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# **Knowledge development, social capital and alliance**

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## **Abstract**

**Purpose** – The purpose of this paper is to elucidate information on what creates the different types of knowledge.

**Design/methodology/approach** – In the conceptual model it is argued that the concept of social capital provides an interesting view on the creation of market-specific and firm-specific knowledge.

**Findings** – The major finding from the paper is that knowledge is an important by-product of an alliance forming process, a process commonly termed as alliance learning.

**Research limitations/implications** – Both market-specific and firm-specific knowledge have implications on two main types of alliance learning, that of mutual and non-mutual learning.

**Practical implications** – Alliance managers need to be aware that knowledge is a key driver as well as a beneficial outcome in the formation of alliances.

**Originality/value** – This paper examines how the different types of knowledge evolve and how these different types of knowledge impact upon alliance learning.

## **Keyword(s):**

Learning; Knowledge management; Social capital.

## **Introduction**

There is a growing amount of research dedicated to examining learning within organizations (e.g. Argyris and Schon, 1978; Huber, 1991) as well as learning between organizations (e.g. Inkpen, 1998; Kumar and Nti, 1998). Recent studies have noted that inter-organizational learning is the more preferable route to effective and efficient organizational capability development (Dyer and Singh, 1998; Lane and Lubatkin, 1998). The nature of organizations as social communities (Kogut and Zander, 1992, 1996) further encourages this tendency for organizations to learn from their partners, customers, suppliers, and competitors. They can quickly jump onto the bandwagon of other firms' experience, making the learning process more efficient and effective.

In this paper, we focus on inter-organizational learning through alliances, which is the most popular mode of new market penetration (Lane and Beamish, 1990). We adopt a broad definition of alliances in this paper, in that an alliance is considered to any type of cooperative agreement between two or more firms that involves the sharing of knowledge. This definition of alliances includes marketing agreements, R&D collaboration, technology alliances, logistics alliances and joint ventures. The broad definition of alliances allows us to examine the process of learning in a wider context of alliances.

Learning involves an acquisition of knowledge (Argyris and Schon, 1978; Fiol and Lyles, 1985). Notwithstanding the substantial research on organizational learning and alliance learning, there is still a lack of understanding on how different types of knowledge are developed through the process of interactions between actors. We use social capital theory to explain the development of these different types of knowledge. To our knowledge, there has been no prior work on social capital that has examined the linkage between social capital and the development of different types of knowledge in the context of alliances.

A further motivation of this paper is the lack of research that has examined the impacts of different types of knowledge on alliance learning. The literature on organizational learning and knowledge has devoted greater attention to knowledge creation as one of the outcomes of an alliance, a process commonly termed alliance learning. In this paper, we discuss the role of market-specific and firm-specific knowledge as different types of knowledge and their impacts on alliance learning. Two learning outcomes are examined – mutual and non-mutual learning – that can occur in alliances.

We first elaborate on the theoretical foundations of social capital and summarize current studies of this subject. Second, the literature on alliance learning is examined on the differences between mutual and non-mutual learning. Third, the paper addresses the gap in the literature by discussing the link between the different types of knowledge – market-specific and firm-specific knowledge – and their impacts on the mutual and non-mutual types of alliance learning. Our conceptual framework reveals how the different types of knowledge are developed and how both types of knowledge influence the types of alliance learning. Finally, we discuss the implications of our work and provide several suggestions for future research.

### **Social capital theory**

The concept of “social capital” is an addition to interpersonal capital theories, which also include human capital theory (Watson and Papamarcos, 2002). Proponents of human capital theory emphasize the importance of human beings as the repositories of knowledge (Becker, 1962; Watson and Papamarcos, 2002). Humans are the beneficiaries of transactions. Individuals invest in the acquisition of skills and expertise that can benefit them in the market. Essentially, human capital theory focuses on the investment in skills and education that people make, and looks at the returns on this investment. For example, all of us work hard to acquire expertise and education so that we can get the job of our dreams. These types of personal resources are possessed by individual actors and they can be acquired, transferred, used, and even disposed without being disruptive to the social structure. According to this theory, employees – or the firm’s human capital – are therefore the most important organizational resource.

Social capital, on the other hand, can be broadly defined as a system of relationships among and between individuals in a social network (Coleman, 1988). Social capital exists from individuals; hence it is a form of human capital. However, differences clearly exist between these two forms of capital. According to Coleman (1988), human capital theory is narrowly focused by only looking at individual laborers and the investments in people alone. Social capital, by contrast, inheres in the actor’s relationship structure that facilitates actions to the actor. Coleman (1988, p. S98) then convincingly proposes a definition of social capital, that it is “a variety of different entities, with two elements in common: they all consists of some aspect of social structure, and they facilitate certain action of actors – whether personal or corporate actors – within the structure”.

The term “social capital” was used by social theorists as early as the 1900s, but the emergence of discussion among writers and academics only occurred in the middle of the century, for example Jacobs (1961) in discussing the importance of relationships and cooperation in the survival and functioning of communities.

Since then, the concept of “social capital” has received an overwhelming abundance of interests and correspondingly, a multitude of definitions exists of the concept of “social capital”. For example, Bourdieu and Wacquant (1992) have defined social capital as valuable resources that a firm obtains from its network of relationships, while Hitt and Ireland (2002, p. 5) have defined it as “the relationships between individuals and organizations that facilitate action and create value”. A recent view of social capital has also emerged to regard social capital from the organization's point of view. Leana and Van Buren (1999) term this organizational social capital and define it as “a resource reflecting the character of social relations within the organization, realized through members' levels of collective goal orientation and shared trust” (Leana and Van Buren, 1999, p. 540). Following this approach, Dess and Shaw (2001, p. 448) state that “social capital is seen as a public good (organizational resource), rather than a private good (individual resource)”. With varied conceptualizations of social capital, Portes (1998) concluded that there is no universal formulation of the concept of “social capital”. One thing that is certain is that social capital reflects the ties or the relations that are embedded in an actor's network of relations. It is the “network ties [that] provide access to resources” (Nahapiet and Ghoshal, 1998, p. 252).

The premise of social capital is investment in social relations with the assumption of expected returns (Lin, 1999). Within this conceptualization, there are two differing perspectives of various studies in social capital. The first perspective views social capital from a sociocentric approach (Sandefur and Laumann, 1998). This perspective argues that the social structure of interpersonal contacts is important (Sandefur and Laumann, 1998). The sociocentric perspective of social capital thus focuses on the structures of the collective actors, either groups, organizations, communities, and nations, rather than the individual actors *per se*. Grounding his theory in Coleman's (1988) proposition, Putnam's (1993) work on the prosperous regions in Northern Italy argues that social capital is the feature of social organization like trust and networks that benefits the whole society. This view of social capital is very much of a public good (Adler and Kwon, 2002; Dess and Shaw, 2001).

The second perspective of social capital is concerned with the relationships between individuals. Sandefur and Laumann (1998, p. 484) refer to this as the egocentric approach of social networks, where “an individual's social capital is characterized by her direct relationships with others and by the other people and relationships that she can reach through those to whom she is directly tied”. From this perspective, social capital is able to explain the differences in the success of individuals and firms in a competitive environment (Adler and Kwon, 1999). Lin (1982) refers to social capital as an individual's relationships and resources for instrumental action. Burt (1992) defines social capital as brokering opportunities of information due to the location of the individuals in the network of structural holes, i.e. the ties that connect two unconnected groups. Useem and Karabel (1986) further propose that social capital is an asset an individual can accrue and consume throughout the span of the individual's career in order to climb up to the top of the corporate ladder. These authors' definitions of social capital very much reflect social capital as a private good, in that social capital primarily benefits the actors who possess it.

Regardless of the different perspectives, social capital is an asset (Mele, 2003). It occurs within the relationships of individuals, communities, and societies (Burt, 1992). Mele (2003, p. 8) states that “social capital facilitates inter-unit resource exchanges and product innovation, the creation of intellectual capital and cross-functional team effectiveness, reduces turnover rates and organizational dissolution rates, strengthens supplier relations, regional production networks, and inter-firm learning”. Following this argument, social capital enables firms to acquire knowledge from their partners. As mentioned by Kogut and Zander (1992), the acquisition, creation and exploitation of knowledge are essentially social processes. Therefore, the breadth of relationships that constitute a firm's social capital affects the opportunities for knowledge acquisition (McEvily and Zaheer, 1999).

## Alliance learning theory

Much has been written on alliance learning in the last five years. This increase in the literature has largely been the result of the onset of globalization in the world economy. Globalization has indeed “forced” most firms to become more involved in alliances through sales and production agreements with other firms from different regions and countries.

Alliances with other firms provide a basis from which organizations can acquire and apply knowledge. The acquisition of knowledge from the alliance partners is feasible because of the presence of information and knowledge asymmetries. These differences or asymmetries in knowledge between the alliance partners consequently provide a catalyst for alliance learning (Inkpen, 2000). The way organizations in alliances manage this learning process largely determines the success of the alliance (Larsson *et al.*, 1998).

Learning in alliances can occur asymmetrically or symmetrically (Tsang, 1999). Asymmetrical learning occurs when alliance partners do not have the same objectives, and this is typified in alliances where one or more partners have more power or resources than the others. For example, there are instances where firms require a particular kind of product as an important component in the production of their final products. These firms are willing to enter into alliances with other firms who are the dominant suppliers of that product simply because of necessity. In this kind of arrangement, exchange partners may not have similar objectives and one of the parties may have a greater power than or dominance over the others.

Symmetrical learning, on the other hand, occurs when alliance partners have the same learning objectives (Tsang, 1999). In most cases, firms aspire to look for partners with the same learning objectives so that they can learn symmetrically. At the same time, having partners with the same objectives or goals limits the extent to which the organization is dependent upon the other partners for certain resources. For instance, in most cases of joint ventures where partners have the same objectives, all parties with a vested interest in the venture aspire to gain as much knowledge as possible from the other partners because each organization brings something valuable to the partnership that the other parties do not possess.

We focus on symmetrical learning, as this is the most common driver of alliance formation (Tsang, 1999). Within symmetrical learning, there are two types of learning – mutual and non-mutual learning. However, much of the literature on alliance learning tends to focus on the mutual aspect of learning, where alliance partners mutually learn from the relationship. In fact, “existing literature on learning in the context of strategic alliances has a narrowly defined scope of learning” (Tsang, 1999, p. 214). This has led many researchers to neglect the other type of symmetrical learning – that of non-mutual learning, which occurs when alliance partners have the same learning objective but do not equally learn from one another (Tsang, 1999). The narrowly scoped aspect of alliance learning is indeed regrettable given the increasing emphasis on alliance formation and outcomes.

Mutual learning occurs when alliance partners learn skills from one another (Tsang, 1999). It is similar to the “vicarious learning” process which occurs when an organization learns the skills of another organization (Huber, 1991). The skills may be in the form of management practices, strategies, or technologies (Tsang, 1999). In alliances, mutual learning or vicarious learning occurs when partners access the other partners' deeply embedded knowledge (Tsang, 1999). As Tsang (2002, p. 836) states, “vicarious learning is the focus of most of the existing literature on learning in strategic alliances”.

However, organizations in alliances do not always learn to the same extent as their alliance partners (Tsang, 1999). This prompts us to include the non-mutual aspect of alliance learning in our discussion.

The next section details the different types of knowledge in alliances. Drawing on the relational-view perspective (Dyer and Singh, 1998), we argue that organizational knowledge influences alliance learning. Through interactions with partners, firms use their market-specific and firm-specific knowledge to influence their degree of mutual and non-mutual learning. However, few studies have examined such relationships.

### **Knowledge development in alliances**

Many firms form alliances for the purpose of gaining knowledge and sharing their knowledge with their alliance partner(s). It is the primary motivation of organizations involved in alliances to tap the knowledge their partners have (Inkpen, 1998). Defining knowledge in an alliance context, however, has been difficult for researchers (Bresman *et al.*, 1999). Debates exist amongst researchers about what the term “knowledge” exactly denotes. This argument has arisen due to the fact that organizations in alliances have macro-level knowledge about the specifics of their marketplace such as the local and international regulations that govern their businesses, but they also have micro-level knowledge about the dynamics of their individual industry.

Knowledge can be defined in terms of being tacit or explicit (Bresman *et al.*, 1999). Tacit knowledge is often not written or is in a symbolic form which makes it difficult to communicate to others (Bresman *et al.*, 1999). It is intuitive, non-verbalizable and unarticulated (Inkpen and Dinur, 1998). It is knowledge that results as a consequence of a habitual process. It has a very personalized nature, which makes it even harder to transfer and communicate to others. For example, articulating or describing an organizational process can be very difficult because “knowledge supporting the process is highly tacit” (Inkpen, 1998, p. 74). Tacit knowledge therefore cannot be easily exchanged by alliance partners as it involves deeply embedded expertise and skills. Research suggests that more than half of the knowledge that exists in firms is largely of a tacit nature.

Explicit knowledge, on the other hand, is much more easily exchanged by alliance partners as it involves knowledge that is of a codifiable nature, such as knowledge in manuals or reports. In other words, explicit knowledge is “knowledge that is transmittable in formal, systematic language and may include facts, axiomatic propositions and symbols” (Inkpen and Dinur, 1998, p. 456). The difference between tacit and explicit knowledge is summed up by Kumar and Nti (1998, p. 358): “explicit knowledge is codified and embedded in objects such as books and blue prints, but tacit knowledge is experiential and intuitive”.

In alliances, the tacitness of knowledge is crucial in determining whether knowledge can be transferred (Zander and Kogut, 1995). Because of the nature of this tacitness of knowledge, firms form alliances to learn from their partners and to ensure that the process of transferability is more efficient and effective (Dodgson, 1993). Furthermore, explicit knowledge more often than not requires a tacit dimension of knowledge to implement (Inkpen, 1998). For example, manuals and programs may exist in an organization but it will still require the expertise and skills of trained individuals to understand them and deliver the expected outcomes. Thus, being in an alliance with partners that have the required knowledge enables firms to tap into their partners' expertise and skills first-hand through the social interaction of their employees.

The knowledge that organizations possess is a strategically significant resource (Inkpen, 2000). It can be divided into market-specific and firm-specific knowledge. We will examine these two distinct types of knowledge (Berdrow and Lane, 2003) as the components of business knowledge – “experiential knowledge of clients, the market and competitors” (Eriksson *et al.*, 1997, p. 343). The market-specific knowledge and firm-specific knowledge encompass both the tacit and explicit dimensions. Alliances therefore serve as an avenue for firms to develop market-specific and firm-specific knowledge by learning from their partners (Autio *et al.*, 2000).

### ***Market-specific knowledge***

Market-specific knowledge is “organized and structured information about the market” (Li and Calantone, 1998, p. 14). It is knowledge that supports the firm's activities in a particular country or market (Berdrow and Lane, 2003) or the know-what (Kogut and Zander, 1992). This type of knowledge includes knowledge about local business practices as well as knowledge of the norms and behaviors of people and artefacts in the specific country, such as knowledge of complying to certain government regulations within that market or jurisdiction (Berdrow and Lane, 2003). Acquiring market-specific knowledge is an ongoing process that pervades all decisions made by organizations (Day, 1994).

The concept of market-specific knowledge is especially evident in the internationalization literature. In their seminal paper, Johanson and Vahlne (1977) emphasized that knowledge about the external market is crucial for a firm's internationalization success. This knowledge about the international marketplace is often referred to as internationalization knowledge (Eriksson *et al.*, 1997). It is knowledge that an organization has about its international ability. It may include the firm's capacity and resources of international operations (Eriksson *et al.*, 2000). In essence, an organization's market-specific knowledge encompasses the know-what of doing business in the firm's domestic and international markets.

One important type of market-specific knowledge is that of institutional knowledge, which includes the norms, rules and values of a market and its government policies (Eriksson *et al.*, 1997). Inter-cultural alliance partners in particular, need to pay specific attention to the technical laws and norms of the partners' home markets (Eriksson *et al.*, 2000). Often, the host country's government's attitude and policies are considered one of the most important factors for establishing alliances with particular organizations. For instance, alliances in China, such as those between technology organizations, require foreign firms to go into joint venture partnerships with local Chinese firms. This partnership is necessitated by the host country's regulation for foreign firms in order for them to do business in their domestic market and get access to local supplies of resources. Acquiring this market-specific knowledge is important for organizations to ensure the success of their alliance formation and limit any learning outcome discrepancies (Kumar and Nti, 1998).

### ***Firm-specific knowledge***

The market-specific knowledge that a firm has about the institutional regulations of their marketplace, their clients and competitors is important, but in order to facilitate firm growth and expansion, this market-specific knowledge needs to be incorporated into the firm's internal depositories of knowledge. Firm-specific knowledge encompasses employees' experience and expertise, as well as organizational memory about practices or procedures (Bresman *et al.*, 1999). It is essentially the know-how of organizations (Kogut and Zander, 1992). For example, firm-specific knowledge could be the knowledge that the firm has about producing a certain technology.

Firm-specific knowledge is of a tacit nature and is a result of the organization as a whole internalizing and combining its knowledge. Through alliances, organizations have the opportunity to acquire this knowledge from their partners without going through the same experiences the partners have to go through (Eriksson *et al.*, 2000; Lane and Lubatkin, 1998). Organizations that can acquire their partners' firm-specific knowledge and adapt it to their internal operations are those that are more likely to succeed in the marketplace. Japanese firms at the turn of the century provide a good example of those organizations that can acquire their partners' and even competitors' firm-specific knowledge and use it to their advantage.

### **Conceptual model and propositions**

Figure 1 shows our conceptual model of the role of social capital in facilitating the development of two types of knowledge – market-specific and firm-specific – and two types of alliance learning – mutual and non-mutual learning.

### ***Association of social capital and knowledge development***

Organizations' social capital obtained from forming and maintaining social ties with their alliance partners facilitate the combination and exchange of resources and knowledge (Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998). Firms in alliances build their ties to their partners and work towards maintaining those ties. Only ties of close relationships provide value to the actors (Krackhardt, 1992). In such a relationship, trust exists between the alliance partners. Ties that are built on foundations of trust are the ones that can provide social capital to the actors involved and the ones that can provide value and benefits to those embedded in the network.

When trust exists in the relationship, parties are consequently more willing to cooperate and share resources (Tsai and Ghoshal, 1998). Indeed, such established interactions facilitate the exchange of information (Koka and Prescott, 2002) and the flow and acquisition of tacit knowledge (Lane and Lubatkin, 1998). McEvily and Zaheer (1999) further argue that the interaction ties in the network enable firms having these relations to achieve competitive capabilities by obtaining knowledge from other firms within the network. Extensive knowledge can thus be acquired and developed through social interactions of actors in the network who are trusting and trustworthy.

Knowledge that is developed through organizations' relations with their alliance partners are in the forms of both market-specific knowledge and firm-specific knowledge. Alliances serve as a good platform to source for market-specific knowledge, particularly knowledge about the market environment in which the organizations will be operating (Yli-Renko *et al.*, 2002). For instance, every country has certain regulations on the amount of tariffs and taxes a foreign firm needs to pay. Through forming alliances with partners who have knowledge of the local market, firms are more likely to gain this knowledge quickly. They are also more espoused to other relevant details that are necessary to conduct business in the local market, knowledge that may be limited for firms who do not have any strong ties to their alliance partners. Knowledge of this external environment consequently has an impact on the profitability and/or viability of the organization. Accordingly:*P1*. A firm's social capital derived from its relations with its alliance partners is positively related to the firm's development of market-specific knowledge. As the business environment changes rapidly, organizations need to acquire and develop knowledge at a much faster rate. Alliances are a flexible organizational structure that is especially good at keeping up to date with these changes in the environment. A firm's ties to its partners also enable the firm to gain firm-specific knowledge pertaining to the ways the firm adapts to the new environment. Through doing business with their alliance partners, firms have the opportunity to enhance their internal production, process, and capability. Top managers can devise appropriate strategies to improve the internal efficiency of the firm in order to exploit any gains from their partners. Organizational structures may become leaner and more flexible to respond to any changes in the marketplace. Employees are becoming more aware of the strategies to adapt to the changing market. They create their own individual learning when they are involved in projects with alliance partners. This individual learning is then embodied in organizational knowledge when individuals socialize with others in the organization (Osland and Yaprak, 1995), thereby increasing the stock of organizational knowledge (Huber, 1991). Alliances therefore serve as platforms for organizations to quickly learn to grow, a process of evolutionary learning (Doz, 1996).

*P2*. A firm's social capital derived from its relations with its alliance partners is positively related to the firm's development of firm-specific knowledge.

### ***Association of knowledge development and alliance learning***



We earlier posited that alliances serve as an avenue for firms to develop both market-specific knowledge and firm-specific knowledge. However, the learning outcome that occurs from this alliance formation can be different for different organizations as each party has its own specific guidelines and objectives. In particular, the objectives of the parties in an alliance may be different when an alliance is formed between firms from different countries, for example between an American firm and a Chinese firm with the objective of manufacturing a US-patented technology in China.

The American firm, on the one hand, would like to gain more market-specific knowledge for doing business in China from its Chinese counterpart, whereas the Chinese firm would like to obtain more firm-specific knowledge pertaining to an efficient and effective production of this new technology. In this way, both parties have a similar objective – i.e. to manufacture the technology in China – but they have specific interests in the different types of knowledge. Both parties are therefore driven by a common interest and they can mutually learn from one another. They take actions that result in the way the firms do business (Bowker and Star, 1994). In this case, both the American and the Chinese firms gain knowledge that changes the way they conduct business, either in terms of competing in the local Chinese market for the American firm or producing a high-quality technology product for the Chinese firm. Accordingly:*P3*. Mutual learning will occur as firms in alliances acquire market-specific and firm-specific knowledge. However, non-mutual learning may also occur in the context of alliances. In the example of the American and Chinese firms illustrated above, the parties in the alliance come from different countries with different cultures and societal backgrounds. Knowledge that is shared between them will have to be interpreted into the other's language. Some information may then be lost or distorted due to this channel of communication. Regardless of whether the firms aspire to acquire firm-specific or market-specific knowledge, the learning outcome from alliances may result in one partner learning more or learning at a faster rate than that experienced by the other. Firms with a higher absorptive capacity (Cohen and Levinthal, 1990) can learn faster than their counterparts. Therefore, alliances do not always produce similar learning outcomes for all parties involved. There are internal organizational concerns and external factors that determine this non-mutuality in learning. Accordingly:

*P4*. Non-mutual learning will occur as firms in alliances acquire market-specific and firm-specific knowledge.

### **Implications and suggestions for future research**

We have argued that firms in alliances have to build strong interaction ties with their partners. Firms with strong social capital with their alliance partners will benefit from this capital in many ways. By having ties that are characterized by trust, firms are able to acquire market-specific and firm-specific knowledge from their alliance partners and their own experience. Using social capital as a theoretical perspective on the creation of knowledge and learning outcomes therefore considerably enhances our knowledge of the role of social processes in knowledge development and alliance learning.

We have also shed some light on the conception that alliances always produce equal benefits for the partners involved. While firms aspire to learn mutually from each other, the extent of their learning may be different because firms' capabilities and other external environments do have impacts on their learning outcomes. Firms with a high absorptive capacity are more likely to acquire both market-specific and firm-specific knowledge from their partners (Cohen and Levinthal, 1990), but external influences such as the need for language interpretation or the different ways the partners conduct business may also influence the learning outcome of the firms. More research is therefore required on the aspect of non-mutual learning and how it affects organizations and alliances.

Our study also implies that firms in alliances need to change their employees' attitude and orientation. Managers need to be entrepreneurially oriented in order to gain maximum benefits from the alliance. They need to understand their partners' knowledge. They need to be able to determine the types of knowledge the firm requires. They also need to ensure that there are proper procedures and processes

to tap into their partners' knowledge and capabilities, and successfully apply that to improve their own firm's performance. In essential, they need to have an entrepreneurial knowledge – “the knowledge of where to obtain information (or other resources) and how to deploy it” (Kirzner, 1979, p. 8). This knowledge builds into the organization's own stock of knowledge (Minniti and Bygrave, 2001), and the dynamic learning process then evolves over time to build organizational competitive advantage (Sinkula *et al.*, 1997).

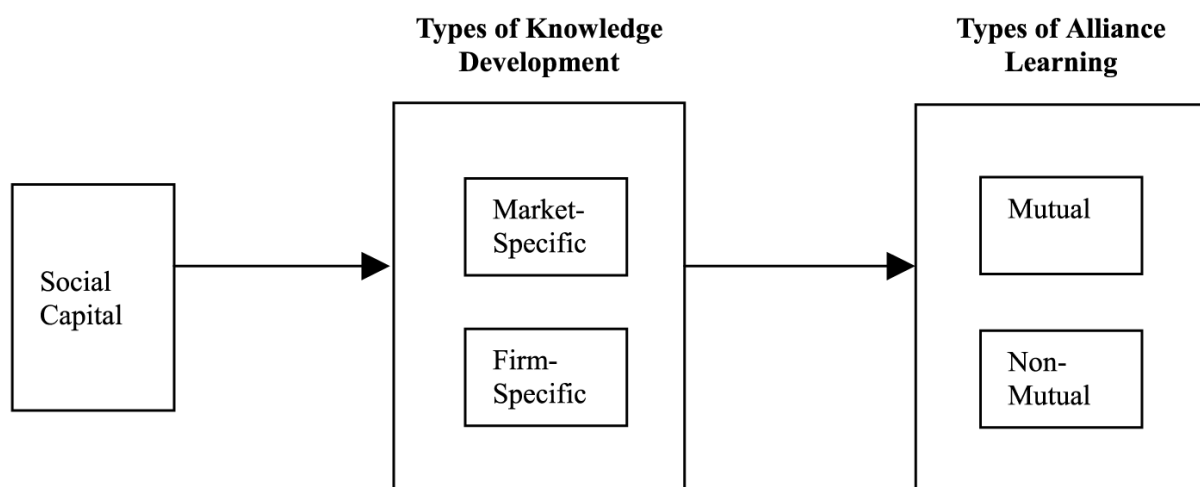
Future research could examine the extent of non-mutual learning for firms of differing sizes and ages. For example, small firms may be resource-dependent on larger firms to access financial resources, support and expertise to gain access to international markets. The extent of non-mutual learning may therefore possibly be higher in contexts where alliances are formed between firms of differing sizes and ages.

Future research could also explore the ways in which different types of alliances, such as joint ventures or a simple marketing collaboration, influence the type of learning that occurs.

Finally, we suggest that future research needs to elaborate on social capital in greater detail. Not all of a firm's ties with partners are beneficial – research needs to take into account how ties are developed in order to provide benefits to the actors involved. Considerations of the strength of ties between alliance partners or the extent to which a partner is centrally located in the network of alliance firms may shed further light onto the effects of different network structures on knowledge development and alliance outcome.

## Conclusion

This paper has discussed the importance of social ties, knowledge, and learning in an alliance context. Two types of knowledge are elaborated – market-specific and firm-specific knowledge. We propose that firms' social capital plays a role in the development of these two different types of knowledge. We further address the gap in the literature regarding the lack of theory and research on the aspect of non-mutual learning from alliances. We argue that firms in alliances may gain different learning outcomes because of their ties in the network and the extent of their knowledge. By examining the relationship between firms' knowledge development and the extent of their learning outcomes from their ties with the alliance partners, this study therefore provides a starting point to understanding this linkage. We have outlined the implications of our work and provided several suggestions for future research.



**Figure 1A** conceptual model of the role of social capital in knowledge development and alliance learning

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