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Alliance Capability, Governance Mechanisms and Stakeholder Management in Complex Settings¹

An Exploration in the Context of Inter-firm Alliances of Simultaneous Cooperation and Competition

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Abstract

In today's business environment, inter-firm alliances of simultaneous cooperation and competition (IASCC) have become very important for enhancement of internal resources as well as market shares of firms. Evidence suggests that majority of the alliances today occur between competitors or within the same industry. Given the increasing importance and complexity of IASCC, issues of stakeholder management and governance structures in such alliances need to be more clearly understood. Using primary data collected from Indian firms in different sectors, this paper explores the antecedents of governance mechanisms in IASCC from a stakeholder perspective by viewing alliance partners as stakeholders. It is argued that alliance capabilities are important determinants of governance structures. Moreover, the role of these capabilities is moderated by the strategic context of the IASCC in determining the nature of governance structures.

Key words: Organizational Learning; Resource-based View - Dynamic Capabilities; Transaction Cost Economics; Cooperative Strategy; Strategic Alliances / JVs; Systems of Equations or Structural Equation Modeling (SEM)

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1. INTRODUCTION

Stakeholder theory has focused on governance issues from different perspectives. One such view is that when firms are relieved from short term pressures through effective governance mechanisms, they are able to pay attention to non-shareholding stakeholders better as these stakeholders can contribute to the value of the firm in the long term (Kacperczyk, 2009). In a shareholder driven notion of the firm, governance mechanisms are disciplinary devices to ensure that the top management of the firm remains committed to the goals of shareholder value (Fama, 1980). But this is not true in all contexts. For example, in complex alliance settings, management of non-shareholding stakeholders may be critical for the success of the alliance. In such circumstances, appropriate governance structures are desirable.

In today's business environment, inter-firm alliances of simultaneous cooperation and competition (IASCC) have become very important for enhancement of internal resources as well as market shares of firms (Osarenkhoe, 2010). Evidence suggests that majority of the alliances today occur between competitors or within the same industry (Han et al, 2012; Harbison and Pekar, 1998). Given the increasing importance and complexity of IASCC, issues of stakeholder management and governance structures in such alliances need to be more clearly understood. Using primary data collected from Indian firms in different sectors, this paper explores the antecedents of governance mechanisms in IASCC from a stakeholder perspective by viewing alliance partners as stakeholders. More specifically, we posit that alliance capabilities are an important determinant of governance structures. An empirically implementable construct of alliance capabilities is developed to explore this relationship. Since governance structures are ways of managing stakeholders, we also explore when a particular governance mechanism may become redundant or counter-productive, and may, therefore, not warrant investments from the alliance partners.

Rest of the paper is organized into 6 sections. Section 2 discusses the conceptual framework of our analysis and develops the hypotheses for this study. Methodological details of the analysis undertaken in this study are described in the next section. In Section 4, we present the results of our data analysis. In the penultimate section, we interpret the results to highlight their wider implications. In the concluding section we highlight the insights of our

study regarding the interaction between different strategic contexts and alliance capabilities and their impact on the nature of appropriate governance structures for alliance management.

2. CONCEPTUAL UNDERPINNINGS, FRAMEWORK OF ENQUIRY AND HYPOTHESES

A wide variety of conceptual developments can inform our exploration of the role of alliance capability and governance mechanisms to manage stakeholders in the context of IASCC.

2.1 Categorizing IASCC situations

We draw on the work of Bengtsson and Kock's (2000: 4) to define simultaneous cooperation and competition as "dyadic and paradoxical relationship emerging when two firms are cooperating in some activities, while competing with each other in the remaining activities". This, combined with Bengtsson, Eriksson, and Wincent's (2010) idea of processual and two continua approach, help us conceptualize cooperation and competition as phenomena that occur along two distinct but interrelated continua. This conceptualization is useful for understanding strategic behaviour as a multidimensional construct and IASCC as a complex process in which partners are dynamically engaged with each other. Along the two continua of cooperation and competition, depending upon the intensity of cooperation and competition that simultaneously occur between the alliance partners, four types of extreme strategic situations may exist (Luo, 2004): (i) *low cooperation – low competition*; (ii) *low cooperation – high competition*; (iii) *high cooperation – low competition*; and (iv) *high cooperation – high competition*. In the context of the IASCCs for which we have collected data, the strategic behaviour of alliance partners has been mapped into these four situations. We shall argue below that the issues relating to stakeholder management may vary in these four situations.

2.2 Alliance partners as stakeholders

When alliance partners are viewed as stakeholders, then issues of governance revolve around definition, refinement and alignment of the value propositions of the stakeholders (Bolton and Nie, 2010). While in a firm, the focus of stakeholder governance is in ensuring the alignment of the value proposition of the managers with that of the firm; in the case of alliances, the focus of stakeholder governance is in ensuring the alignment of the value propositions of the partners with that of the alliance (Bolton and Nie, 2010). Consequently, governance issues based on stakeholder theory have important implications for competitor

firms, which are increasingly facing the need to collaborate with each other in order to adapt to environmental dynamism.

2.3 Nature of governance mechanisms

Alliance studies have focused on two forms of governance mechanisms – *contract-based* and *relation-based* (Hoetker and Mellewigt, 2009). Contract-based governance mechanisms draw from transaction cost economics literature (Williamson, 1991) and suggest that the contract-based governance is useful in minimizing the transaction costs involved in exchange processes related to alliance functioning (Mayer and Argyres, 2004). On the other hand, relation-based governance mechanisms highlight the role of trust, relationship commitment and cooperation between alliance partners and the need for joint problem-solving and shared decision-making (Dyer and Singh, 1998; Gulati and Singh, 1998). Dyer and Singh (1998) posit that alliances need to evolve governance mechanisms that are best suited for them. For instance, it has been argued that for alliances relating to knowledge-based assets, relation-based governance mechanisms are likely to be useful, while for alliances concerned with product-based assets, contractual governance mechanisms may be appropriate (Hoetker and Mellewigt, 2009).²

2.4 Alliance capabilities as a determinant of governance mechanisms

Since development of alliance governance mechanisms is an important aspect of managing stakeholders, it may be useful to study those determinants of governance mechanisms which can be consciously evolved. Governance mechanisms are often seen as a strategic choice evolved by firms to manage alliance related activities (Aggarwal, Siggelko, and Singh, 2011). The alliance capabilities developed through a variety of investments influence the governance mechanisms that firms can develop for alliance management (Aggarwal et al., 2011). For example, as coordination costs are important in alliance management, alliance capabilities pertaining to coordination mechanisms can be an important determinant of governance structures (Gulati and Singh, 1998). Therefore, alliance capabilities can be seen as a higher-

² While product-based assets may also be knowledge intensive, the outcome is typically a tangible product, where contract-based governance is more effective as contracts can determine marketing rights or sharing of manufacturing facilities. On the other hand, in knowledge-based assets, the outcome may be more intangible in terms of a process that is being developed or standards that are being built, where contracts may not be able to govern sharing of value jointly created by the partners. In such cases, where outcomes are intangible, relation-based governance mechanisms are more suitable.

order construct capturing a variety of capabilities that get affected by several first-order variables.

The literature has identified four dimensions of alliance capabilities that can potentially influence governance mechanisms: (i) capabilities of alliance managers; (ii) alliance management practices in the firm; (iii) capability to identify appropriate partners for alliance; and (iv) previous alliance experience. Alliance manager capabilities are a part of the dynamic capabilities of managers such as fast response and building mental models to take decisions (Zhang, 2007). Alliance management practices relate to coordination, and exchange of resources and information among alliance partners (Cui and O'Connor, 2012). Partner identification capability refers to the identification of partners on the basis of complementarities in strategy, resources and technology (Jain and Jain, 2004). Alliance experience refers to the organisational learning capacities of firms to manage alliance partners with diverse strategies (Duysters et al, 2012).

2.4.1 Capabilities of alliance managers

In the context of an alliance, it is not only necessary to consider the strategic interests of the alliance partners, but also to consider the motivations of important stakeholders such as alliance managers (Gillespie and Teegen, 1995). The alignment of the motivations of alliance managers with the strategic interests of the alliance is an important aspect of the development of alliance capabilities. If relationships need to be bridged with strategic alliance partners, then it is necessary that organizational legitimacy exists for such alliances (Shah, 2011). Since alliance managers are important stakeholders who can contribute to building organizational legitimacy, capabilities of alliance managers could be an important indicator of alliance capability. Similarly, alliance manager capabilities to institutionalize processes for internalizing the learning from alliance partners are also an indicator of alliance capability (Schildt, Keil, and Maula, 2012). The ability of a firm to effectively address the concerns of stakeholders depends on managerial cognition (Crilly and Sloan, 2012). Since managerial cognition is important for understanding environmental issues (George, Chattopadhyay, Sitkin, and Barden, 2006) and the relative importance of stakeholders (Henrique and Sadorsky, 1999), alliance manager capabilities is likely to be an important determinant of governance mechanisms. The capabilities of alliance managers are also important because they need to strike a balance between the interests of firm's stakeholders such as customers, suppliers and employees, and that of alliance partners. Therefore, alliance manager

capabilities may determine both contractual and relation-based mechanisms governing the relationship between alliance partners.

2.4.2 Alliance management practices

Insofar as alliance governance structures are conceptualized as organizational forms, they are closely associated with alliance management practices (Albers, 2010). Alliance capabilities are often influenced by the management practices adopted by firms, and firms which develop and codify alliance management practices are able to engage with alliance partners more effectively (Lavie, 2004; Mellat-Parast and Digman, 2008). These practices impact the alliance governance structures for monitoring and coordinating alliance related activities (Jiang and Li, 2009), which ultimately influence the achievement of firm as well as alliance related strategic goals (Hoffmann, 2005). Alliance management practices that routinize alliances related tasks and activities also improve the governance of the alliance (Ingirige and Sexton, 2006). Thus, alliance management practices are indicators of alliance capabilities that influence the alliance governance structures.

2.4.3 Capabilities to identify appropriate partners

Alliance capabilities such as the identification of appropriate partners influence the perception of stakeholders (Lambe, Spekman, and Hunt, 2002), and this helps in channelizing investments to build governance mechanisms that will deliver value (Dyer and Singh, 1998). Since alliances are often forged for combining the complementary resources of partners (Das and Teng, 1998; Lavie, 2006), selection of appropriate partners is important. Initial conditions regarding resources, motivations etc. are important in determining whether stable governance mechanisms through which alliance partners learn from each other will be put into place, or whether inertia will develop leading to failed governance structures (Burgers, Hill, and Kim, 1993). Thus, partner identification is an important alliance capability in determining effective governance mechanisms as appropriate selection of partner may reduce the costs incurred on evolving learning processes and developing effective governance mechanisms (Doz, 1996). Moreover, as alliance partner's relative strategic stakes and capabilities will influence its bargaining power, which in turn would impact the governance structures that would be needed for managing the relationships (Mandal, Bandyopadhyay, and Roy, 2011), identification of appropriate alliance partners is an important alliance capability that would help the alliance partner to achieve common objectives.

2.4.4 Role of alliance experience

When alliance management processes are uncertain and ambiguous, previous alliance experience is useful in managing these processes to create greater value (Sampson, 2005). The governance of IASCC can especially be influenced by drawing effectively from previous alliance experience reflecting cooperative (Barnett, Presely, Johnson, and Liles, 1994) and competitive elements (Anand and Khanna, 2000). Those firms which draw from alliance experience to invest in creating a governance structures to coordinate alliance related activities are often more successful at creating greater value (Kale, Dyer, and Singh, 2002). Alliance experience has been posited as a capability which particularly improves the relation-based governance between the alliance partners (Dyer and Singh, 1998). Thus, alliance experience is a capability that influences the development of appropriate governance mechanisms.

Broadly, when alliance partners are viewed as stakeholders then differences in their internal task routines become an important area of focus, and appropriate governance mechanisms are needed to address issues emerging from these differences (Lavie, Haunschild, and Khanna, 2012). Alliance practices need to integrate these different task routines in order to exploit the complementary resources that alliance partners bring to the alliance. Alliance partners can develop capabilities in order to overcome these differences and build relation-based mechanisms to collaborate with each other (Kale et al., 2002). A firm's responsiveness to its external environment (Brickson, 2007) is a determinant of whether it is able to treat stakeholders such as alliance partners with openness and trust. Alliance capabilities such as alliance management practices and the ability of the alliance partners to leverage their alliance experience help in developing greater coordination and trust. The coordination capabilities of the alliance partners have an important influence on the contracting structure and governance mechanisms which help in resolving disputes between them (Lumineau and Malhotra, 2011). The ability of firms to avoid asset specificity and their capacity to redeploy assets is an important determinant of governance structures and the potential to avoid contracting hazards (Williamson, 1985). Alliance capabilities and firm's strategic orientations influence the development of governance structures. Governance structures depend on the nature of alliance objectives which determine the relative emphasis on safeguarding proprietary resources, minimising transaction costs and building strong relational mechanisms. Alliance capabilities encapsulated by capabilities of alliance managers, alliance management practices, partner identification skills and alliance experience

facilitates firms to deal with all these issues and evolve appropriate governance mechanisms. Alliance capability involves the identification of an appropriate governance mix, i.e., the identification of contractual and relational elements separately.

Hypothesis 1a: Alliance capability influences the development of contractual governance mechanisms positively.

Hypothesis 1b: Alliance capability influences the development of relational governance mechanisms positively.

2.5 The moderating influence of strategic context

Four types of extreme strategic contexts or situations were identified for IASCC. The extant strategic situation is likely to moderate the relationship between alliance capability and governance structures, and consequently influence the process of stakeholder management in such alliances.

2.5.1. High cooperation – high competition context

The strategic context of *high cooperation – high competition* reflects a situation where high degrees of cooperation and competition co-exist. Thus, while on the one hand, because of high competition, such relationships are characterized by high degrees of hostility and symmetry (Bengtsson et al., 2010); on the other, because of high cooperation, these relationships simultaneously exhibit strong ties and high level of trust, commitment and cooperation between the alliance partners (Bengtsson et al., 2010). Hence, while the alliance partners experience tensions in the activities where they compete, they do not experience tension or fear opportunism in the activities where they cooperate. Since the strategic intent is to manage a *high cooperation – high competition* relationship, the alliance partners need to utilize their alliance capabilities to both develop appropriate relation-based governance structures and craft a suitable contract-based governance mechanism. Alliance capability may be used to develop relation-based governance structures as for realizing the advantages of cooperative interaction, the alliance partners need to easily share information and knowledge. This is achieved when there are strong ties (Granovatter, 1973) and trust between the alliance partners (Dyer and Singh, 1998). The existence of strong ties implies alliance capabilities such as frequent communication between the partners and knowledge sharing routines. Consequently, the existence of high degree of cooperation is strengthened with relation-based governance mechanisms.

Similarly, since this strategic situation entails high competition between the alliance partners, transaction costs are likely to be high for the interacting stakeholders. In order to minimize transaction costs, alliance capabilities are utilized to build contract-based governance. Contract-based governance can eliminate many apprehensions of firms in sharing their resources with alliance partners in such situations, and thus contribute to alliance success. Moreover, given high degree of cooperation in certain activities, information needs for detailed contracts may be more easily available, resulting in a situation where developing and monitoring of contracts would be feasible. Besides, alliance capabilities pertaining to accessing and maintaining information about the competing partners and mapping it with alliance objectives may have already evolved, facilitating strengthening of contract-based governance structures.

Hypothesis 2a: The strategic context of high cooperation and high competition will moderate the relation between alliance capability and contract-based governance positively.

Hypothesis 2b: The strategic context of high cooperation and high competition will moderate the relation between alliance capability and relation-based governance positively.

2.5.2. High cooperation – low competition context

In the strategic context of *high cooperation – low competition*, alliance partners exhibit a high degree of cooperation and a low degree of competition “in search of joint synergies created by complementary resources and capabilities” (Chin, Chan, and Lam, 2008: 440). Firms enter into such relationships when faced with high resource complementarity and low market commonality (Luo, 2004). While high resource complementarity increases resource interdependence, thereby encouraging collaboration between the alliance partners, low market commonality eases competitive pressure that may otherwise occur if the alliance partners compete in the same market space (Luo, 2004). These interactions are characterized by high complementarity, tie strength, trust and commitment in cooperative activities but low intensity and hostility in the competitive activities. Therefore, the overall tensions between the alliance partners are weak. Firms seek mutual benefits by pooling complementary resources, skills, and capabilities. Instead of seeking advantages over stakeholders, alliance partners try to co-produce and share value by promoting and maintaining mutual interdependencies with their stakeholders (Bengtsson et al., 2010; Lado, Boyd, and Hanlon 1997). For such relationships to flourish, the alliance partners need to ensure that there are

mechanisms, infrastructure, and set of practices that supports and facilitates seamless exchange of knowledge and information among themselves (Eisenhardt and Santos, 2002). In cooperation dominant relationships, alliance partners achieve this by developing relation-based governance mechanisms. These governance structures foster trust commitment and cooperation, which in turn help in synergistic extension, value sharing, and neutralization of potential conflicts among alliance partners (Luo, 2004). Shared values and commitment to the alliance ensure that alliance capabilities involving resource commitments by alliance partners are adequately met. Consequently, this leads to greater evolution of relation-based governance mechanisms.

In such relationships, since the cooperative part is dominating and is not threatened by the weak competition, the alliance partners do not perceive each other as competitors, or with the building of trust and commitment, they stop seeing each other as competitors (Bengtsson et al., 2010). Therefore, in such contexts, investments in contract-based governance mechanism may become counterproductive. Furthermore, because of low competition, opportunistic behavior by the alliance partners would be minimal. Consequently, transaction costs incurred for protecting proprietary assets and resources are likely to be insignificant. In fact, in such contexts, over reliance on contract-based governance structures may create restrictions and additional barriers between alliance partners, and thus may not contribute to greater value. Contract-based governance structures may only lead to increase in transactions costs. Thus, in this context, firms do not use alliance capabilities to strengthen contract-based governance mechanisms.

Hypothesis 3a: The strategic context of high cooperation and low competition will moderate the relation between alliance capability and contract-based governance negatively.

Hypothesis 3b: The strategic context of high cooperation and low competition will moderate the relation between alliance capability and relation-based governance positively.

2.5.3. Low cooperation – high competition context

The strategic context of *low cooperation – high competition* reflects a situation where alliance partners exhibit very low interaction in cooperative activities but very strong interaction in competitive activities leading to strong tension in the relationship from both the type of interactions (Bengtsson et al., 2010; Luo, 2004). In such relationships, firm's orientation is to achieve a position of superior performance and to achieve competitive

advantage over its partner (Lado et al., 1997) by competing with the alliance partners for market power, competitive position, and market share (Chin et al., 2008; Luo, 2004). Such relationships usually occur in an oligopolistic situation, where several firms have significant share of the market characterized by high competition (Luo, 2004). This relationship is similar to competitive rivalry, which encompasses a zero-sum orientation toward the firm's stakeholders (Bengtsson et al., 2010). Such strategic situations may encourage alliance partners either to erect barriers around their distinctive competencies or to behave opportunistically towards others (Williamson, 1985).

Such relationships are more likely to be forged between firms when product similarity, resource similarity, and market commonality are high (Luo, 2004). However, these are typically short-term alliances, where the partners enter into a relationship to achieve specific strategic goals within a short span of time. Lack of trust, commitment and cooperation between the alliance partners make it difficult for them to explore the complementarities and synergies that might exist. Utilization of alliance capabilities to enhance relation-based governance is likely to be beneficial as greater cooperation between the partners can lead to more effective exchange of resources (Dyer and Singh, 1998; Gulati, 1998). However, in this strategic context, investments on relation-based mechanisms may not yield desired results for several reasons. *First*, product and resource similarity, and market commonality reduce the partner's desire to cooperate (Bernheim and Whinston, 1990; Luo, 2004). *Second*, relation-based governance structures take time to develop and these relationships are inherently short lived (Bengtsson et al., 2010). *Third*, given a low cooperation situation context, very intense exchange of resources and information is unlikely to occur. Thus, investments in relation-based governance mechanisms are redundant. Since, building strong relation-based governance mechanisms is unlikely to add value, alliance partners may pay relatively less attention to using capabilities to develop such mechanisms.

Furthermore, excessively strong competitive interaction may also destroy the potential benefits of such relationships as high degrees of symmetry, intensity and hostility may turn the intense rivalry among the alliance partners into a confrontational competition (Bengtsson et al., 2010). Besides, strong competitive interaction coupled with weak cooperative interaction exacerbates the difficulty of establishing transparency and receptivity between the alliance partners (Larsson, Bengtsson, Henriksson, and Sparks, 1999). Given that such relationships are primarily dominated by competitive interaction, to realize the potential benefits, the alliance partners need to develop structural arrangements, which prevent turning of high competition relationship into destructive and confrontational head-on competition.

Moreover, the high competition context encourages alliance partners to defend, hold, and strengthen their strategic positions against their competitors (Hitt, Ireland, and Hoskisson, 2007) by taking necessary steps to protect proprietary resources and to prevent of leakage of knowledge. Alliance partners may achieve this by utilizing the alliance capabilities to develop appropriate contract-based governance structures. Since alliance partners recognize the need to safeguard proprietary knowledge of the firm, they develop capabilities to strengthen contract-based governance mechanisms.

Hypothesis 4a: The strategic context of low cooperation and high competition will moderate the relation between alliance capability and contract-based governance positively.

Hypothesis 4b: The strategic context of low cooperation and high competition will moderate the relation between alliance capability and relation-based governance negatively.

2.5.4. Low cooperation – low competition context

In the strategic context of *low cooperation – low competition*, the alliance partners do not interact significantly with each other in both the activities – the activities where they cooperate and in activities where they compete (Bengtsson et al., 2010; Chin et al., 2008; Luo, 2004). The alliance partners act or react practically independent of each other in the market spaces, and focus is largely on streamlining their investments and operations themselves (Luo, 2004). Low competitive interaction arises largely because of the dominant market power and position of the firms that may not be challenged by the competitors. Consequently, such competitive interactions do not motivate the alliance partners to improve and look for new avenues of cooperation that can create opportunities for future competitive advantage (Bengtsson et al., 2010). Therefore, such competitive interactions may lead situations similar to collusive and monopolistic behavior (Bengtsson et al., 2010; Lado et al., 1997; Luo, 2004). Furthermore, in this strategic context, the cooperative interaction between the alliance partners is similar to arm length distance in relationships (Uzzi, 1996). Such cooperative interactions are more like market transactions characterized by low trust and cooperation (Bengtsson et al., 2010). Because of lack trust and cooperation, alliance partners do not explore the complementarities and synergies, and develop enough trust and cooperation among themselves to be able to exchange information and knowledge. Since there is no strategic need for synergy the alliance partners place relatively lesser emphasis on the utilization of t of capabilities to develop relation-based governance mechanisms.

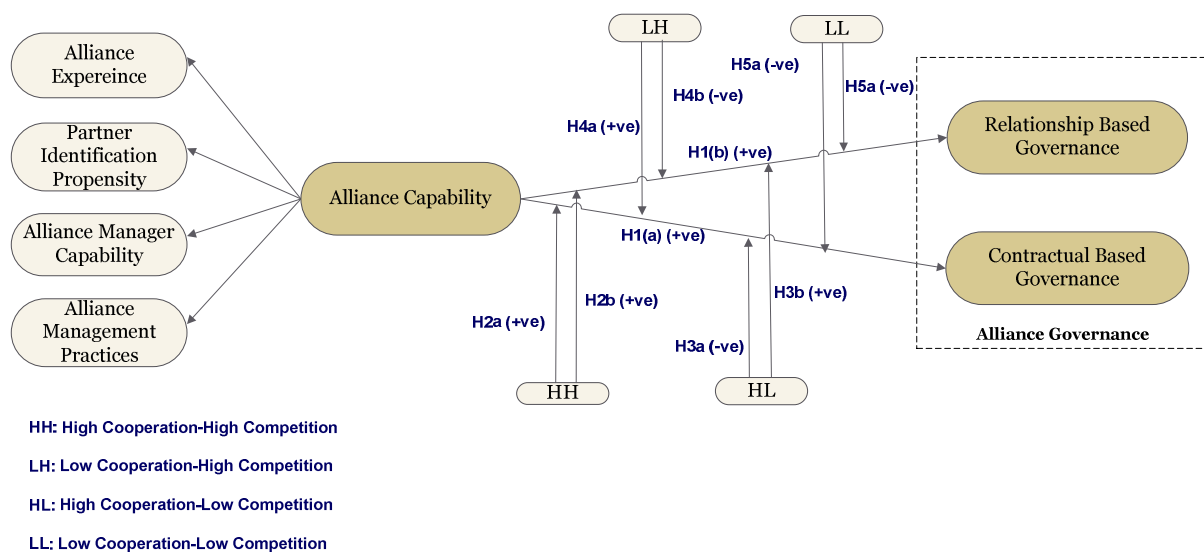
Consequently, due to situation resembling collusive behaviour and arm length like relationship arising as a result of deliberate choice to avoid each other in market spaces, this strategic context cannot form a positive dynamic state (Bengtsson et al., 2010). In such contexts, the alliance partners neither feel the need to develop and explore complementarities and synergies nor are they engaged in an intensive knowledge exchange. Moreover, due to low interdependence and interaction, the alliance partners are unlikely to realize the advantages and benefits of IASCC as such a relationships are largely inert (Bengtsson et al., 2010). Such relationships emerge both due to the initial conditions of selecting inappropriate partners (Burgers et al, 1993) as well as due to the lack of adequate learning processes in the alliance partners (Doz, 1996). Since there exists low competition among the alliance partners, it may be redundant to invest in contractual forms of governance as there may be no serious need to minimize transaction costs. Thus, investing in contract-based governance structures may be counter-productive. Similarly, since the level of cooperation between partners is low and the alliances are actually inert, it may be counterproductive to invest in relation-based governance mechanisms. In such alliances, partners are not interested in acquiring and internalising each other's resources. Consequently, they do not feel the need to use, in any serious way, alliance capabilities such as orientations and skills of alliance managers to build contract-based governance mechanisms.

Hypothesis 5a: The strategic context of low cooperation and low competition moderates the relation between alliance capability and contract-based negatively.

Hypothesis 5b: The strategic context of low cooperation and low competition moderates the relation between alliance capability and relation-based governance negatively.

The hypothesized model to be tested in the study is shown in Figure 1.

FIGURE 1
The Hypothesized Model



3. METHODS AND DATA

The context of this study is dyadic alliances where the partners simultaneously cooperate and compete with each other. The alliance partners are the primary stakeholders in such a context. The alignment of the objectives of the partners with those of the alliance is a primary concern emerging from stakeholder theory. The ability of a firm to engage with the concerns of multiple stakeholders reflects higher alliance capabilities in engaging with alliance partners. This is, therefore, a good context to study the moderating effect of different strategic contexts on the relationship between alliance capabilities and governance mechanisms. We deliberately chose dyadic alliances as the unit of analysis as it helps in grasping the tension and complexity that exists between the IASCC in more effective ways (Bengtsson et al., 2010; Bengtsson & Kock, 2000)

3.1 Sample and data collection

Sampling frame for this study was private and public firms in five high-technology research-intensive sectors of Indian industry: (i) information technology; (ii) pharmaceuticals; (iii) telecommunication; (iv) power and energy; and (v) steel. We chose these sectors for the study because firms in these sectors experience dynamic and extensive IASCC (Garrette, Castañer, and Dussauge, 2009; Gnyawali, He, and Madhavan, 2006, Ketchen, Snow, and Hoover, 2004; Luo, 2007; Spiegel, 2005). We collected data through a cross-sectional survey of India based alliances. India based alliances were chosen for two reasons. *First*, there might be differences in the characteristics of international and domestic alliances (e.g., Harrigan, 1988; Kogut and Singh, 1988; Parkhe, 1993; Saxton, 1997). *Second*, as finding contact information of foreign firms is difficult, it acted as a barrier to their participation in the study (Saxton, 1997).

Prowess Release 3.1 database from the Centre for Monitoring Indian Economy (CMIE) was used to identify the firms of the five targeted sectors. This database is being increasingly employed by strategy scholars (e.g., Chacar & Vissa, 2005; Khanna & Palepu, 2000; Khanna & Rivkin, 2001) for conducting research in strategic management in Indian context. In addition, data was also collected from unlisted private firms.

To ensure non-response bias, ideally the universe of the study should be enumerated, which in this case was the population of all alliance managers associated with alliances considered in the study, and then draw a random sample from this population (Lambe et al., 2002). However, it is a virtually impossible to enumerate such a universe of alliance

managers because no such comprehensive database for alliances exists, let alone of alliance managers (Lambe et al., 2002). Thus, we adopted Lambe et al.'s (2002) procedure for collection of data where we first identified a sample of managers, including CEOs, who, we expected to cooperate, and then pre-screened them for alliance responsibilities such as experience in initiating, negotiating, managing or disengaging from alliances. A random sample of these business executives was used as a seed sample. These business executives were further asked to provide names of 3-5 colleagues who also have alliance responsibilities and experience. Thus, a snow-ball type of sampling technique was used for identifying the informants. We adopted 'key informant' approach to collect the data as the key informants are expected to have knowledge about alliance level capabilities and alliance governance structures (Campbell, 1955; Philips, 1981).

We collected the data in three phases: (i) field interviews during the exploratory stage and pre-test; (ii) pilot study; and (iii) final field survey administration. Before the pre-test, interviews were conducted in November, 2011 with two alliance managers and two academic researchers who were involved in alliance studies. This helped in improving the instrument. Subsequently, 20 alliance managers were contacted for the pre-test; 8 responded and 5 of them also shared the names of their alliance partners, 2 of whom agreed to participate in the pre-test. The pre-test was, thus, administered to 10 alliance managers. After completing the pre-test, detailed interviews were conducted with them. Based on their inputs, guidelines for the informants and format of the survey were finalized. The pre-test also helped in identifying the protocol through which the informants could be contacted for data collection..

For the pilot study, data was collected from December, 2011 to February, 2012 using two methods - web-enabled survey and through e-mail. A total of 488 surveys were released. Finally, 172 responses from 64 firms were received with 156 responses found usable yielding a response rate of approximately 32%. Out of the 16 unusable surveys, 4 were discarded because they were not filled-up by the key informants, 6 were discarded because the age of alliance was less than 2 years, 2 were discarded because the alliance had multiple partners and 4 were discarded because there were too many missing values.

Since governance mechanisms in an alliance is influenced by each partner's behaviour in the relationship, researchers recommend collection of data from both partners as it helps in capturing the complete picture of alliance governance mechanisms (Anderson, Zerrillo, and Wang, 2006). Therefore, we attempted to collect data from both alliance partners during the pilot study stage. However, out of the 64 firms (total 156 responses) which participated in the pilot study only 21 firms revealed the name of their alliance

partners. When these 21 firms were contacted, only 8 of them agreed to participate in the study. Therefore, owing to the difficulties in collecting data from both the alliance partners, we adopted 'proxy-report' approach (Menon, Bickart, Sudman, and Blair, 1995: 77), where informant answers questions on behalf of the dyadic alliance, and collected data from only one partner in the final field study. The data collected during the pilot study was subjected to various purification tests in accordance with Hair et al. (1998). Thereafter, dimensionality and reliability was assessed using EFA and Cronbach's alpha test, respectively.

Then we collected data for the final field study in March-May, 2012. The survey instrument briefly introduced prospective informants to the objectives of the study, and categorically advised them to keep a particular dyadic relationship in mind while completing the instrument. Since the unit of analysis was a dyadic alliance and not a firm, and a firm may have entered into multiple alliances with the same partner or with different partners, a firm was competent to complete surveys for more than one alliance. Therefore, multiple surveys were released to a firm. However, the survey required the queried firm to identify 2 persons for each alliance having relevant experience of the alliance, and each person should complete it independently. Final survey was sent to 1601 executives of 298 firms of five sectors. Among 1601 executives, 858 executives intimated that they would not like to participate in the study as they did not have adequate alliance knowledge. Out of the remaining 521 completed surveys, 74 were not usable leaving 447 usable surveys, yielding a response rate of 27.92%.

A total 155 firms participated in the final field study, which included 42 pharmaceutical firms, 33 information technology firms, 29 telecommunication firms, 27 power & energy firms and 24 steel firms. There was a wide variability in the net sales turnover of the participating firm with minimum 0.20 million USD to maximum 66800 million USD, mean 5268.12 million USD with SD 12819.1.

3.2 Measures

The study uses multi-item scales for dependent and explanatory variables, with each item measured using a 7-point Likert type scale.³

³ The scale items used in the study are provided in Appendix I. .

3.2.1 *Dependent variables*

Contractual-based governance. Contractual-based governance is a higher-order construct, and is indicated by two-lower order constructs: (i) nature of contract; and (ii) formal protection mechanism. Nature of contract measures the degree of complexity of contracts and we adapt the scale developed by Hagedoorn and Heslen (2009) to measure it. Formal protection mechanisms are those arrangements which are based on property rights and contractual agreements and we adapt 6 items from the scale developed by Müller (2010) to measure it.

Relation-based governance. We measure relation-based governance by using reflective scales developed by Morgan and Hunt (1994), with Relationship Commitment having 5 items, Trust having 6 items, and Partner Communication having 4 items. We measure cooperation by using Cannon and Perreault's (1999) 5 item reflective scales.

3.2.2. *Explanatory variables*

Alliance capability is a higher-order construct indicated by four lower-order constructs: (i) partner identification propensity (PIP); (ii) alliance experience (AE); (iii) alliance management practices (AMP); and (iv) alliance manager capability (AMC). We measure PIP, AE and AMC by using Lambe et al.'s (2002) scale. We measure AMP by adapting Lavie's (2004) scale.

3.2.3. *Moderating variables*

The respondents were asked to categorize behaviour of the alliance partners in following categories: (i) only cooperation (ii) low cooperation – low competition; (iii) high cooperation – high competition; (iv) low cooperation – high competition; and (v) high cooperation – high competition. Since the cases of only cooperative behaviour are not relevant in the context of IASCC, such cases have been deleted from the analysis. The remaining four behaviour types are operationalized as the context of IASCC using a dummy variable for each behavioural context coded as '1' when the alliance reflected that behavioural situation and '0' otherwise.

3.2.4. Control variables

We controlled for the effect of firm size, industry sector and firm age to isolate the effect of firms' alliance capabilities. Firm size is measured as natural log of annual sales turnover. Prior research suggests that firm size may influence bargaining capacity of alliance partners, thus affecting alliance governance structures. Larger firms can access low-cost capital, benefit from economies of scale (Gulati, 1995). Isolating the effect of firm size particularly critical as they may typically have more alliance experience, engage in larger number of alliances (Hagedoorn and Schakenraad, 1994), and assign greater financial and human resources for alliance management (Gulati, 1995; Kale et al., 2002). We also controlled the impact of firm's age, measured in years, in order to isolate the impact of alliance capabilities as prior research has shown that age can positively impact alliance experience, a dimension of firm's alliance management capabilities (Rothaermel & Deeds, 2006). Finally, we also controlled for industry effects because governance structures may be influenced by industry structures (Das and Teng, 2002).

4. DATA ANALYSIS AND RESULTS

4.1 Preliminary analysis

The univariate approach of Hair, Anderson, Tatham, and Black (1998) was adopted to detect outliers. Little's (1988) MCAR test showed that data was found to be missing completely at random. Following Newman (2003), completed questionnaires with more than 10% missing values were excluded, and the remaining missing values were imputed using series mean. Following Armstrong and Overton's (1977) approach, non-response bias among the informants was examined by comparing early with late informants assuming that late informants are more similar to non-informants on all the variables in the model. The results indicated that there was no evidence of any obvious non-response bias.

To assess the degree to which common method bias might present a problem, we used two statistical methods to check common method variance (CMV). *First*, we conducted Harmon one-factor test (Podsakoff & Organ, 1986). The results of the un-rotated factor solution showed that the extracted factor explained only 27.23% (< 50%) of the variance. Since no single dominant factor emerged, we assumed that CMV did not affect the significance of the relationships (Scott & Bruce, 1994). *Second*, we conducted the common latent factor method (Williams & Anderson, 1994), a more robust test, by adding a latent factor to the confirmatory factor analysis (CFA) model, connecting it to all observed items in

the model, and then constraining the regression weights of the paths from this common latent factor to all the observed variables as equal. The unstandardized regression coefficients from the common latent factor were 0.14. The square of these unstandardized regression coefficients from the common factor is approximately 1.6%, which is the common shared variance, suggesting that there was no problem of CMV in the data.

4.2 Scale validity and reliability

We first conducted analyses separately for each first-order construct of our study. The exploratory factor analysis (EFA) results indicated adequate reliability and unidimensionality of the scales. Then, confirmatory factor analysis (CFA) was carried out to evaluate the measurement models of the constructs. The fit indices for each of the measurement models were within the acceptable limits and are presented in Table 1.

Cronbach's α , composite reliabilities (CR), and average variances extracted (AVE) are indicative of a reliable and valid measurement of the individual factors. Table 2 shows that reliabilities of all the first order constructs are above the 0.70 level set by Nunnally (1978). Therefore, the scales demonstrate internal reliability. Similarly, the composite reliability of all the first order constructs is above 0.60 level (Bagozzi, Yi, and Phillips, 1991). Following Fornell and Larcker (1981), we assessed the discriminant validity of the measures of the constructs. We found that the average variance extracted by the measure of each construct is larger than the squared correlation of that construct with other constructs. AVE was above 0.5 (Fornell and Larcker, 1981) for all the constructs. Thus, the high AVE coupled with the strengths and significances of the parameter estimates of each of the reflective scales provide evidence of convergent validity (Cannon & Perreault, 1999). The results further show that $AVE > ASV$ (average share variance) and $AVE > MSV$ (maximum shared variance) for each construct. Thus, above tests provide evidence of discriminant validity.

TABLE 1
Model Fit Indices of the First-Order Constructs

Construct	Dimensions	df/ χ^2	P value	GFI	NFI	TLI	CFI	RMSEA	SRMR
Alliance capability	Partner identification propensity	2.873	0.022	0.989	0.99	0.983	0.993	0.066	0.017
	Alliance experience	4.578	0.001	0.984	0.986	0.972	0.989	0.091	0.023
	Alliance manager capability	4.416	0.036	0.995	0.997	0.987	0.998	0.089	0.007
	Alliance management practices	0.895	0.443	0.998	0.998	1.001	0.994	0.061	0.007
Contractual-based governance	Nature of contract	3.375	0.034	0.992	0.991	0.98	0.993	0.074	0.016
	Formal protection mechanism	1.959	0.047	0.988	0.989	0.99	0.995	0.044	0.018
Relation-based governance	Relationship commitment	2.793	0.039	0.993	0.996	0.992	0.998	0.064	0.008
	Trust	1.414	0.185	0.991	0.996	0.998	0.999	0.031	0.008
	Partner Communication	3.909	0.048	0.996	0.997	0.989	0.998	0.082	0.005
	Cooperation	2.228	0.063	0.992	0.994	0.992	0.997	0.053	0.016

TABLE 2
Reliability and Validity of the First Order Constructs

	Crobach's α	CR	AVE	MSV	ASV	1	2	3	4	5	6	7	8	9	10	
1	PIP	0.871	0.883	0.657	0.435	0.151	0.811									
2	AE	0.767	0.804	0.585	0.275	0.064	0.524	0.765								
3	AMC	0.945	0.940	0.797	0.373	0.195	0.404	0.366	0.893							
4	AMP	0.945	0.919	0.696	0.521	0.216	0.517	0.296	0.601	0.811						
5	CBG	0.859	0.846	0.583	0.479	0.219	0.311	0.037	0.447	0.487	0.763					
6	FPM	0.863	0.894	0.589	0.269	0.146	0.451	0.217	0.437	0.442	0.507	0.768				
7	RC	0.912	0.949	0.790	0.714	0.276	0.448	0.239	0.520	0.582	0.581	0.311	0.889			
8	T	0.906	0.948	0.754	0.702	0.240	0.409	0.228	0.441	0.531	0.495	0.269	0.521	0.866		
9	CM	0.802	0.938	0.792	0.711	0.266	0.481	0.224	0.526	0.548	0.502	0.314	0.740	0.656	0.890	
10	COOP	0.863	0.902	0.656	0.650	0.253	0.485	0.250	0.500	0.626	0.551	0.355	0.438	0.409	0.388	0.810

We subsequently tested the proposed structure of the alliance capability construct and contract-based governance by means of second-order confirmatory factor analysis (Byrne, 2001). As mentioned, alliance capability is the second-order construct of four lower order constructs: (i) partner identification propensity (PIP); (ii) alliance experience (AE); (iii) alliance management practices (AMP); and (iv) alliance manager capability (AMC). Similarly, contract-based governance is the second-order construct of two lower order constructs: (i) nature of contract (NC); and (ii) formal protection mechanism (FPM). We examined the loadings of the second-order constructs - alliance capability and contract-based governance - on their respective lower order dimensions. These loadings are presented in Table 3.

TABLE 3
Factor Loadings of the Second-Order Constructs on its Lower Order Dimensions

First-order construct	Second-order construct	Path coefficient
Partner Identification Propensity (PIP)	←	0.957
Alliance Experience (AE)	← Alliance capability (AC)	0.793
Alliance Manager Capability (AMC)	←	0.674
Alliance Management Practices (AMP)	←	0.837
Nature of contract (NC)	← Contract-based governance (CBG)	0.868
Formal Protection Mechanism (FMP)	←	0.892

The global fit criteria indicate a good overall model fit for the measurement model of the second-order construct alliance capability: $\chi^2/df = 1.852$, GFI = 0.958, NFI = 0.971, TLI = 0.981, CFI = 0.986, RMSEA = 0.044, SRMR = 0.033. Similarly, global fit criteria indicate a good overall model fit for the measurement model of the second-order construct contractual-based governance: $\chi^2/df = 3.386$, GFI = 0.918, NFI = 0.907, TLI = 0.906, CFI = 0.926, RMSEA = 0.048, SRMR = 0.073. The target coefficient index (T) clearly exceeds the required minimum value of 90% and demonstrates that a large portion of the variance within the first-order factors can be explained through the second-order construct (Marsh and Hocevar, 1985).

In summary, the results underline the reliability and validity of the measurement of alliance capability and contractual-based governance as a four-dimensional and two-dimensional construct, respectively.

4.3 Hypothesis testing

Table 4 shows the descriptive statistics including means, standard deviations and inter-correlations among the study variables. We observe that all the four variables indicating alliance capabilities are significantly correlated with the variables indicating relation-based governance and contract-based governance. Also, the contract-based governance variables and relation-based governance variables are positively correlated with each other indicating that both these governance mechanism reinforce each other. Thus, both these governance mechanisms are not substitutes of each other but complement each other. This is in line with earlier studies (Lee and Cavusgil, 2006; Poppo and Zenger, 2002). At the same time, it provides the insight that strategic choices vis-à-vis governance structures in different strategic situations are not independent choices.

We then used structural equation modelling (SEM) to test our hypotheses since it enabled us to test all the proposed hypotheses at the same time by simultaneously estimating multiple, dependent relationships between the variables of this study. We chose the SEM approach as it allows estimating the measurement and structural sub-models simultaneously (Bollen, 1989). The measurement model uses confirmatory factor analysis to assess the validity and reliability of the scales used to measure the constructs, whereas the structural model estimates the strength and direction of relationships between them (Anderson and Gerbing, 1988; Hair et al., 1998). In addition, SEM allows measurement of latent variables of higher order by considering lower order latent variables (Hu & Bentler, 1995). The overall model fit was assessed using the criteria of chi-square/degrees of freedom, Goodness of Fit Index (GFI), Normed Fit Index (NFI), Tucker Lewis Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation Index (RMSEA) and Standardized Root Mean Square Residual (SRMR) (Hu & Bentler, 1995). For Chi-square statistics, a value of less than 5 is considered as acceptable, and for GFI, NFI, TLI and CFI, a minimum value of 0.90 is regarded as acceptable. Similarly, for RMSEA and SRMR, values up to 0.1 and 0.08, respectively, are considered as acceptable.

TABLE 4
Means, Standard Deviations, Correlations

		Mean ^a	SD	1	2	3	4	5	6	7	8	9	10
1	PIP	5.63	1.03	1									
2	AE	4.97	1.2	.31**	1								
3	AMC	4.86	1.17	.37**	.29**	1							
4	AMP	5.42	0.94	.48**	.25**	.56**	1						
5	CBG	5.53	0.79	.25**	0.08	.43**	.45**	1					
6	FPM	5.37	0.93	.40**	.20**	.42**	.44**	.50**	1				
7	RC	5.61	1.02	.41**	.19**	.49**	.55**	.52**	.33**	1			
8	T	5.52	1.02	.40**	.19**	.42**	.52**	.82**	.29**	.82**	1		
9	CM	5.62	1.02	.43**	.17**	.50**	.51**	.81**	.78**	.81**	.78**	1	
10	COOP	5.43	0.91	.41**	.19**	.46**	.55**	.84**	.85**	.84**	.85**	.84**	1

**Correlation is significant at the 0.01 level (2-tailed); Means and standard deviations are calculated using the average of each person's responses for each construct

To test the hypotheses, we merged the measurement models of alliance capability, contract-based governance and relation-based governance, and the control variables into a structural model. Then we examined the fit measures and path coefficients of the hypothesized structural equation model shown in Figure 1. First the fit measures of the hypothesized model were examined. Our analysis shows that our hypothesized model fits the data very satisfactorily ($\chi^2/df = 1.458$; GFI = 0.9, NFI = 0.941, TLI = 0.975, RMSEA = 0.032, and SRMR = 0.049). Thus, these fit measures exhibit a high level of overall model fit (Hair et al., 2012).

The results of the hypotheses testing are presented in Table 5. As far as structural parameters are concerned, we observed the following: (i) alliance capability is significantly related ($p < 0.001$) to contract-based governance and the standardized path coefficient is (0.771). The positive significant relation between alliance capability and contract-based governance provide support for H1(a); and (ii) Alliance capability is significantly related ($p < 0.01$) to relation-based governance and the standardized path coefficient is (0.241). The positive significant relation between these two variables provide support for H1(b). The relation-based governance mechanisms involve tacit components, are more difficult, take more time to develop and require a wider range of capabilities. This may partly explain the smaller size of the impact of alliance capabilities on relation based governance as compared to its impact on contract based governance.

To test the moderating effect of different strategic contexts (HH, HL, LH, and LL) on the relationship between alliance capability and governance mechanisms, relevant latent variables with interaction between alliance capability indicators and the strategic context were introduced in the model. The results of this analysis showed the following:

- (i) The latent variable HH x Alliance capability is positively and significantly related ($p < 0.05$) to contract-based governance and the standardized path coefficient is (0.236). The latent variable HH x Alliance capability is positively and significantly related ($p < 0.05$) to relation-based governance also and the standardized path coefficient is (0.143). This supports the hypotheses (H2a and H2b) that HH positively moderates the relationship between both alliance capability and contract-based governance and between alliance capability and relation-based governance;
- (ii) The latent variable HL x Alliance capability is significantly related ($p < 0.05$) to contract-based governance and the standardized path coefficient is (-0.174). The negative significant relationship supports the hypothesis H3a that HL negatively moderates the relationship between alliance capability and contract-based governance.

Also, the latent variable HL x Alliance capability is positively and significantly related ($p < 0.05$) to relation-based governance and the standardized path coefficient is (0.152). This supports the hypothesis H3b that HL positively moderates the relationship between alliance capability and relation-based governance;

- (iii) The latent variable LH x Alliance capability is significantly related ($p < 0.05$) to contract-based governance and the standardized path coefficient is (0.136). The positive significant relationship supports the hypothesis H4a that LH positively moderates the relationship between alliance capability and contract-based governance. Also, the latent variable LH x Alliance capability is significantly related ($p < 0.05$) to relation-based governance and the standardized path coefficient is (-0.176). The negative significant relationship supports the hypothesis H4b that LH negatively moderates the relationship between alliance capability and relation-based governance.
- (iv) The latent variable LL x Alliance capability is significantly related ($p < 0.01$) to contract-based governance and the standardized path coefficient is (-0.21). Also, the latent variable LL x Alliance capability is significantly related ($p < 0.001$) to relation-based governance and the standardized path coefficient is (-0.607). This supports the hypotheses (H5a and H5b) that LL negatively moderates the relationship between both alliance capability and contract-based governance and between alliance capability and relation-based governance.

The results presented in Table 6 take into account of the effect of control variables firm size, firm age, and industry effect. The specific effects of control variables are reported separately in Table 6. Firm size is significantly related with contract-based governance, while firm age is significantly related with all three variables. However, the magnitude of the relationships in both the cases is negligible. The industry has very little impact on the three variables.

TABLE 5
Path Coefficients of the Structural Model

	Explanatory variable(s)	Dependent variable	Standardized path coefficient
H1(a)	+ Alliance capability	→ Contract-based governance	0.771***
H1(b)	+ Alliance capability	→ Relation-based governance	0.241**
H2(a)	+ HH x Alliance capability	→ Contract-based governance	0.236*
H2(b)	+ HH x Alliance capability	→ Relation-based governance	0.143*
H3(a)	- HL x Alliance capability	→ Contract-based governance	-0.174*
H3(b)	+ HL x Alliance capability	→ Relation-based governance	0.152*
H4(a)	+ LH x Alliance capability	→ Contract-based governance	0.136*
H4(b)	- LH x Alliance capability	→ Relation-based governance	-0.176*
H5(a)	- LL x Alliance capability	→ Contract-based governance	-0.216**
H5(b)	- LL x Alliance capability	→ Relation-based governance	-0.607***

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

TABLE 6
Effect of Control Variables

	Alliance capability	Contract-based governance	Relation-based governance
Firm size	-0.02	0.06*	0.01
Firm age	0.09**	0.07**	0.06*
Telecommunication	0.01	0.02	0.07 *
Information Technology	0.05*	0.03	0.01
Power and Energy	-0.04	-0.08*	-0.02
Steel	-0.03	-0.01	0.07 *

*p < 0.10

5. DISCUSSION

The results indicate that the strategic context of *high cooperation-high competition* positively moderates the relationship between alliance capability and contract based governance. Typically, firms which are engaged in competition with each other realize the need to cooperate with each other, and this subsequently leads to cooperation (Peng and Bourne, 2009). This is characteristic of high cooperation and high competition alliances as they enter into alliances after recognizing the benefits of cooperating with each other. Since the cooperation is in the context of high competition, alliance capabilities are more strongly oriented towards developing contract-based mechanisms of governing the alliance. The perceived sense of competition affects the exchange among alliance partners (Lee, Feiock and Lee, 2012). Thus, in the context of an increased sense of competition, alliance partners feel the need to use alliance capabilities to strengthen contract-based norms.

The results also indicate that the strategic context of *high cooperation – high competition* also moderates the relationship between alliance capabilities and relation-based governance positively. When firms which are strong competitors also decide to cooperate with each other, then a pooling of resources takes place. This can lead to outcomes where certain investments, like in R&D which were earlier risky now become safe (Besanko and Wu, 2013), which in turn facilitate commitment of more resources and building innovation capabilities (Gnyawali and Park, 2009). In addition, high degree of cooperation among the alliance partners not only facilitates greater learning, technological progress and market expansion but also helps in reducing the costs, risks, and uncertainties associated with innovation or new product development (Luo, 2004). Consequently, in *high cooperation –*

high competition contexts, a lot of attention is paid towards the utilization of alliance capabilities to strengthen relation-based governance mechanisms.

Depending on the nature of the competition, firms can decide the nature of cooperative relationships they can enter into (Ostbye and Roelofs, 2013). If the competition between firms is low, then there is an incentive to enter into high cooperation relationships, if the cooperation is expected to yield significant benefits in areas like innovation, new product development, etc. Since the competition between these firms is low, elaborate contract based governance mechanisms are not required. Results of this study indicate that the *low competition – high cooperation* strategic context negatively moderates the relationship between alliance capabilities and contract-based governance. This means that firms in such relationships do not focus on using alliance capabilities for better contract-based governance.

Cooperation with competitors has been known to lead to two kinds of benefits (Peng, Pike, Yang, and Roos, 2012): (i) higher performance than what would have been otherwise possible; and achievement of higher performance in quicker time. Our study indicates that perhaps to achieve these objectives, in the context of *high cooperation – low competition*, firms forge close relations with each other to improve their performance. They focus on using capabilities to strengthen relation-based governance mechanisms to a greater extent in order to exploit the learning potential of co-operation. In managerial decision making processes involving cooperation and competition, fair play and trust play an important role (Berg, 2010). Relation-based governance attributes are helpful in incorporating these elements in the functioning of an alliance. In a *high cooperation – low competition* context, achieving high sense of trust is relatively easy as competition based rivalry is relatively weak.

In the context of knowledge and information sharing, cooperation has several advantages such as acquisition of technological capabilities, shortening development time and spreading risk and cost (Deck and Erkal, 2013). But in *low cooperation – high competition* contexts, it is difficult to realize these benefits. In such alliances, the investments that firms may make for knowledge sharing purpose may not yield optimal returns. In our study, we find that this apprehension leads to alliance partners focusing on developing higher level of contract-based governance mechanisms in such contexts. Firms do this so that alliance partners can be made accountable to keep up to the commitments they have contractually agreed to. It has been argued that in the context of changes in the environment, competitors who cooperate in areas such as integrated supply chain systems are likely to be more effective than firms acting alone (Wu and Sarker, 2013). Competing firms in our study

also adopted this logic, and focused on using alliance capabilities to build contracts so that common objectives of competing partners could be met.

The results indicate that the strategic context of *low cooperation – low competition* negatively moderates the relationship between alliance capability and relation-based governance. In the context of low competition, the deployment of alliance capabilities for building contract-based governance is not important as there are few conflicts between the alliance partners. Since the context is that of low cooperation, the incentive for alliance partners to build a higher degree of relation-based governance does not exist. It has been seen that in markets with closely matched competitors, collaboration is not likely (Mantena and Saha, 2012). Therefore, alliance partners do not focus on utilizing alliance capabilities which can lead to enhancement of relation-based governance mechanisms. But when the sense of competition is also low, then the commitment of the partners to the alliance tends to be low. The internal resources of firms are more important determinants of how firms absorb external resources and this influences the flexibility of a firm (Lin, Yang, and Demirkan, 2007). However, when firms sense a mismatch between external and internal resources, then the strategic context may be one of *low cooperation – low competition* and they may simply be exploring whether some gains can be obtained from the alliance. Deliberate learning mechanisms are needed to translate alliance experience into alliance capability which can then be usefully deployed (Zollo and Winter, 2002). In the context of *low cooperation – low competition*, firms may not feel the need to put in place these learning mechanisms and therefore their capabilities influence relation-based governance mechanisms to a lesser extent. Also, the sense of low competition may imply that firms do not feel the necessity to engage in learning races with each other. Thus, in this strategic context, alliance partners also do not feel the need to utilize capabilities to strengthen contract-based governance mechanisms.

On the basis of our empirical results and the conceptual discussion the circumstances and the impact of the strategic contexts on the relationship between the alliance capabilities and governance structures are summarized in Table 7.

TABLE 7
Impact of Strategic Context on the Alliance Capability and Governance Structure

Strategic Context	Reasons for such a situation to arise	Needs of the governance structure	Impact of Alliance Capability on Governance Structure	
			Relation-based governance	Contract-based governance
High cooperation-high competition	High technological uncertainty and convergence, high market commonality, and high resource complementarity	Enhance benefits of cooperation through relation-based governance and reduce apprehensions and transaction costs through contract-based governance.	Moderates positively	Moderates positively
High cooperation-low competition	High resource complementarity/asymmetry and low market commonality	Enhance benefits of cooperation through relation-based governance. Over reliance on contract-based mechanisms may be counterproductive	Moderates positively	Moderates negatively
Low cooperation-high competition	High product/resource similarity, low resource interdependence and high market commonality (Oligopolistic competition)	Relation-based governance mechanisms may be desirable to enhance cooperation but may not be feasible due to short-term nature of alliance and limited cooperation. Focus on contract-based structures to reduce apprehensions, spillovers and hold-up possibilities	Moderates negatively	Moderates positively
Low cooperation-low competition	Low resource complementarity and low market commonality (Monopolistic competition)	Investments on relation-based governance and contract-based governance are counterproductive due to low learning possibilities and low rivalry	Moderates negatively	Moderates negatively

6. CONCLUSION

IASCC are useful from the perspective of acting as networks where different actors in the value chain can come together. Given the context of simultaneous cooperation and competition, the governance of IASCC assumes importance. The strategic context of the IASCC influences how alliance capability influences the governance mechanisms. A study of this influence provides us insights about the relative importance of governance mechanisms for different strategic contexts. It provides us insights about how alliance capabilities affect the functioning of the alliance and thereby enable alliance managers to focus on developing these capabilities effectively. It is not only the development of capabilities that needs to be understood but also their effective deployment.

Appropriate governance mechanisms help in integrating the resources of the alliance partners and improving the quality of interaction between them. Both contract-based and relation-based governance mechanisms are important for the effective functioning of alliances. However, in different strategic contexts, the relative importance of these governance mechanisms may vary and, therefore, firm's alliance capabilities are used to build an appropriate mix of governance mechanisms for different contexts. In this study, we attempted to discern how firms deploy their capabilities in different strategic contexts to build necessary governance mechanisms.

The resources and potential that alliance partners bring is not an adequate guarantee of their success. The governance mechanism is a platform through which the resource and knowledge commitments of different partners are guaranteed. The governance mechanism also draws boundaries which ensure the protection of core knowledge within the firm. The strategic context interacts with alliance capabilities in the development of governance mechanisms. Once firms understand this interaction, they may be able to make appropriate interventions in how their capabilities impact governance. Also, given the impact of capabilities on governance, and the optimum forms of governance desired, the optimum degree of capabilities can also be determined. Also, the impact of the strategic context on the relationship between capabilities and governance demonstrates that both cooperation and competition introduce complexities in the functioning of IASCC.

Our study also suffers from a few limitations, which provide promising opportunities for future research. The empirical test of our hypothesized model is limited to the context of high-technology research-intensive sectors. Such sectors may contribute to alliance governance structures in a different manner than the alliance governance mechanisms in other type of industries. Therefore, future studies should apply our hypothesized model to other industrial sectors also. Besides, this study focusses only on the examination of the moderating effect of strategic contexts on relationship between alliance capabilities and governance structures. Future studies may also consider potential moderators such as the environmental turbulence. Another limitations of our study is the focus only on the dyadic alliances as the unit of analysis. However, in the present business context, most firms engage in multiple simultaneous alliances with different partners and manage complex alliance portfolios, which are far more challenging than managing a dyadic alliance (Anand & Khanna, 2000; Dyer et al., 2001). Therefore, researchers may endeavor to extend the hypothesized model to examine the governance structures that might emerge during the management of multiple simultaneous alliances with different partners.

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APPENDIX 1

Nature of contract

- CBG1** The terms of the contract are simple and effective.
- CBG2** The advantages of the terms of the contract are worth the effort that both my partner and I have invested.
- CBG3** The length of the contract adequately meets the objectives of the agreement.
- CBG4** Duties and obligations of each partner are detailed and described in the contract.
- 4 items reflective Scale, adapted from Hagedoorn and Hesens (2009) [1=Very Strongly Disagree; 7=Very Strongly Agree]*

Formal protection mechanism

In our agreement with the partner, we have:

- FPM1** ... stipulated the division of cooperative outcomes (such as utilization, distribution, rights) and also the division of costs.
- FPM2** ... defined which information and data are the exclusive property of each partner and which information and data are a common property of the alliance.
- FPM3** ... clearly defined the information and skills that partners must share with each other and those that they need not share with each other.
- FPM4** ... stipulated comprehensive confidentiality obligations that partners can enforce on each other.
- FPM5** ... clearly defined sanctions to be imposed for contract violations.
- FPM6** ... secured our property rights related to the resources and knowledge available to the partner.
- 6 items reflective Scale, adapted from Müller (2010) [1=Very Strongly Disagree; 7=Very Strongly Agree]*

Relationship commitment

Both my alliance partner and I view our relationship as:

- RC1** ... something we are very committed to.
- RC2** ... very important to our firms.
- RC3** ... something our firms intend to maintain indefinitely.
- RC4** ... something our firms really care about.
- RC5** ... deserving our firms' maximum efforts to maintain.
- 5 items reflective Scale, adopted from Morgan and Hunt (1994) [1=Very Strongly Disagree; 7=Very Strongly Agree]*

Trust

In our relationship, both my alliance partner and I:

- T1** ... are honest and truthful.
- T2** ... can be counted on to do what is right.
- T3** ... have confidence in each other.
- T4** ... have high integrity.
- T5** ... are not reliable.^b
- T6** ... are trustworthy.
- 6 items reflective Scale, adopted from Morgan and Hunt (1994) [1=Very Strongly Disagree; 7=Very Strongly Agree]*

Partner communication

In our relationship, the interaction between me and my partner:

- CM1** ... apprise each other of new developments in timely and accurate manner.
- CM2** ... is open, helpful and without reservation.
- CM3** ... takes place regularly to effectively compare current performance against expectations.
- CM4** ... is adequate to credibly discuss issues relating to utilization of common resources.
- 4 items reflective Scale, adapted from Morgan and Hunt (1994) and Mohr and Spekman (1994) [1=Very Strongly Disagree; 7=Very Strongly Agree]*

Cooperation

- Coop1** Both we and our partner are willing to cooperate.
- Coop2** We work together to be successful.
- Coop3** Both my partner and I try to accommodate each other when making decisions that affect mutual outcomes.
- Coop4** People from our organizations do not work together well.^b
- Coop5** Both my partner and I look for new opportunities to work together.

5 items reflective Scale, adopted from Cannon & Perreault (1999) [1=Very Strongly Disagree; 7=Very Strongly Agree]

Partner identification propensity

- PIP1** We actively search for promising alliance partners.
- PIP2** We actively seek alliances that can help our business.
- PIP3** We are constantly seeking partnering opportunities.
- PIP4** We are always looking for firms that we can partner with to jointly develop competitive advantage.

4 items reflective Scale, adopted from Lambe et al. (2002) [1=Very Strongly Disagree; 7=Very Strongly Agree]

Alliance experience

- AE1** We have a deep base of partnership experience.
- AE2** We have participated in many alliances with this partner.
- AE3** We have been partners in a substantial number of alliances.
- AE4** We have an understanding of behaviours which lead to long term sustainability in an alliance.

4 items reflective Scale, items 1, 2 and 3 adopted from Lambe et al. (2002); item 4 added by us as it captured aspects of long-term commitment [1=Very Strongly Disagree; 7=Very Strongly Agree]

Alliance manager capability

- AMC1** We have programs to develop capable alliance managers
- AMC2** We understand how to produce effective alliance managers
- AMC3** We effectively train competent alliance managers
- AMC4** We know how to identify effective alliance managers

4 items reflective Scale, adopted from Lambe et al. (2002) [1=Very Strongly Disagree; 7=Very Strongly Agree]

Alliance management practices

Our corporate management performs the following alliance management activities:

- AMP1** Has developed and disseminated corporate and division guidelines, procedures and manuals for alliance management.^a
- AMP2** Leads and supports alliance initiatives.
- AMP3** Considers alliances in budgeting and resource allocation decisions.
- AMP4** Coordinates between internal activities and alliance activities.
- AMP5** Facilitates interaction between the alliance and internal units.
- AMP6** Ensures that its alliance management practices are uniformly assimilated across its internal units.

5 items reflective Scale, adopted from Lavie (2004) [1=Very Strongly Disagree; 7=Very Strongly Agree]