296	.198
Formal Controls	-.177	-2.596	.011
Reciprocity	-.652	-1.390	.167
Trustworthiness	.950	1.804	.074
Power Equality	1.358	3.734	.000
International Dimension	-.060	-.878	.382
Uncertainty	1.002	1.947	.054
Uncertainty*Reciprocity	1.241	1.927	.057
Uncertainty*Trustworthiness	-.903	-1.212	.228
Uncertainty*Power Equality	-1.78	-3.312	.001
R ²	.64	F	13.19
Adjusted R ²	.59	Prob. F	.0001

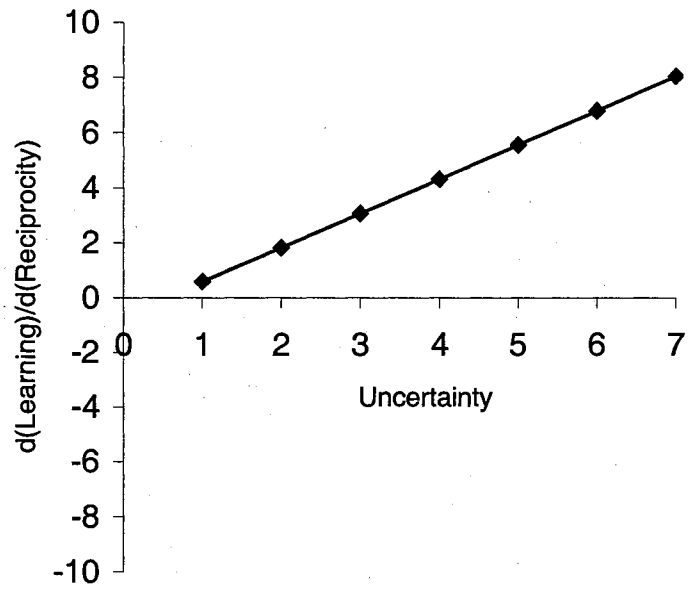


FIGURE 4: Moderating Effect of Uncertainty on the relationship between Interfirm Learning and Reciprocity

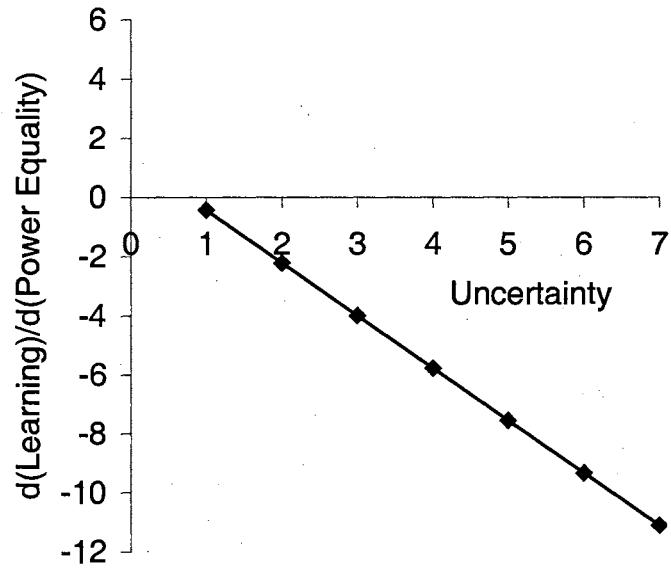


FIGURE 5: Moderating Effect of Uncertainty on the relationship between Interfirm Learning and Power Equality

Hypothesis 5: It is proposed that environmental uncertainty influences the relationship between social exchanges and the alliance effectiveness.

H5a: The relationships between reciprocity and alliance effectiveness will be weaker in uncertain environment.

H5b: The relationships between trustworthiness and alliance effectiveness will be weaker in uncertain environment.

H5c: The relationships between power equality and alliance effectiveness will be weaker in uncertain environment.

The results of the moderated regression analysis are presented in Table 16. The overall model is significant with an Adjusted R^2 of .58. The increase in R^2 (.050) is also statistically significant (change in $F=5.174, 3, 112$) at $p<.01$. These results suggest that introduction of uncertainty interactions increased the explanatory value of the model explaining effectiveness. The beta coefficient of .858 for uncertainty is statistically significant at .10 level. Thus, uncertainty in the respondent's industry environment appears to have a positive association with the perceived effectiveness of the alliance. However, only one of the three interaction terms was significant. The beta coefficients for uncertainty*reciprocity and uncertainty*trustworthiness are not significant. The beta coefficient for uncertainty*power equality is -1.786 , which is significant at .001 level. Thus only hypothesis H5c is supported and Hypotheses H5a and H5b are not supported. Figure 6 narrates the moderating effect of uncertainty on the relationship between alliance effectiveness and power equality. The uncertainty is monotonically moderating the relationship. To conclude, only H5c is supported and indicating a partial support for the moderator effect of uncertainty on the relationship between social exchange and effectiveness.

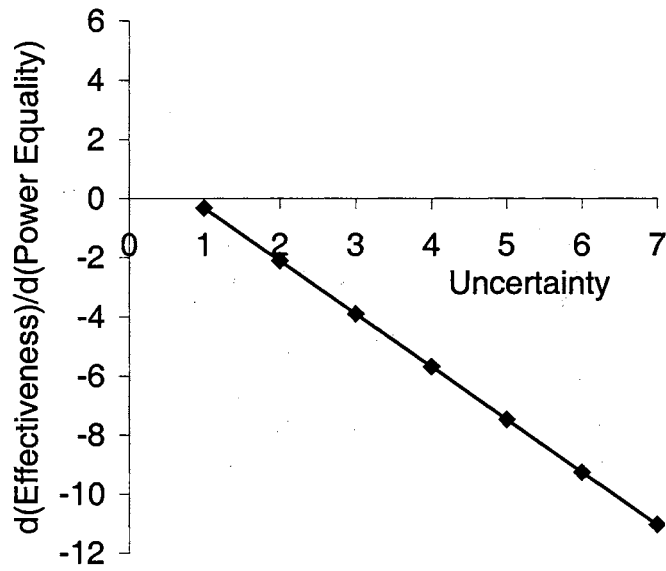


FIGURE 6: Moderating Effect of Uncertainty on the relationship between Alliance Effectiveness and Power Equality

TABLE 16

MODERATED REGRESSION ANALYSIS OF SOCIAL EXCHANGES AND
UNCERTAINTY WITH ALLIANCE EFFECTIVENESS

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	.112	1.605	.111
Alliance – Type	.055	.868	.387
Firm – Industry	-.119	-1.705	.091
Alliance importance	.069	1.072	.286
Past Experience with partner	.022	.325	.746
Total number of alliances	-.076	-1.039	.301
Formal Controls	-.039	-.569	.571
Reciprocity	-.117	-.248	.804
Trustworthiness	.398	.753	.453
Power Equality	1.470	4.028	.000
International Dimension	-.024	-.346	.730
Uncertainty	.858	1.661	.099
Uncertainty*Reciprocity	.444	.687	.494
Uncertainty*Trustworthiness	-.077	.104	.918
Uncertainty*Power Equality	-1.786	-3.314	.001
R ²	.63	F	13.05
Adjusted R ²	.58	Prob. F	.0001

Hypothesis 6: It is proposed that environmental uncertainty influences the relationship between social exchanges and the propensity to stay in the alliance.

H6a: The relationships between reciprocity and propensity to stay will be weaker in uncertain environment.

H6b: The relationships between trustworthiness and propensity to stay will be weaker in uncertain environment.

H6c: The relationships between power equality and propensity to stay will be weaker in uncertain environment.

The results of the moderated regression analysis are presented in Table 17. The overall model is significant with an Adjusted R² of .61. The increase in R² (.028) is also statistically significant (change in F=3.023, 3, 112) at p<.05. These results suggest that

introduction of uncertainty interactions increased the explanatory value of the model predicting a partner's propensity to stay in the alliance. The beta coefficient for uncertainty (-.082) is statistically not significant ($p > .10$). Thus, uncertainty in the respondent's industry environment does not appear to have an influence on the propensity to stay in the alliance.

Only one of the three interaction terms was significant. The beta coefficients for uncertainty*reciprocity and uncertainty*trustworthiness are not significant. The beta coefficient for uncertainty*power equality is $-.865$, which is significant at .10 level. Thus only hypothesis H6c is supported and Hypotheses H6a and H6b are not supported.

Figure 7 narrates how uncertainty negatively moderates (monotonic) the relationship between propensity to stay and power equality in the relationship. To conclude, only H6c is supported and indicating a partial support for the moderator effect of uncertainty on the relationship between social exchange and effectiveness.

TABLE 17
 MODERATED REGRESSION ANALYSIS OF SOCIAL EXCHANGES AND
 UNCERTAINTY WITH PROPENSITY TO STAY

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	.053	.783	.435
Alliance – Type	-.001	-.024	.981
Firm – Industry	.008	.111	.911
Alliance importance	.051	.819	.414
Past Experience with partner	.158	2.381	.019
Total number of alliances	-.014	-.198	.843
Formal Controls	-.008	-.115	.908
Reciprocity	.088	.192	.848
Trustworthiness	-.045	-.089	.929
Power Equality	.927	2.623	.010
International Dimension	.059	.894	.373
Uncertainty	-.082	-.164	.870
Uncertainty*Reciprocity	.251	.401	.689
Uncertainty*Trustworthiness	.613	.846	.399
Uncertainty*Power Equality	-.865	-1.657	.100
R ²	.66	F	14.41
Adjusted R ²	.61	Prob. F	.0001

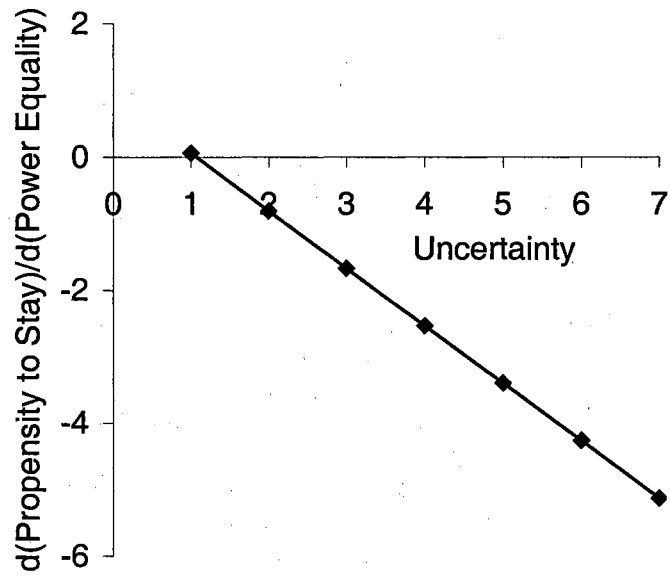


FIGURE 7: Moderating Effect of Uncertainty on the relationship between Propensity to Stay and Power Equality

Moderating Effects of International Dimension

Hypothesis 7: It is proposed that international dimension influences the relationship between social exchanges and the extent of interfirm learning. The sub-hypotheses stated are:

H7a: The relationships between reciprocity and interfirm learning will be weaker in international alliances.

H7b: The relationships between trustworthiness and interfirm learning will be weaker in international alliances.

H7c: The relationships between power equality and interfirm learning will be weaker in international alliances.

The results of the moderated regression analysis are presented in Table 18. The overall model is significant with an Adjusted R^2 of .54. The increase in R^2 (.004) is not statistically significant (change in $F = .374, 3, 113$) at $p > .10$. These results suggest that introduction of international dimension interactions did not significantly increase the explanatory value of the model predicting interfirm learning. The beta coefficient of .384 for international dimension is not statistically significant ($p > .10$). Thus, international dimension does not appear to have any association with the extent of interfirm learning. Similarly, none of the interactions between international dimension and social exchanges were significant. The beta coefficients of international*reciprocity, international*trustworthiness, and international*power equality were not significant ($p > .10$). Thus, Hypotheses H7a, H7b, and H7c are not supported.

TABLE 18

MODERATED REGRESSION ANALYSIS OF SOCIAL EXCHANGES AND
INTERNATIONAL DIMENSION WITH INTERFIRM LEARNING

Variables	Standardized Beta Coefficient	t-value	p-value
Firm-size(Employees)	-.015	-.210	.834
Alliance – Type	.090	1.358	.177
Firm – Industry	-.063	-.907	.366
Alliance importance	.162	2.482	.015
Past Experience with partner	.252	3.436	.001
Total number of alliances	-.023	-.308	.759
Formal Controls	-.087	-1.176	.242
Reciprocity	.240	2.168	.032
Trustworthiness	.347	2.873	.005
Power Equality	.195	2.473	.015
International Dimension	.384	.794	.429
International*Reciprocity	.202	.424	.672
International*Trustworthiness	-.204	-.415	.679
International*Power Equality	-.360	-.966	.336
R ²	.59	F	11.63
Adjusted R ²	.54	Prob. F	.0001

Hypothesis 8: It is proposed that international dimension influences the relationship between social exchanges and the alliance effectiveness.

The sub-hypotheses stated are:

H8a: The relationships between reciprocity and alliance effectiveness will be weaker in international alliances.

H8b: The relationships between trustworthiness and alliance effectiveness will be weaker in international alliances.

H8c: The relationships between power equality and alliance effectiveness will be weaker in international alliances.

The results of the moderated regression analysis are presented in Table 19. The overall model ($F = 12.93$, $p < .001$) is significant with an Adjusted R^2 of .57. The increase

in R^2 (.031) is statistically significant (change in $F = 3.047, 3, 113$) at $p < .05$. These results suggest that introduction of international dimension interactions significantly increased the explanatory value of the model predicting alliance effectiveness. The beta coefficient of 1.279 for international dimension is statistically significant ($p < .01$). Thus, international dimension appears to be related to alliance effectiveness. However, only one of the three interaction terms, international*trustworthiness is significant (with beta = $-.810, p < .10$). This result supports the hypothesis that the efficacy of trust on alliance effectiveness is weaker in international alliances. Other two interactions international*reciprocity, and international*power equality are not significant. Thus, only hypothesis H8b is supported, and hypotheses H8a and H8c are not supported. Overall, there is a partial support for the moderation effect of international dimension on alliance effectiveness. Figure 8 narrates that the relationship between alliance effectiveness and trustworthiness is weaker in international alliances than in domestic alliances.

TABLE 19

MODERATED REGRESSION ANALYSIS OF SOCIAL EXCHANGES AND
INTERNATIONAL DIMENSION WITH ALLIANCE EFFECTIVENESS

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	.087	1.233	.220
Alliance – Type	.035	.540	.590
Firm – Industry	-.003	-.042	.967
Alliance importance	.139	2.202	.030
Past Experience with partner	-.041	-.573	.568
Total number of alliances	.010	.141	.888
Formal Controls	.032	.445	.657
Reciprocity	.245	2.282	.024
Trustworthiness	.565	4.837	.000
Power Equality	.253	3.298	.001
International Dimension	1.279	2.732	.007
International*Reciprocity	.026	.056	.956
International* Trustworthiness	-.810	-1.703	.091
International*Power Equality	-.476	-1.318	.190
R ²	.61	F	12.93
Adjusted R ²	.57	Prob. F	.001

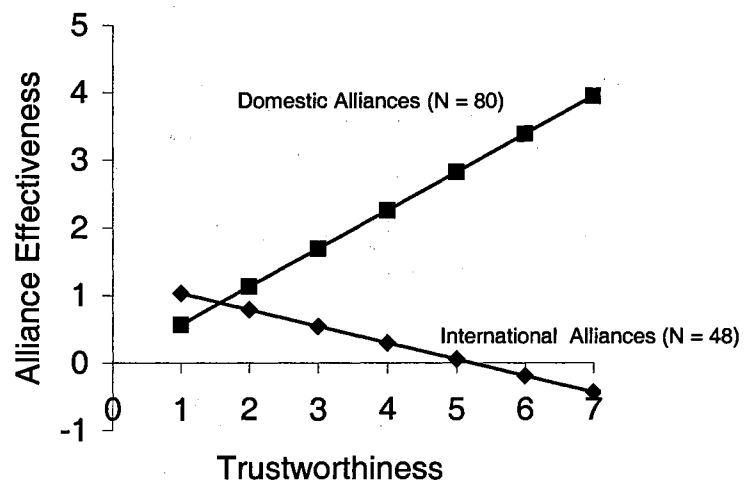


FIGURE 8: Moderating effect of International dimension on the relationship between Alliance Effectiveness and Trustworthiness

Hypothesis 9: It is proposed that international dimension influences the relationship between social exchanges and the propensity to stay. The sub-hypotheses stated are:

H9a: The relationships between reciprocity and propensity to stay will be weaker in international alliances.

H9b: The relationships between trustworthiness and propensity to stay will be weaker in international alliances.

H9c: The relationships between power equality and propensity to stay will be weaker in international alliances.

The results of the moderated regression analysis are presented in Table 20. The overall model ($F = 16.50$, $p < .001$) is significant with an Adjusted R^2 of .63. The increase in R^2 (.046) is statistically significant (change in $F = 5.235$, 3, 113) at $p < .01$. These results suggest that introduction of international dimension interactions significantly increased the explanatory value of the model predicting propensity to stay. The beta coefficient of 1.694 for international dimension is statistically significant ($p < .001$). Thus, international dimension appears to be related to propensity to stay. Moderated regression results indicated that two of the three interaction terms, international*trustworthiness (with $b = -.851$, $p < .10$), and international*power equality (with $b = -.749$, $P < .05$) are significant.

Thus, results support the hypotheses that influence of trust, and power equality between firms on propensity to stay in the alliance is weaker in international alliances. Other interactions international*reciprocity international*power equality is not significant ($b = -.043$, $p > .10$). To conclude, the Hypotheses H9b and H9c are supported, and H9a is not supported. Overall, there is a partial support for the moderation effect of international dimension on the relationship between social exchange and propensity to stay. Figure 9

narrates the moderating effect of International dimension on the relationship between propensity to stay and trustworthiness, and Figure 10 narrates the moderating effect of international dimension on the relationship between propensity to stay and power equality.

TABLE 20
 MODERATED REGRESSION ANALYSIS OF SOCIAL EXCHANGES AND
 INTERNATIONAL DIMENSION WITH PROPENSITY TO STAY

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	.022	.340	.734
Alliance – Type	-.002	-.031	.975
Firm – Industry	.080	1.281	.203
Alliance importance	.081	1.382	.170
Past Experience with partner	.109	1.656	.100
Total number of alliances	.068	1.003	.318
Formal Controls	.057	.859	.392
Reciprocity	.280	2.820	.006
Trustworthiness	.487	4.510	.000
Power Equality	.327	4.616	.000
International Dimension	1.694	3.914	.000
International*Reciprocity	-.043	-.100	.921
International* Trustworthiness	-.851	-1.936	.055
International*Power Equality	-.749	-2.244	.027
R ²	.67	F	16.50
Adjusted R ²	.63	Prob. F	.001

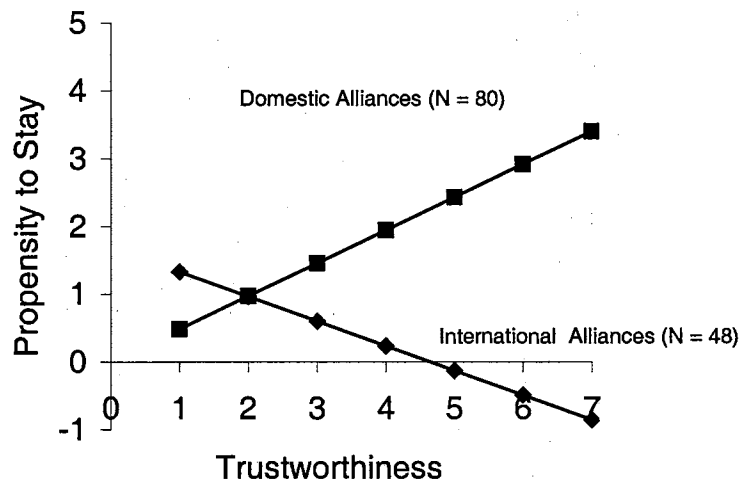


FIGURE 9: Moderating Effect of International dimension on the relationship between Propensity to Stay and Trustworthiness

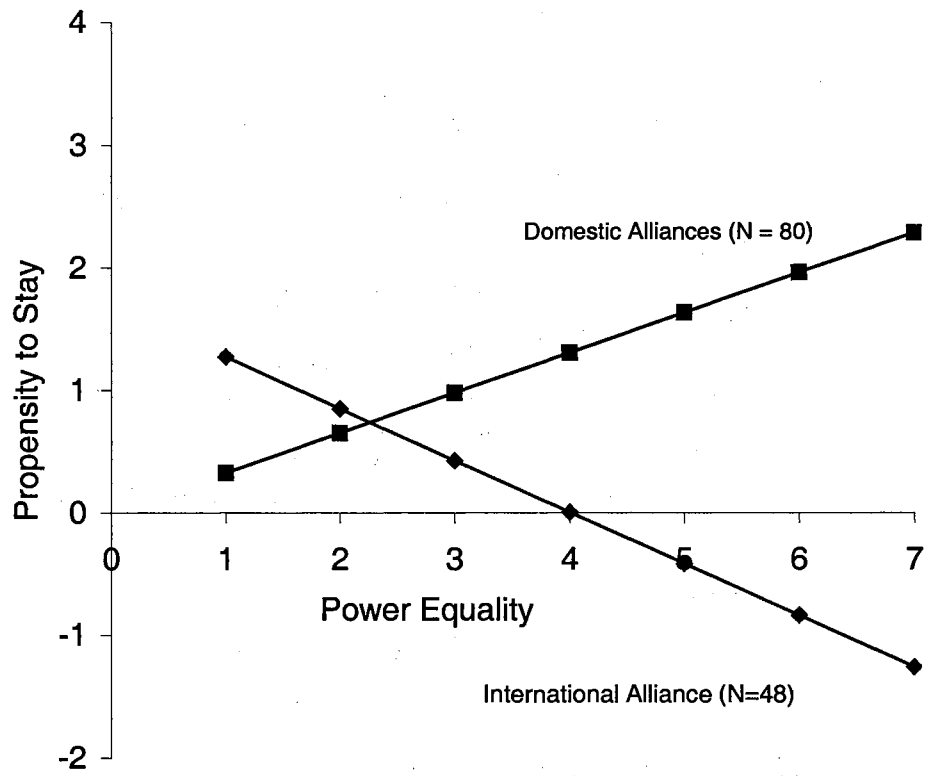


FIGURE 10: Moderating effect of International dimension on the relationship between Propensity to Stay and Power Equality

Hypothesis 10: It is proposed that competitive rivalry between partners influences the relationship between social exchanges and the interfirm learning. The sub-hypotheses stated are:

H10a: The relationships between reciprocity and interfirm learning will be weaker if the competitive rivalry is high.

H10b: The relationships between trustworthiness and interfirm learning will be weaker if the competitive rivalry is high.

H10c: The relationships between power equality and interfirm learning will be weaker if the competitive rivalry is high.

The results of the moderated regression analysis are presented in Table 21. The overall model ($F = 14.11$, $p < .001$) is significant with an Adjusted R^2 of .61. The increase in R^2 (.068) is statistically significant (change in $F = 7.29$, 3, 112) at $p < .001$. These results suggest that introduction of rivalry dimension interactions significantly increased the explanatory value of the model predicting interfirm learning. The beta coefficient of -1.877 for rivalry variable is statistically significant ($p < .001$). Thus, rivalry between partners appears to be negatively related to interfirm learning in the alliance. Moderated regression results indicated that only one of the three interaction terms, rivalry*trustworthiness (with $b = 1.485$, $p < .01$) is significant. This runs counter to the hypothesis H10b. A possible explanation could be that, in high trusting relationships, rivalry did not reduce the extent of learning; instead partners learned more from their competing partners through the alliance. Figure 11 narrates the moderating effect of rivalry on the relationship between interfirm learning and trustworthiness. Other two hypotheses, H10a (rivalry*reciprocity) and H10c (rivalry*power equality) were not supported.

TABLE 21

MODERATED REGRESSION ANALYSIS OF SOCIAL EXCHANGES AND
RIVALRY WITH INTERFIRM LEARNING

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	-.029	-.428	.670
Alliance – Type	.088	1.451	.150
Firm – Industry	-.050	-.781	.437
Alliance importance	.197	2.960	.004
Past Experience with partner	.205	3.011	.003
Total number of alliances	-.074	-1.093	.277
Formal Controls	-.087	-1.268	.207
Reciprocity	.255	.726	.469
Trustworthiness	-.874	-2.018	.046
Power Equality	-.139	-.427	.670
International Dimension	.086	1.349	.180
Rivalry between partners	-1.877	-3.846	.000
Rivalry*Reciprocity	-.026	-.060	.952
Rivalry*Trustworthiness	1.485	2.944	.004
Rivalry*Power Equality	.399	.814	.417
R ²	.65	F	14.11
Adjusted R ²	.61	Prob. F	.001

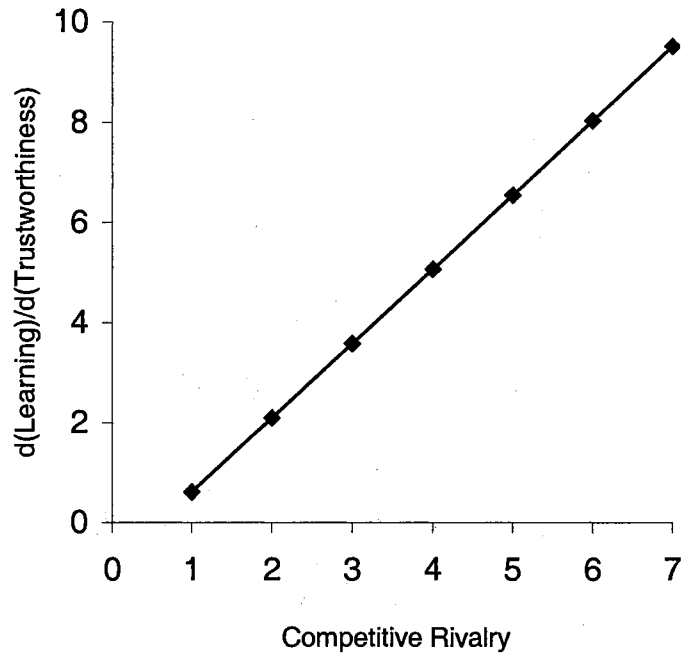


FIGURE 11: Moderating effect of Rivalry on the relationship between Interfirm Learning and Trustworthiness

Hypothesis 11: It is proposed that competitive rivalry between partners influences the relationship between social exchanges and the alliance effectiveness. The sub-hypotheses stated are:

H11a: The relationships between reciprocity and alliance effectiveness will be weaker if the competitive rivalry is high.

H11b: The relationships between trustworthiness and alliance Effectiveness will be weaker if the competitive rivalry is high.

H11c: The relationships between power equality and alliance effectiveness will be weaker if the competitive rivalry is high.

The results of the moderated regression analysis are presented in Table 22. The overall model ($F = 15.54$, $p < .001$) is significant with an Adjusted R^2 of .63. The increase in R^2 (.090) is statistically significant (change in $F = 10.35$, 3, 112) at $p < .001$. These results suggest that introduction of rivalry dimension interactions significantly increased the explanatory value of the model predicting alliance effectiveness. The beta coefficient of -1.543 for rivalry variable is statistically significant ($p < .001$). Thus, rivalry between partners appears to be negatively related to alliance effectiveness. Moderated regression results indicated that only one of the three interaction terms, rivalry*trustworthiness (with $b = 3.103$, $p < .01$) is significant. This runs counter to the hypothesis H11b. Figure 12 narrates the moderating effect of rivalry (monotonic) on the relationship between effectiveness and trustworthiness. A possible explanation could be that, in high trusting relationships, rivalry did not reduce the learning; instead partners learned more from their competing partners through alliance. Other two hypotheses, H11a (rivalry*reciprocity) and H11c (rivalry*power equality) were not supported.

TABLE 22

MODERATED REGRESSION ANALYSIS OF SOCIAL EXCHANGES AND
RIVALRY WITH ALLIANCE EFFECTIVENESS

Variables	Standardized Beta	t-value	p-value
Firm-size(Employees)	.060	.931	.354
Alliance – Type	.058	.995	.322
Firm – Industry	-.021	-.344	.731
Alliance importance	.119	1.843	.068
Past Experience with partner	-.114	-1.729	.087
Total number of alliances	-.083	-1.276	.205
Formal Controls	.014	.211	.834
Reciprocity	.020	.059	.953
Trustworthiness	-.756	-1.804	.074
Power Equality	.454	1.441	.152
International Dimension	.147	2.379	.019
Rivalry between partners	-1.543	-3.265	.001
Rivalry*Reciprocity	.249	.599	.551
Rivalry*Trustworthiness	1.515	3.103	.002
Rivalry*Power Equality	-.370	-.780	.437
R ²	.67	F	15.54
Adjusted R ²	.63	Prob. F	.001

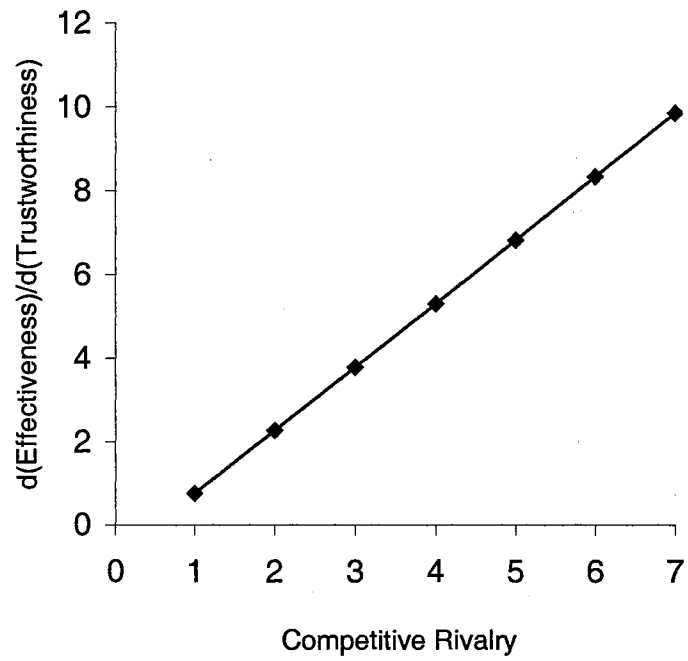


FIGURE 12: Moderating effect of Rivalry on the relationship between Alliance Effectiveness and Trustworthiness

Hypothesis 12: It is proposed that competitive rivalry between partners influences the relationship between social exchanges and the propensity to stay. The sub-hypotheses stated are:

H12a: The relationships between reciprocity and propensity to stay will be weaker if the competitive rivalry is high.

H12b: The relationships between trustworthiness and propensity to stay will be weaker if the competitive rivalry is high.

H12c: The relationships between power equality and propensity to stay will be weaker if the competitive rivalry is high.

The results of the moderated regression analysis are presented in Table 23. The overall model ($F = 15.19, p < .001$) is significant with an Adjusted R^2 of .62. The increase in R^2 (.036) is statistically significant (change in $F = 4.026, 3, 112$) at $p < .01$. These results suggest that introduction of rivalry dimension interactions significantly increased the explanatory value of the model predicting the propensity to stay. The beta coefficient of -1.589 for rivalry variable is statistically significant ($p < .001$). Thus, rivalry between partners appears to be negatively related to alliance effectiveness. Moderated regression results indicated that none of the three interaction terms, rivalry*reciprocity ($b = .211, p > .10$), rivalry*trustworthiness (with $b = .793, p > .10$), rivalry*power equality ($b = .544, p > .10$) is significant. Thus, hypotheses, H12a, H12b, and H12c are not supported.

TABLE 23

MODERATED REGRESSION ANALYSIS OF SOCIAL EXCHANGES AND
RIVALRY WITH PROPENSITY TO STAY

Variables	Standardized Beta	t-value	p-value
Firm-size (Employees)	.007	.109	.914
Alliance – Type	.040	.683	.496
Firm – Industry	.064	1.029	.305
Alliance importance	.137	2.111	.037
Past Experience with partner	.128	1.931	.056
Total number of alliances	-.002	-.034	.973
Formal Controls	.079	1.180	.240
Reciprocity	.064	.186	.853
Trustworthiness	-.328	-.776	.440
Power Equality	-.051	-.162	.872
International Dimension	.142	2.283	.024
Rivalry between partners	-1.589	-3.337	.001
Rivalry*Reciprocity	.211	.504	.616
Rivalry*Trustworthiness	.793	1.611	.110
Rivalry*Power Equality	.544	-.780	.437
R ²	.67	F	15.19
Adjusted R ²	.62	Prob. F	.001

Summary

Table 24, and Table 25 provide a summary of the tests of the research hypotheses. Out of the fifteen (15) main effects hypotheses, eleven (11) are supported. Relational social exchanges, as reflected by reciprocity, trustworthiness, and balance of power (power equality) between partners shape the performance and stability of the alliances in substantial ways.

Out of the nine moderated regression models, in eight models the introduction of moderated terms in the equation significantly increases the adjusted R^2 . Out of twenty-seven (27) hypotheses regarding moderating effects of three variables uncertainty, international alliances, and competitive rivalry between partners, the moderated regression analysis reveals support for only six (6) hypotheses. For another three moderation hypotheses, while statistically significant effects were found, the direction of the effects are in opposite of the original hypotheses.

TABLE 24

SUMMARY OF THE TESTS OF HYPOTHESES

Relational Social Exchanges: Main Effects

Hypothesis	Result
H1a: Reciprocity is positively related to Interfirm Learning.	Support***
H1b: Ability based trust is positively related to Interfirm Learning.	Support**
H1c: Benevolence based trust is positively related to Interfirm Learning.	Nil
H1d: Integrity based trust is positively related to Interfirm Learning.	Nil
H1e: Power Equality is positively related to Interfirm Learning.	Support**
H2a: Reciprocity is positively related to Alliance effectiveness.	Support**
H2b: Ability based trust is positively related to Alliance effectiveness.	Support**
H2c: Benevolence based trust is positively related to Alliance effectiveness.	Nil
H2d: Integrity based trust is positively related to Alliance effectiveness.	Support***
H2e: Power Equality is positively related to Alliance effectiveness.	Support***
H3a: Reciprocity is positively related to propensity to stay in the alliance.	Support**
H3b: Ability based trust is positively related to propensity to stay in the alliance.	Support*
H3c: Benevolence based trust is positively related to propensity to stay in the alliance.	Nil
H3d: Integrity based trust is positively related to propensity to stay in the alliance.	Support***
H3e: Power Equality is positively related to propensity to stay in the alliance.	Support***

'Nil' means the beta is statistically insignificant at $p > .10$

* $p < .10$,

** $p < .05$

*** $p < .01$

TABLE 25

SUMMARY OF THE TESTS OF HYPOTHESES

Moderator Effects

Hypothesis	Result
H4a: The relationship between reciprocity and learning is weaker in uncertainty.	Opposite*
H4b: The relationships between trust and learning is weaker in uncertainty.	Nil
H4c: The relationship between power equality and learning is weaker in uncertainty.	Support***
H5a: The relationship between reciprocity and effectiveness is weaker in uncertainty.	Nil
H5b: The relationship between trust and effectiveness is weaker in uncertainty.	Nil
H5c: The relationship between power equality and effectiveness is weaker in uncertainty.	Support***
H6a: The relationship between reciprocity and propensity to stay is weaker in uncertainty.	Nil
H6b: The relationship between trust and propensity to stay is weaker in uncertainty.	Nil
H6c: The relationship between power equality and propensity to stay is weaker in uncertainty.	Support*
H7a: The relationship between reciprocity and learning is weaker in international alliances.	Nil
H7b: The relationship between trust and learning is weaker in international alliances.	Nil
H7c: The relationship between power equality and learning is weaker in international alliances.	Nil
H8a: The relationship between reciprocity and effectiveness is weaker in international alliances.	Nil
H8b: The relationship between trust and effectiveness is weaker in international alliances.	Support*
H8c: The relationship between power equality and effectiveness is weaker in international alliances.	Nil
H9a: The relationship between reciprocity and propensity to stay is weaker in international alliances.	Nil
H9b: The relationship between trust and propensity to stay is weaker in international alliances.	Support**
H9c: The relationship between power equality and propensity to stay is weaker in international alliances.	Support**
H10a: The relationship between reciprocity and learning is weaker if the rivalry is high.	Nil
H10b: The relationship between trust and learning is weaker if the rivalry is high.	Opposite***
H10c: The relationship between power equality and learning is weaker if the rivalry is high.	Nil
H11a: The relationship between reciprocity and effectiveness is weaker if the rivalry is high.	Nil
H11b: The relationship between trust and effectiveness is weaker if the rivalry is high.	Opposite***
H11c: The relationship between power equality and effectiveness is weaker if the rivalry is high.	Nil
H12a: The relationship between reciprocity and propensity to stay is weaker if the rivalry is high.	Nil
H12b: The relationship between trust and propensity to stay is weaker if the rivalry is high.	Nil
H12c: The relationship between power equality and propensity to stay is weaker if the rivalry is high.	Nil

'Nil' means the beta is statistically insignificant at $p > .10$

'Opposite' indicates a significant effect counter to the hypothesis.

* $p < .10$,

** $p < .05$

*** $p < .01$

CHAPTER V

DISCUSSION AND IMPLICATIONS

The previous chapter presented the results of the research study and focused primarily on the various statistical analyses performed and the outcome of these efforts. In this chapter, special attention has been given to implications of the research findings, limitations of the research, and recommendations for future research. First, the fundamental research questions are reviewed. Then, the results of the study are interpreted and their implications discussed. And then, major theoretical and empirical contributions are reviewed. Finally, the research project is evaluated in terms of its limitations, and recommendations for future research are addressed.

Theory Related Issues

Despite the fact that alliances have become a major strategic option, the high failure rate of alliances continues to evoke pessimism among business analysts. The pessimism is largely due to sheer complexity of alliances and the difficulty of coordinating resources and across independent and often competing firms' boundaries. Since interfirm cooperation has become a strategic route for the pursuit of individual competitive advantage, managers and researchers are beginning to focus their efforts to understand the art and science of interfirm interaction, exchange and coordination

processes. Although the significance of managerial interaction and coordination processes have been emphasized in the extant literature, very few empirical studies have been conducted to examine these issues. The causes of the failures among alliances, and the factors that enhance the stability and performance of alliances have primarily been attributed to the structural issues (Pisano, 1989), or initial conditions (Burgers, Hill & Kim, 1993; Hagedoorn & Schakaenraad, 1994).

Recently, several researchers are emphasizing the need for study of interfirm interaction and coordination processes and their role in enhancing the performance and stability of cooperative alliances and partnerships (Doz, 1996; Ring & Van de Ven, 1994). These issues have tremendous significance for the success of alliances that often involve challenges of interacting with a competing firm and/or a foreign firm. As emphasized by several scholars, the studies on alliance should move beyond firm characteristics and initial conditions to on going interaction and influence processes between partner firms and their managers. While studying the interactions between partners, it is also important to take into account the influence of various interfirm, environmental, and cultural contexts on the relational exchanges, and the performance and stability of alliances (Gray & Wood, 1991; Harrigan, 1988; Khanna, 1998).

To examine the role of collaborative and coordination processes in enhancing the performance and stability of alliances under various interfirm contexts, this study addressed two related research questions: (1) How do the relational social exchanges between partners such as reciprocity, trust, and power sharing influence the performance and stability of alliances in terms of interfirm learning, effectiveness, and partner's propensity to stay in the alliance relationship? and (2) How do the interfirm contexts such

as international cooperation, uncertainty in business environment, and competitive rivalry moderate the linkages between relational social exchanges and performance, and stability of alliances?

Relational Social Exchanges and Alliance Performance, and Stability

Despite their popularity, strategic alliances have a high overall failure rate, as much as 50 percent (Bleeke & Ernst 1995). Most of the failures are due to poor mutual understanding, distrust, and power imbalance among alliance partners (Lorange & Roos 1991). Although the causes for failures can be traced to the attributes such as self-interest, prisoner's dilemma, and power conflicts due to resource dependence and control specified by the some of the well known theoretical rationalizations of the transaction-cost economics, resource dependence, and game theory (Williamson 1985; Pfeffer & Salanick 1978; and Parkhe 1993), there is a lack of specification for why some alliances perform better and how they can be made more stable.

Traditional research on alliances has focused much on the efficacy of the formal control mechanisms for monitoring and managing the conflicts between alliance partners. However, there is recognition recently that formal controls may so much determine the success and stability of an alliance. The excessive concern with control can be counter-productive (Lorange & Roos 1992). Several scholars are emphasizing the significance of social exchange processes such as reciprocity, trust, and power sharing between partners to maximize the mutual benefits and enhance the stability of the alliance (Heide 1994; Macneil 1980; Ring & Van de Ven 1994).

Managers play a vital role in fostering a climate that facilitates reciprocity, trust, and balance of power between partner firms. Although the alliance structure and governance are determined by the competitive strategies of the partners, the tone and tenor of the relationships are established by the boundary spanning alliance managers. Success of an alliance in terms of learning, effectiveness, and long-term commitment to stay in an alliance is largely determined by the characteristics of the relational exchanges between partner firms and their respective managers. No contract or legal document or authority can enhance full cooperation.

This research study examined how the relational processes enhanced the stability and performance of alliances by employing a conceptual theoretical framework based on social exchange theory. Social exchange theory emphasizes three important dimensions of relational exchanges; they include, reciprocity, trust, and balance of power between partners in a relationship. The aim of these relational exchanges is to remove the perception of risk and uncertainty, and enhance the norms of fair exchange (Blau 1964; Homans 1961). The social exchanges act as a social contract and avert opportunism. They are known as self-enforcing safe-guards (Dyer 1997). Social exchanges serve as efficient governance mechanisms and reduce the transaction costs. (Dore 1983; Dyer 1997; Saiko 1991).

This study also investigated whether the relationships between social exchanges and alliance effectiveness and stability measures are moderated by interfirm environmental contexts such as uncertainty, international dimension, and rivalry between partners. The study hypothesized that these contexts will negatively moderate the relationships between social exchanges and alliance performance and stability measures.

Research Findings

The findings from this study make substantial contributions to the understanding of the role and influence of social exchanges in the performance and stability of alliances. The results indicate that relational social exchanges between firms do positively influence alliance performance and stability. The reciprocity, perceived trustworthiness, and power equality between partners are found strongly and positively related to the effectiveness of the alliance, extent of interfirm learning, and the partners' commitment to stay in the alliance relationship.

The construct 'reciprocity' was operationalized as reciprocal investments or other inputs committed by both parties in the alliance. This variable is a significant explanatory factor of alliance performance, extent of learning, and partner's propensity to stay.

'Reciprocity' is an important factor in this model as it implies the moral obligation of partners, which serves as the basis for mutual commitment (Dwyer et al., 1987). As the magnitude of the resources committed by both partners increase, partnership becomes a stronger and long-lasting. The variable reciprocity also exhibits strong correlations with various forms of partner-trustworthiness expressed in the relationship. Tangible commitments of the resources in the form of skills, expertise, and other organizational resources may also enhance the perceived trustworthiness in the relationship.

Following Ring and Van de Ven (1992), and Anderson and Narus (1990), this research focused on the exchange dyad to conceptualize and examine the trust in the alliance relationship. This study captured the trust dynamics by measuring the perceived trustworthiness of the partner. In this study, the trustor's perception of trustee's

trustworthiness captures the extent of trust in the alliance. The perceived trustworthiness of the partner was operationalized with a seventeen-item scale to capture three distinct dimensions of interfirm trust. This conceptualization focuses on a party's relational trust based on the interaction and experience with a particular partner rather than a party's general propensity to trust. Mayer et al (1995) argue that trustworthiness is comprised of three factors: ability, benevolence, and integrity. Ability is that groups of skills, competencies, and characteristics that a partner perceives in the counterpart. Benevolence is the extent to which a specific partner is believed to do good to the focal party. Integrity refers to the extent a partner is perceived to adhere to certain principles acceptable to the focal party. Since the factor analysis also supported the three dimensional factor structure of this construct, the researcher decided to test the differential effects of each of the trustworthiness dimension, instead of combining three trustworthiness measures into a single trustworthiness variable. The three distinct dimensions were introduced in the regression model as independent variables.

Overall, the results indicate that being trustworthy in a relationship is essential for the success and stability of the alliance. By studying the differential effects of interfirm trustworthiness, the study revealed the important expectations of a partner in an alliance and the issues that form the basis of development of trust in an interfirm alliance. These results would help identify specific actions a particular party in an alliance should undertake in order to become more trusted.

The regression results indicated that the trust of other partner's abilities (ability-trust), is positively linked to alliance effectiveness, interfirm learning, and propensity to stay in the alliance. Similarly, perceived trust in the integrity of the partner is positively

related to effectiveness and propensity to stay in the alliance. The integrity-trust, however, was not significantly related to interfirm learning. The benevolence-trust was not significantly related to any of the performance and stability measures. These results suggest that a partner to an alliance should possess and exhibit a willingness to share its skills, expertise, capabilities, and knowledge to become 'trustworthy' in an alliance. Similarly, a partner is expected to exhibit fairness, sense of justice, and consistency while dealing with the other party to be perceived 'trustworthy'. Since being perceived as 'trustworthy' is significantly related to effectiveness and stability of the alliance, alliance managers should take into account this issue seriously. They should develop organizational routines that communicate a strong sense of integrity and justice; and should develop interfirm 'modus operandi' that cast a positive overtone to the relationship.

In the interorganizational literature, the power construct has long been considered an important factor in structuring of interfirm relations (Pfeffer & Salanick 1978). Since power is considered a central property of any relationship (Blau 1964; Cook 1977), and most of the interfirm conflicts occur due to asymmetry in the power between parties in a relationship, the relative power or a balance of power in a relationship is a critical aspect of an alliance. From the reciprocal social exchange perspective, the process of interaction and collaboration are characterized by harmony, balance, and equality rather than coercion and dominance motives (Alter & Hage 1992; Heide & Miner 1992), power equality in a relationship is essential for success and stability of alliances. Despite its theoretical and practical significance, the empirical studies on interorganizational power are limited (Frazier 1983; Provan & Gassenheimer 1994).

The study also found support for the hypotheses that power equality between alliance partners enhances the alliance effectiveness, interfirm learning, and partner's propensity to stay in the alliance. The power measure employed in this study captured the relative power of both partners in the alliance. This is consistent with the notion of social exchange theory that power sharing is an essential relational coordination process.

The overall support for all the main effects of the variables reciprocity, trustworthiness, and balance of power between partners is particularly encouraging given the fact that this study controlled for various significant alternative explanations of alliance performance and stability such as past alliance experience, and formal controls. The variable 'past alliance experience' with the partners shows significant relationship with interfirm learning, and a firm's propensity to stay in the alliance. However, this factor is not significantly related to the overall effectiveness of the alliance. These results suggest that although past relationship with a partner enhance the compatibility and learning in the alliance, to maximize the effectiveness of a particular alliance, managers still have to rely on relational exchange coordination processes. Interestingly, the control variable 'formal controls' is not related to interfirm learning, effectiveness, or propensity to stay. This finding supports the argument that formal controls such as legal contracts, rules and regulations are not important determinants of the alliance performance.

The study also tested the efficacy of the social exchanges under different interfirm contexts such as international alliances, uncertain industry environment, and competitive alliances. There is not a strong support evidenced in the results for the influence of interfirm contexts on relationships between social exchanges and alliance performance, and stability. A marginal support for the hypotheses that the efficacy of social exchange

is weaker in international alliances is found. The influence of trustworthiness and power equality was weaker on the firm's propensity to stay in the international alliances than in domestic alliances. This is consistent with the argument that international alliances are much more complex than domestic alliances. International alliances involve certain innate difficulties arising out of differences in national cultures, and socio-political systems (Harrigan 1988; Parkhe 1991). Another interesting result revealed in the study is that the competitive rivalry did not have any influence on the linkages between social exchanges and alliance performance. All the moderating effects that were found significant were only monotonic, and the interaction plots did not reveal any nonmonotonic effects of the moderators.

Major Contributions

The primary contributions of this research are threefold; development of a comprehensive model on the basis of a sound theory, development and refinement of constructs to capture the dynamic alliance interface, and deriving support for the model using data from actual boundary spanning alliance managers.

This study develops a comprehensive theoretical model by incorporating essential features of social exchange theory to capture the ongoing dynamic interactions between alliance partners. Previous literature on alliances has largely been built upon economic rationality and has paid little attention to ongoing interaction and exchange patterns in the alliance. There are several advantages in analyzing the interfirm alliance relationships on the basis of social exchange theory. This theory allows us explicitly look at the dyadic, bilateral interactions and analyze the strategic alliance itself as a unit, rather than individual partners or the larger social system to explain the performance and stability of

alliances. Social exchange perspective also stresses an important property of any cooperative effort; the development process of cooperation is by no means deterministic (Hakansson & Snehota 1995; Ring & Van de Ven 1994). The dyad will stabilize only if both parties consider it beneficial. No choice can be made unilaterally, since the counterpart must be continuously motivated to engage in transaction. Such a perspective better captures the dynamic evolution of cooperation. Another advantage of employing social exchange perspective is that it subsumes diverse perspectives on interfirm interaction and exchange within its fold. For instance, relational contracting (Macneil 1980), resource dependence (Pfeffer and Salanick 1978), social embeddedness (Granovetter 1985), and game-theoretic insights on 'Tit for Tat' and 'shadow of the future' (Axelrod 1984) are strongly rooted in social exchange theory. In consistent with the recommendations of several organizational theorists, this study combines the behavioral and sociological approaches to understand the link between managerial interactions and exchanges in alliances (March & Simon 1958; Cyert & March 1963). By capturing the characteristics of exchange behaviors and patterns, this study help us understand the essential interorganizational routines that are required to enhance and leverage interfirm collaborative capabilities to achieve the benefits of strategic alliance.

In terms of construct development and measurement, this study made several refinements. Although many of the measurement scales used in this study were adapted from the published research, the scales were further refined conceptually and pilot tested before used in the final study. In consistent with social exchange theory, social exchange measures (independent variables) were modified to reflect the bilateral nature of the relationship dimension to better capture the characteristic of the dyad rather than the

characteristics of the individual respondent. For example, to take into account the mutuality in the dyad, reciprocity was measured as the total sum of a respondent's account of the resources committed by itself and its perception on the extent of resources committed by the other party. The trustworthiness is measured with a comprehensive 17-item measure of perceived trustworthiness of the other party (Mayer et al., 1995, 1998). This measure captures the abilities, integrity, and benevolent characteristics and actions of the other party, as perceived by the respondent. This is the first study to adapt and incorporate such a detailed and well-defined scale to measure the interfirm trust. This multi-dimensional construct enabled the researcher to precisely understand which component of trust matters in an alliance relationship, and study differential effects of the various forms of trust on alliance performance and stability. The measure of power equality also took into account the bilateral and mutual aspect of influence in the interfirm relation. This construct measured the extent of influence each partner exercised over the other in the alliance. The power sharing between partners is conceptualized as the extent of equal say or influence the respondent perceived in the alliance. This is an important aspect of social exchange process between alliance partners.

The study also exercised rigorous techniques and procedures for improving the reliability and validity of the results. The data for this study came from key informants such as boundary spanning alliance managers. This is consistent with the recommendations to make use of the most knowledgeable respondents (Bagozzi & Phillips 1982; Venkatraman & Grant 1986). The sample represented a wide variety of industries and improved the external validity of the research findings. The scales used in this study had a strong theoretical base and proved to be highly reliable. The factor

analysis and Cronbach's alpha reliability analysis revealed that scales were unidimensional and had reliability coefficients well above the required 0.70.

This study controlled for various alternative explanations to improve the theoretical validity of the study. Several variables that might have an influence the performance and stability of alliances were introduced in the regression analysis and their variance accounted for in the models analyzed. For instance, this study controlled for industry effects, size of the respondent firm, type of alliance, importance of alliance to respondent, and formal controls, past experience with the partner, and the total number of alliances the respondent is currently entered into.

Limitations and Implications for Research

There are several theoretical and empirical limitations to this study. They open up several opportunities to extend or modify the scope of this study along several dimensions. For instance, this study assumes that there exists a high degree of autonomy and discretion for individual firms within the broader economical and interfirm context, and that the stability and success of strategic alliance as an institutional arrangement depend on the social exchanges between autonomous organizations and their capacity to develop mutually acceptable social norms of governance (Homans 1974; Eisenstadt 1971). This assumption, however neglects the fact that the social exchange processes are shaped by the societal, economical, cultural and institutional contexts in which firms and managerial actions are embedded and how these forces determine the cooperative behavior of individual organizations. This offers an opportunity to study whether any contextual and structural factors determine the nature of social exchanges, and examine

the performance implications of such differences. More specifically, the role of national culture, organizational cultural and structural factors in shaping the social exchange process would be an interesting research. In the same vein, it would be a worthwhile effort to understand how the differences in partners' organizational culture and structure affect the compatibility and performance of the alliances.

This study also does not address the role of instrumental processes such as interfirm socialization and communication in promoting social exchanges between partner firms. The instrumental processes might play a crucial role in the development of trust and enhance the interfirm learning. Another related research worth pursuing will be to study the role of information technology in interfirm collaboration.

An important theoretical limitation is that this study examines the exchange processes within the dyadic relationships and ignores the impact of network of firms on dyadic relationships. Since firms often enter into a network of alliance relationships, it is significant to analyze the effects of the presence of other firms on the dyadic relationships between two partners (Gulati 1995).

Empirically, this study conjectures that there are clear-cut causal and temporal linkages between the relational social exchange processes and alliance outcomes, even though this research is a cross-sectional examination. With cross-sectional studies, it is difficult to establish causality. For instance, the results suggest that social exchanges result in higher degree of interfirm learning. Yet a reverse sequence in the causal relationship is also conceivable; that is interfirm learning result in higher levels of trust, reciprocity, and power sharing. Certainly, a longitudinal examination to capture the

dynamics of ongoing interaction and alliance outcomes would be a most appropriate way to test and confirm the hypotheses made in the study.

This study relies on data from one side of the alliance dyad. From the research design angle, it would be an improvement to collect data from both sides of the alliance dyad. This will not only enhance the reliability of the measures of constructs such as trust and reciprocity that is bilateral in nature, but will enable cross-validation of these constructs. However, it must be noted that this study specifically focused on the alliance dyad and improved the reliability of measures by capturing the bilateral nature of the exchange process.

An important measurement limitation of this study is the use of single informants and possible measurement error. To improve the validity of organizational level constructs, use of multiple respondents would be more appropriate (Kumar, Stern, & Anderson 1993; Phillips 1981). However, the informants of the study are highly familiar and involved with the specific alliance. The informants are highly knowledgeable about overall corporate strategic activities and performance implications of alliance. Most of the respondents of this study are top management executives at the level of vice-president and above.

Another limitation pertaining to common method variance should be acknowledged. Although the data for this study came from highly knowledgeable respondents who are closely involved in monitoring and managing alliances, the study did not address the potential problems of common method variance (Campbell & Fiske 1959) or related concerns about the consistency motif and the social desirability bias (Podsakoff & Organ 1986). However, “the practical utility of same source self-report measures

makes them virtually indispensable in many research contexts” (Podsakoff & Organ 1986). To test the common method variance, this study employed Harman’s single-factor test (Harman 1967), a post hoc test. The results revealed that neither a single nor a general factor, suggesting that any systematic variance common to the measures was lacking. Regarding the social desirability bias, the researcher feels that the anonymity and confidentiality of the respondents would reduce the social desirability bias (Konrad & Linnehan 1995). However, such social desirability bias cannot be totally ruled out. The above addressed methodological limitation may be overcome in the future research by employing a triangulation methodology (Keats & Hitt 1988). Since the most of the variables of interest in this study were alliance-specific and not available from published sources, the data from the respondents could not be corroborated with secondary or other sources. However, in the recent times several consulting firms are developing data banks on strategic alliances. These data banks might provide valuable information to future researchers to triangulate their data.

Implications for Management Practice

This research is built on the premise that instability and failures of strategic alliances can be partially explained by distrust, poor understanding, and lack of mutual accommodation between partners (Niederkofler 1991; Ring and Van de Ven 1994). This study captures the practical significance of social exchange processes in managing alliances, and offers a framework for the understanding of the skills required for managing complex interfirm economic phenomenon such as strategic alliance. By specifically examining the relational social exchange processes in alliance success, this

study reiterates the role of boundary spanning alliance managers in managing the ongoing day-to-day interaction with their counter parts.

The results of the study reinforce the opinion that alliance is not just efficiency driven structural alternative, but a complex socio-political process that involves complex social exchanges between firms and their managers. This study emphasized that a partner to an alliance should possess and exhibit a willingness to share its skills, expertise, capabilities, and knowledge to become 'trustworthy' in an alliance. Similarly, a partner is expected to exhibit fairness, sense of justice, and consistency while dealing with the other party to be perceived 'trustworthy'. Since being perceived as 'trustworthy' is significantly related to effectiveness and stability of the alliance, alliance managers should take into account this issue seriously. They should develop organizational routines that communicate a strong sense of integrity and justice; and should develop interfirm 'modus operandi' that cast a positive overtone to the relationship.

During the course of data collection, the researcher had opportunities to conduct telephonic interviews with some senior executives who responded to this study. The executives emphasized the importance of trusting, being trustworthy, and tangible commitments to the alliance and sharing power with their alliance partners. One executive from a telecommunication equipment firm pointed out that trust and mutual power sharing are fundamental to leveraging the skills, expertise, and technologies to and from their partners in alliances. Another executive - Director of strategic alliances- in a large pharmaceutical company opined "although they perform a thorough and careful analysis of partner's skills, assets, and other resources during the partner selection for

each of the alliance they enter into, the success of the alliance is very much shaped by the chemistry between managers”.

The results of the study demonstrate that boundary spanning alliance managers cannot merely rely upon contractual safeguards to ensure the success of strategic alliance. As one executive in-charge of technology transfer and alliance put it, the legal contract is a mere business ritual, and does not have a strong bearing on the alliance stability. Boundary spanning managers need to know more than the input conditions, investments, and types of governance structures to manage the alliance successfully. These findings provide strong support and reinforce the argument that relational process between firms is central to managing interfirm relationships.

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APPENDIX – A

SURVEY QUESTIONNAIRE

SECTION A

General Information

The following questions pertain to your firm, and general background of the alliance. Please answer each question to the best of the information available on the strategic alliance identified. Thank you once again for your cooperation and help.

1. Major line of business of the alliance _____
2. Percentage of equity/share (if any) owned by your firm in the alliance _____ %
3. Percentage of equity/share (if any) owned by the partner firm in the alliance _____ %
4. Please identify the type of the strategic alliance by checking all relevant categories that correspond to the alliance partner:

<input type="checkbox"/> Joint venture	<input type="checkbox"/> Licensing of products or technologies	<input type="checkbox"/> Joint marketing or distribution
<input type="checkbox"/> Direct investment	<input type="checkbox"/> Joint purchasing	<input type="checkbox"/> Other contractual cooperation
<input type="checkbox"/> Joint R&D	<input type="checkbox"/> Joint manufacturing	<input type="checkbox"/> (any other) _____
5. Total number of employees in your firm _____
6. Number of distinct SBUs / divisions within your firm _____
7. Did your firm have any alliance with the partner firm before the present alliance? Yes No
8. Total number of strategic alliances your firm is currently engaged with _____
9. How many years you have been working in your present position _____ years
10. In what functional area have you spent most of your career?

<input type="checkbox"/> Marketing	<input type="checkbox"/> Production	<input type="checkbox"/> Engineering	<input type="checkbox"/> Finance	<input type="checkbox"/> Human resources
<input type="checkbox"/> Information Systems	<input type="checkbox"/> Other			

SECTION B

The following questions relate to the nature of relationships that currently exist between your company and the identified alliance partner company. Please indicate the extent to which you agree or disagree with each of the items.

	<u>Strongly Disagree</u>		<u>Neutral</u>			<u>Strongly Agree</u>
1. Our firm has committed a substantial amount of financial resources to participate in the alliance with the partner.	1	2	3	4	5	6 7
2. Our managers have spent a lot of time and energy to maintain the alliance.	1	2	3	4	5	6 7
3. Our firm has committed substantial human, technological, or marketing resources in the alliance.	1	2	3	4	5	6 7
4. The partner has committed a substantial amount of financial resources to participate in the alliance with our company.	1	2	3	4	5	6 7
5. The partner firm's managers have spent a lot of time and energy to maintain this alliance.	1	2	3	4	5	6 7
6. The partner firm has committed substantial human, technological, or marketing resources in the alliance.	1	2	3	4	5	6 7
7. The partner firm is very capable of performing its role in the alliance.	1	2	3	4	5	6 7
8. The partner firm is known to be successful at the things it tries to do.	1	2	3	4	5	6 7
9. The partner firm is well qualified for the alliance.	1	2	3	4	5	6 7
10. The partner firm has much knowledge about the work that needs done in the alliance.	1	2	3	4	5	6 7
11. We are very confident about partner firm's skills.	1	2	3	4	5	6 7
12. The partner firm has specialized capabilities that adds value to the alliance.	1	2	3	4	5	6 7
13. While making important decisions, the partner firm is concerned about our company's welfare.	1	2	3	4	5	6 7
14. The partner firm would not knowingly do anything to hurt our company.	1	2	3	4	5	6 7
15. Our firm's needs are important to partner firm.	1	2	3	4	5	6 7
16. The partner firm looks out for what is important to our firm in the alliance.	1	2	3	4	5	6 7

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 17. The partner firm will go out of its way to help our firm. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. The partner firm has a strong sense of justice. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. The partner firm is fair in business dealings with us. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. This alliance partner stands by its word. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. The partner firm's behaviors are not very consistent. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. We like the partner firm's values and ideals. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. Sound principles seem to guide the partner firm's actions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. This alliance is very important to our firm. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. This alliance is very important to the partner firm. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. Our firm can influence the partner firm to change its decisions regarding R&D, sales, production, or distribution. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. Partner firm can influence our firm to change the decisions regarding R&D, sales, production, or distribution. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. Our firm and the partner company have equal say in all the business dealings in the alliance. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. Our firm and the partner firm have equal influence on each other on all alliance related decisions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30. A high level of two-way communication exists between our firm and the partner company. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. We share a lot of crucial information with the partner firm. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32. Our firm communicates very frequently with the partner firm. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33. Our firm communicates with the partner firm extensively using Fax, Phone, or E-mail. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34. We have many informal one-to-one interactions with personnel of the partner firm. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 35. There are many meetings, seminars, or training programs jointly conducted by our firm and the partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 36. Our managers and partner firm's managers jointly work in teams or task forces or committees. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 37. Our firm's relationship with the partner is very formal. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 38. We very often consult with legal experts to sort out the problems in the alliance. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

39. We strictly follow the contracts to coordinate this alliance.	1	2	3	4	5	6	7
40. We very often rely on legal means to ensure that partner firm meets its obligations.	1	2	3	4	5	6	7
41. Rules have been strictly enforced in the alliance.	1	2	3	4	5	6	7
42. The partner firm has marketing or technological or human resources that can contribute to the growth of our firm.	1	2	3	4	5	6	7
43. This alliance with the partner will enhance the value of our products/services to customers.	1	2	3	4	5	6	7
44. Few other firms can provide our firm with the resources that are available with this partner.	1	2	3	4	5	6	7
45. Our firm's marketing, technological, or human resources can contribute to the growth of the partner firm.	1	2	3	4	5	6	7
46. This alliance will enhance the value of the partner company's products/services to its customers.	1	2	3	4	5	6	7
47. Few other firms can provide the partner with the resources that are available with our firm.	1	2	3	4	5	6	7
48. Our firm and the partner firm compete in the same markets.	1	2	3	4	5	6	7
49. The partner firm can emerge into a potential competitor.	1	2	3	4	5	6	7

SECTION C

The following statements relate to your opinion regarding the stability and success of the alliance. Using the scale below, indicate the extent to which you agree or disagree with each of the statements.

	<u>Strongly Disagree</u>					<u>Neutral</u>				<u>Strongly Agree</u>
1. Our firm's relationship with the partner in this alliance has been very productive.	1	2	3	4	5	6	7			
2. Our firm's relationship with the partner in this alliance has been very worthwhile.	1	2	3	4	5	6	7			
3. Benefits and returns from the alliance have been fair and equitable.	1	2	3	4	5	6	7			
4. Alliance with this partner has contributed to our profits.	1	2	3	4	5	6	7			
5. This alliance has contributed to achieving market share or competitive advantage.	1	2	3	4	5	6	7			
6. Joining this alliance may be a mistake on our part.	1	2	3	4	5	6	7			
7. Our firm will gain a lot by continuing in this alliance.	1	2	3	4	5	6	7			

- | | |
|---|---------------------------|
| 8. We expect our relationship with the alliance partner to continue for a long time. | 1 2 3 4 5 6 7 |
| 9. Our firm made the right decision in choosing to participate in this alliance. | 1 2 3 4 5 6 7 |
| 10. We would like to continue this alliance, because we enjoy our relationship with the partner firm. | 1 2 3 4 5 6 7 |

SECTION D

The following statements relate to learning that occurs during the alliance with the partner. Using the scale below, indicate the extent the following has occurred in your alliance with the partner.

- | | <u>Not
at all</u> | <u>Moderate</u> | | | | | <u>a great
deal</u> |
|--|-----------------------|-----------------|---|---|---|---|-------------------------|
| 1. Our firm has learned to jointly execute marketing, R&D, or production operations with the alliance partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Our firm has learned to exchange skills, know-how, or technologies with the partner company. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Our firm has gained new techniques, competencies or technologies from the partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Our firm has developed new ideas, or skills because of the strategic alliance. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

SECTION E

The following statements refer to the type of industry or environment your firm is operating. Using the scale, indicate the extent each statement approximates the actual conditions in your firm's principal business.

- | | <u>Strongly
Disagree</u> | <u>Neutral</u> | | | | | <u>Strongly
Agree</u> |
|---|------------------------------|----------------|---|---|---|---|---------------------------|
| 1. Our firm very often has to change its marketing practices to keep up with competition. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. The rate of product / service obsolescence in the industry is very high. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Actions of the competitors are easy to predict. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Demand and consumer preferences are almost unpredictable. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Production / service technologies in the industry are not subject to change. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- | | |
|---|---------------|
| 8. We expect our relationship with the alliance partner to continue for a long time. | 1 2 3 4 5 6 7 |
| 9. Our firm made the right decision in choosing to participate in this alliance. | 1 2 3 4 5 6 7 |
| 10. We would like to continue this alliance, because we enjoy our relationship with the partner firm. | 1 2 3 4 5 6 7 |

SECTION D

The following statements relate to learning that occurs during the alliance with the partner. Using the scale below, indicate the extent the following has occurred in your alliance with the partner.

- | | <u>Not
at all</u> | <u>Moderate</u> | | | | | <u>a great
deal</u> |
|--|-----------------------|-----------------|---|---|---|---|-------------------------|
| 1. Our firm has learned to jointly execute marketing, R&D, or production operations with the alliance partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Our firm has learned to exchange skills, know-how, or technologies with the partner company. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Our firm has gained new techniques, competencies or technologies from the partner. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Our firm has developed new ideas, or skills because of the strategic alliance. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

SECTION E

The following statements refer to the type of industry or environment your firm is operating. Using the scale, indicate the extent each statement approximates the actual conditions in your firm's principal business.

- | | <u>Strongly
Disagree</u> | <u>Neutral</u> | | | | | <u>Strongly
Agree</u> |
|---|------------------------------|----------------|---|---|---|---|---------------------------|
| 1. Our firm very often has to change its marketing practices to keep up with competition. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. The rate of product / service obsolescence in the industry is very high. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Actions of the competitors are easy to predict. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Demand and consumer preferences are almost unpredictable. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Production / service technologies in the industry are not subject to change. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

VITA

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Senthilkumar Muthusamy

Candidate for the Degree of

Doctor of Philosophy

**Thesis: PERFORMANCE AND STABILITY OF STRATEGIC ALLIANCES:
AN EXAMINATION OF THE INFLUENCE OF SOCIAL EXCHANGE
PROCESSES**

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Personal: Born in Manaparai, Tamilnadu, India, in 1965, the son of Muthusamy and Kamala, married to Ramadevi, and blessed with a son Gautham.

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