Corporate venture capital as a means of radical innovation: Relational fit, social capital, and knowledge transfer

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Abstract

The authors begin with an elaboration of a new theoretical concept: “relational fit”, which consists of social capital and knowledge relatedness. They continue with an empirical analysis of the influence that “relational fit” between German corporate venture capital units (CVCs) and their innovative portfolio companies (PCs) has on knowledge transfer and knowledge creation in the CVC–PC dyad and subsequently on the PC’s organizational performance. PC success is found to have dual significance for the corporation: high returns for the CVC unit and strategic potential for radical innovation. Integrating two hitherto neglected aspects of social capital – “conative fit” and “affective fit” – into their framework of “relational fit” the authors extend social capital theory. By combining the latter with the knowledge-based view of the firm they thereby demonstrate the interrelatedness and combined importance of the two concepts. Hence, “relational fit,” proves to facilitate knowledge transfer and creation, which enhance organizational performance.

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1. Introduction

To gain sustainable competitive advantage, corporations strive for radical innovation, that is, changes with a high degree of innovativeness in several dimensions. “They may be based on a totally new technological principle allowing a significant leap in performance; they satisfy new
needs, create new markets, redefine whole industries and change existing value chains” (Salomo et al., 2004, p. 2; Salomo, 2003). O’Connor and McDermott (2004) suggest that “radical innovations are projects which are distinguished not only by the promise of reward they offer, . . . but also by the risk and uncertainty that accompanies [sic] their potential outcome” (p. 11).

One way for corporations to achieve such radical innovation and subsequently competitive advantage is by leveraging interorganizational relationships to acquire, transfer, exploit, and explore external knowledge from young technology-based firms (Keil, 2000). Corporate venture capital units (CVCs), which invest in highly innovative new ventures, constitute one form of interorganizational relationship. Because of the technological innovativeness of such ventures, they are characterized by uncertainty, risk, potential high growth rates, and outstanding potential for technological breakthrough. They provide the strategic opportunity to develop new business units (Keil, 2000; Weber and Dierkes, 2002; Weber and Weber, 2005) and to gain large market share as well as supernormal returns.

From the knowledge-based perspective, knowledge is also a source of sustainable competitive advantage (Grant, 1996; Kogut and Zander, 1992; Spender, 1996). Generating and transferring knowledge is particularly important for innovation-driven corporates and technology-based ventures because such companies demand a continuous regeneration of knowledge (Lane and Lubatkin, 1998). Research has also shown that additionally acquired, relevant knowledge sharpens an organization’s ability to gain competitive advantage (Autio and Sapienza, 2001; Grant, 1996; Mohrman et al., 2003; Yli-Renko et al., 2001)—an antecedent of improved organizational performance.

Other dimensions promoting successful knowledge acquisition or transfer are knowledge relatedness (Lane and Lubatkin, 1998), and knowledge-sharing routines (Dyer and Singh, 1998). Knowledge relatedness means that an organization’s existing knowledge is related to the new knowledge to be assimilated (Grant, 1996). Knowledge relatedness thereby describes the degree of similarity and compatibility of knowledge between two individuals or organizations (Scholl, 1992, 2003). Lane and Lubatkin (1998) show that a firm’s capacity to recognize, assimilate, and exploit external knowledge partly depends on the similarity between the exchange partners’ knowledge bases, organizational systems, and dominant logics.

Another factor shown to be critical to the success of technology-based firms is social capital (Yli-Renko et al., 2001). Social capital in a relationship enables the partners to tap into each other’s knowledge resources and thereby increase the depth and efficiency of mutual knowledge exchange, which is considered a predominantly social process (Kogut and Zander, 1992).

These factors influencing knowledge acquisition and transfer are analyzed and discussed separately in the literature. We argue, however, that both the level of social capital embedded in the relationships (Yli-Renko et al., 2001) and their knowledge relatedness (Lane and Lubatkin, 1998) affect the degree to which CVCs and portfolio companies (PCs) can use their respective partners’ external knowledge (resources and networks) and learn with those partners. Hence, effective knowledge acquisition and transfer requires social capital and knowledge relatedness alike. How these combined factors, which we refer to as “relational fit,” affect the interorganizational knowledge transfer between CVC and PC, and ultimately the performance of PCs, has not yet been investigated and empirically tested. Given the high number of CVCs dropping out of the market (Gompers and Lerner, 1998; Weber, 2005) we analyse the relational-fit factors triggering the combined success or failure of CVC and PC (Fig. 1).

In this article we extend social capital theory by explaining two hitherto unconsidered aspects of social capital: “conative fit” (the partners’ intention and willingness to cooperate) and “affective fit” (the functional compatibility of emotions between two or more individuals or
small groups; see Scholl, 2003). Second, we combine social capital theory with the knowledgebased view of the firm and thereby demonstrate the interrelatedness and combined importance of the two concepts.

The unit of analysis of this article is the exchange relationship between the CVC and its PCs. We use qualitative information from different CVC–PC relationships to provide initial exploratory evidence for our conceptual model of relational fit as an antecedent of knowledge transfer and creation.

2. Literature review and theoretical framework—relational fit

Who is the right partner to achieve radical innovation in a CVC–PC relationship? Though seemingly straightforward, this key question all but defies quick answers, partly because some aspects important for answering it have not yet received due attention. The related discussion in CVC research touches on strategic fit (Thornhill and Amit, 2000), the relatedness of activities (Sorrentino and Williams, 1995), and structural congruence (Sykes, 1986), but relational aspects between the partners are only seldom mentioned (Higashide and Birley, 2001; Weber and Dierkes, 2002; Zacharakis, 2002). This gap is precisely what we wish to help bridge with the following analysis of relational fit and its impact on knowledge transfer.

In this section, we discuss three published articles that address issues relevant to our line of reasoning. The first of them is the well known and frequently cited article by Nahapiet and Ghoshal (1998), which comes close to our understanding of social capital. They have developed a theoretical framework to explain how social capital may facilitate value creation by firms, identify three dimensions of social capital: structural, relational, and cognitive. The structural dimension includes the ties of the social network and the location of an actor’s contacts within the social structure of interaction. In other words, it deals with the presence or absence and kind of networks involved, with the issues of who you reach and how you reach them (Burt, 1992). The
The relational dimension focuses on the particular quality of relations that an actor has, specifically those relations that influence his or her behavior. It is through these ongoing personal relationships that people abide by agreed rules and cooperate and act in the common interest. Among the key facets of this relational dimension are trust (Fukuyama, 1995) and norms (Coleman, 1990; Putnam, 1995).

The cognitive dimension of social capital “refers to those resources providing shared representations, interpretations, and systems of meaning among parties” (Nahapiet and Ghoshal, 1998, p. 244). An empirical test of this model (Tsai and Ghoshal, 1998) shows that social interaction, as a manifestation of the structural dimension of social capital, and trust, as a manifestation of its relational dimension, are significantly related to the extent of interunit resource exchange, which, in turn, had a significant effect on product innovation.

Gemünden et al. (1999) further add to our understanding of the subject by introducing the concept of interorganizational fits, which we expand on in our model. Gemünden et al. (1999) analyze the impact that the starting conditions of European multipartner research projects have on the progress and success of those projects. In their conceptual model the fit between the partners consists of social fit (trust and commitment), resource fit (the sum of the partners’ competencies and the complementarity of these resources). The proposition of the researchers is that the better the goal fit, or goal complementarity (goal clarity and compatibility), the better the projects progress and succeed. Their data analysis confirmed all hypotheses. Most of the identified starting conditions showed a positive, substantial, and significant correlation with most of the success measures.

To complement the concepts of fit introduced by Gemünden et al. (1999), we draw on an additional typology of fit by Scholl (2003), who explored and described two new relevant types of fit. Taking a psychological point of view, Scholl (2003) develops a basic model of effective teamwork inside an organization. He considers the fit between the parties, along with knowledge and power, to be one of the fundamental concepts of social interaction. He differentiates between five fits: conative, affective, cognitive, competence (ability), and normative. The conative fit is defined as the partners’ intention to cooperate and follow compatible goals. This conative agreement, or cooperative motivation, is said to be particularly suitable in instances entailing conflict of interest. The affective fit describes the functional compatibility of emotions. It encourages mutual trust and openness, which contribute to a free exchange of opinions and thus foster knowledge creation. The cognitive fit and competence fit describe the degree of content similarity of the partners’ cognitions and abilities (Scholl, 2003). Cognitive fit refers to shared, explicit knowledge; competence fit, to shared implicit knowledge; and normative fit, to the similarity of values and norms.

For our own exploration of the relational aspects between the partners in a CVC–PC dyad, we create a detailed framework of relational fit (Fig. 1). It incorporates social capital, consisting of social network ties, norms, trust, conative fit, and affective fit; and knowledge relatedness, consisting of know-what (factual knowledge) and know-how (capabilities). We argue that the above dimensions, jointly referred to as relational fit, directly and indirectly aid knowledge transfer and creation – and ultimately PCs’ organizational performance – through knowledge-sharing routines (Cohen and Levinthal, 1990; Dyer and Singh, 1998; Lane and Lubatkin, 1998). If our model can explain knowledge transfer within a CVC–PC dyad with this set of variables, then it can also be applied, we hope, to any other comparable interorganizational set-up, for these dimensions are prevalent and crucial in any kind of relationship.

For the sake of clarity, the impact that each variable of relational fit has is analyzed independently of the other dimensions (see also Nahapiet and Ghoshal, 1998). Although we
separate these dimensions analytically, many of the features we describe are, in fact, likely to be interrelated in important and complex ways.

3. Conceptual framework and research hypothesis

3.1. Dependent variables

3.1.1. Organizational performance

The performance of any organization is eventually affected by its ability to establish and preserve its competitive advantage. A company’s success at this task depends on multiple factors. In addition to overall market conditions, management, marketing and sales strategy, operational efficiency, and the like, radical innovation assisted by outstanding technology is one way to outperform competitors. The organizational performance of new ventures largely depends on their ability to innovate and to turn technology into business. In keeping with previous definitions of performance (Sorrentino and Williams, 1995; Thornhill and Amit, 2000) and our present objective, we define the organizational performance of PCs in terms of sales, return on investment, and market share.

3.1.2. Knowledge

Knowledge is a key resource, the core and primary source of value in any kind of organization (Cohen and Levinthal, 1990; Dyer and Singh, 1998; Grant, 1996; Lane and Lubatkin, 1998). From the knowledge-based view of the firm, knowledge is strategically the most significant resource (Grant, 1996; Spender, 1996). For organizations striving for innovation and competitive advantage, new knowledge as well as knowledge transfer and creation are critical since they open new productive opportunities (Penrose, 1959) and enhance the firm’s ability to exploit them (Yli-Renko et al., 2001). One way for an organization to explore new knowledge and exploit existing knowledge is through exchange with other organizations (De Clercq and Sapienza, 2001; Dyer, 1996; Dyer and Nobeoka, 2000; Lane, 2001; Zacharakis, 2002).

Grant (1996) holds that heterogeneous knowledge bases and capabilities among firms are the main determinants of sustained competitive advantage and superior corporate performance. The development and growth of highly innovative new ventures crucially depend on the external knowledge acquisition by these organizations and on their ability to combine their specific knowledge and resources (McDougall et al., 1994). Although young firms rely on a constant inflow of new knowledge (Autio et al., 2000), their resources are greatly restricted (McDougall et al., 1994). Experience shows that young technology firms not only save time and money from a CVC–PC partnership but can benefit substantially from it by gaining access to unique and complementary external resources (Yli-Renko et al., 2001).

Corporate knowledge and social capital accelerate the learning curves and growth rate of these ventures. In exchange, the corporation acquires equity from the young venture firm and thereby participates in upward financial valuation of the venture if it succeeds. At least equally important, though, is the corporation’s early access to the venture’s new ideas and technologies and the

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1 In the framework of this article, knowledge transfer and creation include not only the exchange between the CVC unit and the PC but also extend both into and away from the entire organization for which the CVC unit acts as promoter. For a treatment of promoters, see Hauschildt and Gemünden (1999).
exchange of external complementary knowledge, all of which carries the potential for truly radical innovation within the corporation.

The knowledge-based literature distinguishes between at least two kinds of knowledge: explicit knowledge about facts, which can easily be codified and transferred, and tacit knowledge, which is derived from experience such as skills and intuition (Nonaka and Takeuchi, 1995; Polanyi, 1966). Tacit knowledge is often subjective and unconscious. Difficult to separate from the owner of the knowledge and hard to transfer (Lubatkin et al., 2001), tacit knowledge is said to lead to a sustainable competitive advantage (Kogut and Zander, 1996). The partners in CVC–PC relationships try to exploit this fact by contributing different, often highly tacit knowledge to the relationship. Aside from financial backing, the most important value-adding activity of any CVC is therefore the effective transfer of relevant knowledge (facts, skills, experience, other complementary resources, and networks) to the new venture (Maula et al., 2002).

3.1.2.1. Knowledge transfer. As a construct, knowledge transfer and creation are closely related to the concepts of organizational learning and absorptive capacity. Given those concepts and the aim of this article, we follow Huber (1991) and consider knowledge transfer and creation within or between organizations to occur if any company or any of its business units acquires knowledge that it recognizes as potentially useful to the organization. This definition relates to all relevant knowledge in the above sense, that is, in addition to facts and skills it includes networks and other valuable and complementary resources. Knowledge transfer and creation are regarded as interdependent and reiterative. Knowledge creation and innovation result from new combinations of knowledge and other resources (Cohen and Levinthal, 1990; Kogut and Zander, 1992). By the same token, knowledge transfer (or exchange) is a prerequisite for resource combination, in other words, for knowledge creation (Moran and Ghoshal, 1996). Consequently, we henceforth use the expression “knowledge transfer” interchangeably with “knowledge transfer and creation.”

Researchers have studied various aspects that influence the transferability of knowledge across organizational boundaries. In this work, knowledge-sharing routines (Dyer and Singh, 1998), social capital (Putnam, 1995; Yli-Renko et al., 2001), and knowledge relatedness (Lane and Lubatkin, 1998) have all emerged as important factors affecting interorganizational knowledge transfer.

3.1.2.2. Knowledge-sharing routines. The knowledge-based view finds that interorganizational knowledge transfer and creation takes place more effectively when knowledge-sharing routines are in place than when they are absent (Cohen and Levinthal, 1990; Dyer and Singh, 1998; Grant, 1996; Lane and Lubatkin, 1998). According to Homans (1974) and De Clercq and Sapienza (2001), the quality of knowledge-sharing routines is described by its frequency and intensity. Knowledge-sharing routines are defined as “repeated activities that represent the mechanisms for multiple and intensive interactions between parties in developing relational advantages” (De Clercq and Sapienza, 2001, p. 114). Such routines make for effective communication in a variety of forms such as telephone, e-mail, voice mail, and personal formal meetings. Those different forms of communication enable the transfer of complex, rich, and context specific information, facilitate problem-solving, and improve effectiveness at building relationships (Lind and Zmud, 1995). De Clercq and Sapienza (2001) continue by stating that “when knowledge-sharing routines are in place, interaction may lead to an improved capacity to exchange and process knowledge and thus lead to optimal learning outcomes for venture capitalist and entrepreneur” (p. 114).
For this reason, we expect that innovative new ventures will require frequent and intensive interaction of various kinds with their CVCs (i.e., a high level of knowledge-sharing routines) in order to facilitate knowledge transfer and use the new ventures’ potential for radical innovation. At the same time we bear in mind the argument that a high frequency of interaction can also be interpreted as an indication that a PC is having difficulties and requires vigorous VC support (Fredriksen et al., 1997).

**Hypothesis 1.** A high level of knowledge-sharing routines between CVC and PC is positively related to knowledge transfer.

### 3.2. Independent variables—relational fit and knowledge transfer

#### 3.2.1. Social capital

Theories rooted in the concept of social capital focus on the significance of relationships as resources for social action (Baker, 1990; Bourdieu, 1986; Burt, 1992; Coleman, 1990). Their central proposition is that social networks (i.e., personal relationships) often develop over time, provide the basis for trust and cooperation, and constitute a valuable actual or potential resource that aids the conduct of social affairs (Putnam, 1995; Fukuyama, 1995) and improves the economic performance of firms (Baker, 1990).

For the purpose of this article, we follow Granovetter (1992) by differentiating social capital into a structural and a relational dimension. The structural dimension consists of social network ties (Burt, 1992). The relational or content dimension includes shared norms and trust. However, we also explicitly expand the concept of social capital by integrating two of Scholl’s (2003) dimensions, the conative fit and the affective fit, which have received insufficient attention. Proponents of a narrow approach to social capital argue that such a broad definition threatens to make it impossibly broad (Adler and Kwon, 2002; Portes, 1998). In this vein, Burt (1992) reduces the concept of social capital essentially to its structural dimension. Nonetheless, we see these resources as essentials of social capital, not as complements (Gabbay and Leenders, 1999; Lin, 1999). We agree with Adler and Kwon (2002) that there is “merit in allowing that given actors’ social capital includes the resources that they could potentially mobilize via their social relations” (p. 27). One such source of social capital is associability identified by Leana and Van Buren (1999). In their view it comprises the motivation and the ability of a collectivity to define and enact its goals. As stance may approximate Gemünden et al.’s (1999) goal fit and Scholl’s (2003) conative fit, we suggest that the conative and affective fits are self-contained dimensions that should be integrated independently into the broadly defined concept of social capital. They are indispensable resources for a firm trying to tap into a partner’s knowledge base to acquire and exchange knowledge.

**3.2.1.1. Structural dimension of social capital and knowledge transfer.** The structural dimension of social capital refers to the network of social interaction ties (Nahapiet and Ghoshal, 1998), creating opportunities for social capital transactions. Being embedded in the right social network means opportunities to maintain existing contacts and to develop new ones. This embeddedness therefore represents useful and important knowledge for both parties of the CVC–PC dyad (Podolny and Page, 1998; Powell et al., 1996). Not every contact of one party is valuable to the other party, so the aim must be to verify the usefulness of new contacts at a very early stage of the relationship. When talking about social interaction ties or social networks,
Kogut (2000) refers to “the network as knowledge.” In this sense, social networks can also be said to belong to the concept of knowledge, as indicated in the preceding discussion of knowledge transfer.

Because of the specific circumstances confronting a new innovative venture, it requires vast resources (Salomo et al., 2004). The “right” social network may help tremendously to reduce resource scarcity (Dubini and Aldrich, 1991; Maurer, 2003). For the corporation, the interaction with the PC provides a window on technology as well as a “bridge” to an entirely new network of innovative entrepreneurs and their social contacts. This access to technology and networks supports the exploration and exploitation of new business opportunities by providing access to complementary resources and giving control over critical ones (Keil, 2000).

Social networks, whether their ties are direct or indirect, weak or strong, have an important influence on knowledge acquisition and transfer in the CVC–PC dyad (Podolny and Page, 1998). Weak ties have been shown to advance the cost-effective search for new information; strong ties, the cost-effective transfer of complex and difficult-to-exchange tacit knowledge (Hansen, 1999). The relationship between CVC and PC can be regarded as a strong tie, depending on the duration of the relationship, the contractual connection, the underlying goals, and the frequency and intensity of interaction. The PC’s strong tie to the corporation can ease access to the corporation’s mature network of additional strong ties along with weak ties (Wilson et al., 2004), none of which the PC itself has not formed yet but which can be crucial for its competitive advantage.

Because the CVC–PC dyad represents a strong tie, the CVC – and especially the highly innovative investment target – look for and profit most from diverse, nonredundant contacts and the potentially embedded resources in these contacts (Burt, 1992). We suggest that “social networks” have a negative relationship with knowledge transfer. Assuming that the two parties of the CVC–PC dyad validate the relevance and usefulness of each other’s social networks, we argue that knowledge transfer might be highest and that the CVC–PC dyad benefits most if there are no overlapping contacts between the respective social networks.

Hypothesis 2.1. Social network overlap between CVC and PC is negatively related to knowledge transfer.

3.2.1.2. Relational dimension of social capital and knowledge transfer. Conative fit. If high quality teamwork is to result within the CVC–PC dyad, the partners must have a shared intention of what is to be achieved, similar or complementary goals, and commitment to the joint project (Gemünden et al., 1999). Along this line of thought, conative fit is defined as the partners’ intention and willingness to cooperate (Scholl, 2003). Having a long history and diverse academic roots, research on cooperation takes place within many theoretical frameworks (Smith et al., 1995). Accordingly, conative fit or the willingness to cooperate can be driven by a general cooperative motivation based on trust (Fukuyama, 1995) and fairness (Korsgaard et al., 1995; Ring and Van de Ven, 1994). Alternatively, it can be economically and instrumentally driven by a specific judgment that cooperation is advantageous in this situation, as it is argued in the literature on principal-agent issue and institutional economics (Adler and Kwon, 2002). Consequently, conative fit can arise from trust and fairness; but they are not its only antecedents.

Incompatible goals, a conflict of interest, or both can easily lead to a failure of the relationship (Sykes, 1990). When it does, a conative fit driven by any kind of cooperative motivation can be
essential to resolve the problem (Korsgaard et al., 1995; Ring and Van de Ven, 1994). One can also assume that a conative fit leads to cooperative behavior.\(^2\)

Though we have found no studies that investigate the conative fit between CVC and PC, or between classical venture capitalists (VC) and PC, there is a rich body of literature on trust and cooperative relationships in the (C)VC–PC dyad and their necessity for the success of the VC-backed new venture (Cable and Shane, 1997; Ring and Van de Ven, 1994; Sapienza and Korsgaard, 1996). Contractor and Lorange (1988) document the positive relationship between cooperativeness among companies and strong levels of efficiency and profitability.

There are different lines of argumentation about why cooperation has an impact on organizational success (Deutsch, 1949; Scholl, 2003). Beer et al. (1990) emphasize that cooperation is a prerequisite for coordination, which, in turn, can be considered necessary for innovation and competitive success. Scholl (1996, 2003) holds that cooperation leads to more intensive, more open, and less adulterated exchange of knowledge than would otherwise be likely. He demonstrates that knowledge expands in the presence of conative fit, a change that increases the effectivity of group performance. In keeping with Scholl’s (2003) line of reasoning, we propose our next hypothesis:

**Hypothesis 2.2.** A conative fit between CVC and PC is positively related to knowledge transfer.

**Affective fit.** The affective fit describes the functional compatibility of emotions between two or more individuals or teams. We concentrate on the team level rather than on the individual level. Emotions have a communicative relevance that is particularly important in a new, insecure, and untested relationship (Scherer and Tran, 2001) such as the early CVC–PC dyad. McAllister (1995) states that emotions have powerful effects on social interaction, particularly on trust-building. Similarly, Scholl (2003) argues and demonstrates (1996) that affective fit promotes mutual trust and openness, which contribute to a free exchange of opinions and positively effects knowledge transfer.

While investigating emotional or affective fit between partners or potential partners, we found relevant related research in the Merger & Acquisition (M&A) literature on postacquisition integration (Cartwright and Cooper, 1993; Datta, 1991; Larsson and Finkelstein, 1999; Larsson and Lubatkin, 2001; Nahavandi and Malekzadeh, 1988). The organizational or personal misfit between two merging partners – often referred to as “cultural clash” – has been shown to kindle resistance, reduce commitment, and lessen cooperation among the acquired employees (Buono et al., 1985), escalate turnover among acquired managers (Lubatkin et al., 1999), curb shareholder value at the buying firm (Chatterjee et al., 1992), and undermine operating performance at the acquired firm. In short, such misfit ends in failure. Evidence from M&A research shows that those parties who perceive a mutual affective fit see each other positively. That agreement accelerates the development of trust, reinforces willingness to cooperate (Zacharakis, 2002), and may serve knowledge transfer. Our next hypothesis draws on Scholl (2003) and related research (Bower, 1992; Tran, 1998; Vince, 2001):

**Hypothesis 2.3.** An affective fit between CVC and PC is positively related to knowledge transfer.

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\(^2\) Cooperation in this context does not mean full information disclosure to the other party. From a business point of view, such sharing is looked upon as unnecessary and probably even naive. Partial cooperation is sufficient.
Norms. Many scholars studying organizational performance have emphasized the impact of norms and shared attitudes toward people’s behavior. Following Elster (1989) and Weber (1921/1978), norms refer to what people ought to do for reasons of, for instance, fairness or conventional morality in contrast to simple regularity. Norms can be either attitudinal (everybody thinks the same way) or behavioral (everybody behaves the same way). Norms act as a substitute for, or a reinforcement of “...[formal] rules or control mechanisms with the result that enforcement and punishment institutions become of secondary importance” (Platteau, 1994, p. 756). The outcome of economic exchange and organizational performance thus differs, depending on whether a society’s or organization’s prevalent norms are ones that lead people to expect each other to cooperate, or to defect (for empirical evidence, see McAllister, 1995; Weber, 1997). Shared norms support the transfer and creation of knowledge provided that individuals share information with each other because they feel they ought to do so, because they can see the benefit to both parties, and/or because they expect the other party to cooperate equally.

Research has shown that the organizational culture of a large corporation tends to differ from the organizational culture of a new venture. These divergent organizational cultures are reflected in people’s attitudes and norms, which can be considered a proxii for organizational culture. In the context of this study, the influence of norms on knowledge transfer is not straightforward. On the one hand, the development of processes for interorganizational knowledge transfer and creation is nontrivial if no legitimate institutional routines initially exist for acquiring, encoding, storing, assimilating, and transferring information. Perceived shared norms and attitudes or a similar social background (Hitt et al., 1993; Scholl, 2003) between CVC and PC can improve knowledge transfer (Weber, 1996), however.

On the other hand, the diversity of the two organizational cultures is an important cause of the firms’ ability to generate new knowledge for radical innovation. Mental models, attitudes, and norms that influence the organization include mutual support, openness, fairness, autonomy, tolerance for mistakes, level of bureaucracy, and regulation. These models, attitudes, and norms are manifold and difficult to measure and differentiate. Moreover, they have different impacts, both positive and negative, on knowledge transfer in the organization. We nevertheless suggest that the positive influence of shared norms on knowledge transfer dominates:

Hypothesis 2.4. Shared norms between the CVC and the highly innovative PC are positively related to knowledge transfer.

Trust. Trust is central because it is highly interrelated with most of the dimensions we have analyzed so far and because it has many antecedent conditions (Zucker, 1986). Following Dasgupta (1988) and Fukuyama (1995), we define trust as the expectation of regular, honest, and cooperative behavior of other actors that arises within a community, based on norms. In a dynamic setting with imperfect information, trust corresponds to an attitude of initial predisposition to honesty, the willingness to be vulnerable, to cooperate, and to make efforts consistent with the group’s goals and intentions (Lindskold, 1978; Mayer et al., 1995; Ring and Van de Ven, 1994; Sapienza et al., 1999; Weber, 1997).

Previous research reflects the importance of interpersonal and interorganizational trust relationships for sustaining individual and organizational performance (Fukuyama, 1995; Manigart et al., 2000; McAllister, 1995; Sapienza and Korsgaard, 1996; Zucker, 1986). Scholars document that people are more inclined to engage in social exchange in general, and to cooperate in particular, when institutional or personal relationships are high in trust than when trust is low (Ellickson, 1991; Nahapiet and Ghoshal, 1998; North, 1990). Trust lifts overall organizational
performance because it raises the number of possible transactions and diminishes the cost of monitoring and contract enforcement by reducing opportunism.

From the interorganizational perspective of the VC–PC dyad and the vantage point of the dominant economic and organizational literature, there is support for the general transaction–cost argument “that trust reduces reliance on controlling provisions designed to minimize agency risk” (Sapienza et al., 1999, p. 5). Furthermore, De Clercq and Sapienza (2001) theorize that trust enhances the effectiveness of knowledge-sharing routines between CVC and PC. Shepherd and Zacharakis (2001) show the influence of trust on the partners’ cooperative interaction. That influence provides a means by which optimal knowledge transfer between VC and PC can occur (Dyer and Singh, 1998; Nahapiet and Ghoshal, 1998).

**Hypothesis 2.5.** Trust prevalent in a CVC–PC relationship is positively related to knowledge transfer.

### 3.3. Knowledge relatedness—know-what and know-how

Knowledge relatedness is understood as the degree of similarity and compatibility of knowledge between two individuals or organizations (Scholl, 1992, 2003). In the following, we group knowledge into two categories: the explicit factual knowledge (know-what) possessed by the partners, and their tacit knowledge and experiences (know-how) (Kogut and Zander, 1992; Lane and Lubatkin, 1998; Nonaka and Takeuchi, 1995).³ Because the argumentation about knowledge relatedness holds for both categories of knowledge (Scholl, 2003), we discuss them as a combined unit in this article.

For knowledge transfer to happen, the parties must communicate with each other. Communication comes easier if a common knowledge base exists among them. Grant (1996) points out that learning and the ability to exploit outside sources of knowledge is greatest when the existing knowledge is related to the new knowledge to be assimilated. Excessively significant differences between the knowledge base of the CVC and that of the PC can complicate communication and mutual understanding or even lead to contempt or disrespect of the other party’s knowledge instead of having a learning effect (Maula, 2001). Conversely however, too much knowledge similarity limits the positive effect of controversial discussions; the more the knowledge of the partners overlap, the less there is to learn from each other (Cohen and Levinthal, 1990; De Clercq and Sapienza, 2001; Lane and Lubatkin, 1998; Lubatkin et al., 2001).

If a corporation seeking radical innovation is to generate new knowledge, which in most cases will have to be fairly different from what the organization already possesses, it must seek partners whose knowledge is suitably unrelated to its own (Katila, 2002). Hence, a CVC and an innovative PC will optimize their mutual knowledge transfer and creation if they share a sufficient, common knowledge base (to enable effective communication) yet also have sufficient diversity of knowledge (Scholl, 2003). We argue that this modulated degree of knowledge relatedness (curvilinear function) increases the likelihood of radical innovation. It adds value to the partnership, building competitive advantage (Chung et al., 2000). A low level of knowledge relatedness is generally considered to have the potential for exploration, which allows for knowledge transfer and subsequent radical innovation. However, assuming that some common

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³ The previously mentioned third category, “know-who,” is subsumed under “social networks.”
knowledge base is always required for effective communication, we expect knowledge transfer to be at its optimum when knowledge relatedness is low but not nonexistent. We suggest that maximal knowledge transfer occurs when knowledge-relatedness rates about “2” on a scale from “1” (lowest) to “5” (highest). This leads to the proposed curvilinear function of knowledge:

**Hypothesis 2.6.** An inverted U-shape relationship exists between the relatedness of know-what and the knowledge transfer in the CVC–PC dyad.

**Hypothesis 2.7.** An inverted U-shape relationship exists between the relatedness of know-how and the knowledge transfer in the CVC–PC dyad.

It has been demonstrated in the literature (especially Festinger, 1954, 1957) and in the above discussions that many of the variables we describe are, in fact, highly interrelated. For this reason we expected to see high correlations between these variables.

The dynamic between knowledge transfer and creation on the one hand and organizational performance on the other has also been argued extensively above and does not require further explanation.

**Hypothesis 3.** Knowledge transfer between a CVC and a PC is positively related to the PC’s organizational performance.

4. Data and methods

4.1. Sample and research design

We tested the hypotheses by using data from qualitative interviews. We questioned 12 investment professionals of 7 selected CVCs in Germany. Because the interviewed CVCs all had more than one PC in their portfolio, they provided information about 20 PCs and the relationship to these PCs. Our sample included only investments into seed-stage and early-stage companies. Additionally, the selection of the considered relationship was guided by the explicit inclusion of at least one badly performing, one successfully performing PC, and only those PCs for which a high degree of innovativeness was ensured (O’Connor and McDermott, 2004; Salomo et al., 2004). In 12 of the PCs in the sample, we conducted interviews with either the founder or the CEO asking them the same questions as those posed to the CVCs. Our dataset contains 32 data points in all.

We used partially standardized-open, guideline-supported interviews. The interview included a narrative part and an interrogative part following the guideline. The narrative part followed the survey concept of narrative interviews. The interrogative part followed the principle of communicativeness. In addition, ad hoc questions were asked in order to ensure mutual understanding (Lamnek, 1995). All relevant relationships into the entire organization and with its cooperating business units (not just the CVC) were taken into account when we asked about and later analyzed the knowledge acquisition and transfer between the partners. All information was classified into previously developed categories.

We took several steps to ensure the validity and reliability of the survey data. First, we pretested the guideline with three investment managers who backed innovative new ventures and three founders or CEOs of such ventures. We then tested consistency as well as intercoder-reliability. After coding all the information, we asked several interview partners to use a five-point scale to cross-check some of our estimations of their answers about mapping. Because the
interview partners corrected us in only two cases, and even then only marginally, we regarded this additional cross check as having indicated a high degree of reliability. Specific quality criteria of content analysis such as the validity of the interview situation, authenticity, stability, and replicability served as additional measures of the guideline’s validity and reliability (Miles and Huberman, 1994).

4.2. Research tools

We subjected the data to quantitative content analysis (Mayring, 1983), a technique of which we used the scaling structuring (or intensity analysis). The data was categorized and then ranked on a five-point scale of intensity. For each interview, we computed the mean of all coded and rated text passages in every category. We then conducted further quantitative analysis on these means, effectively transforming the qualitative data into a quantitative dataset upon which other classical statistical analyses could be performed as well.

To do so, we used MAXqda, a qualitative quantitative-data-analyzing program comparable to Atlas Ti or Nudist and widely used in social sciences. To our knowledge, we are the first to apply such software to this kind of qualitative quantitative analysis in the VC-entrepreneurship research. Given the increasing importance of qualitative aspects in the entrepreneurship research, this software seems particularly appropriate and valuable. It helps researchers efficiently analyze large qualitative datasets, identify specific aspects and dimensions, and eventually integrate those aspects and dimensions into a quantitative format that the subject’s complexity might otherwise obscure from the outset. The new quantitative dataset was checked for consistency and completeness and then analyzed with Kendall’s correlation (Kendall’s tau b), principal component, and reliability analyses.

4.3. Dependent variables

4.3.1. Knowledge-sharing routines

We measured knowledge-sharing routines by means of frequency and intensity of interaction as defined and proposed by De Clercq and Sapienza (2001). Frequency was measured as the overall amount of interaction; intensity, as the kind and formality of interaction (ranging from e-mail to personal meeting). For instance, “I spend 50 percent of my time managing this investment” was given a frequency rating of “5.” As a measurement of intensity, financial reporting (a rather formal kind of interaction) was rated “1” on a five-point Likert scale. By contrast, having a beer together after the board meeting was rated “3.” Instances in which the interviewee deemed the relationship to be a close and very intimate friendship (the feeling that one could talk about almost everything) were assigned a score of “5”: “By now, I have a quite close relationship with X and his wife. We go golfing together once in a while, and I have also invited them to my place in Africa.”

4.3.2. Knowledge transfer and creation

Interviewees were not able to separate clearly between transfer and creation. Because these concepts are interdependent and reiterative, we combined the two aspects. Interviewees were asked what value added they delivered to their partners and what they (the interviewees) or their organizations could learn from or newly develop with the partner. When measuring knowledge transfer and creation, we focused not only on the transfer of explicit and tacit knowledge (know-what and know-how) but also on the social network ties (know-who, which was classified as the
structural dimension of social capital). Data, new technological and financial information, joint workshops, and strategic support were categorized as know-what; experiences, skills, and procedural knowledge were classified as know-how (Kogut and Zander, 1992; Lane and Lubatkin, 1998). Collaboration in terms of common development of specific products and projects fell into both categories. Contacts to new or potentially new investors, clients, suppliers or experts in specific fields, new board members, key executives, and alliance partners were classified as know-who (Maurer, 2003).

In terms of scaling, a “1” was given when the respondent was of the opinion that he or she did not learn anything or did not get any relevant or valuable information or contact from the other party. For instance, in the context of know-who, the prompt read: “It was terribly disappointing. They told us they had many contacts for us, but these contacts turned out to be of absolutely no value for us.” When the interviewee mentioned that almost all relevant contacts came from the other party or that the knowledge exchange with the other party led to a substantial rise in value, a “5” was given: “We [the corporation] gained an enormous competitive advantage through the collaboration with this PC. [The corporation] does produce silicium and [the PC] is responsible for the systems development. For our business unit it was extremely interesting to collaborate with this young company because the intention was to discover and enter a completely new market. Their technological development seemed extremely suitable.”

4.3.3. PC organizational performance

We measured performance in terms of sales, sales growth, return, and growth in market share (Maurer, 2003; Sorrentino and Williams, 1995). We asked about the absolute amounts of these measures; when applicable, about the growth rates in comparison to the previous year; and about the business plan. For very young PCs, hard facts were often not available yet or not particularly meaningful. Additional information from the interviewee, such as “the company is developing very well” or “we expect to break even in Q3, milestones are achieved, etc.,” was also taken into account and rated. For instance, PCs that performed badly with no improvement and hovered close to insolvency received a rating of “1.” PCs with high sales, large market shares, and even a high return were rated “5.” We computed the variable “PC organizational performance” by using the first component of a principal component analysis that included the three individual performance measures named above.

4.4. Independent variables

We worked primarily with seven independent variables. Each one was categorized as either social capital or knowledge relatedness. Social capital and knowledge relatedness, in turn, were regarded as constituting relational fit. All variables were rated on a five point Likert scale.

4.4.1. Social capital

Structural dimension: social networks. This dimension pertained to personal contacts with and networks of specialists, potential clients, suppliers, additional financiers, and the like to whom direct or indirect access exists (Maurer, 2003). We asked about the prevalence of different networks that the partners activated and made accessible to the other party. A rating of “1” was assigned a statement such as “We gave them everything, laboratories in our own R&D department, contacts to the right business units in the corporation, our patents for little money, services from our press department, simply everything.” It meant that the overlap between the social networks of CVC and PC was very low, that the networks differed substantially. By
contrary, a statement such as “Even though we did expect them to have more valuable contacts for us, we realized they didn’t have so much more in this particular field than we had already before” was rated “4.” A “5” was not assigned.

**Relational dimension: conative fit.** We measured statements that reflected a compatibility of intention to interact and either a willingness to cooperate (Scholl, 2004) or actual cooperation (e.g., the formulation of similar goals jointly manifested, say, in the business plan or in exit discussions, joint workshop sessions, business strategies, or milestones). We paid attention to whether short-, medium-, or long-term goals and the strategy for the PC’s general development were aligned. A “1” on the scale was assigned when an interviewee explained he had the impression that conflicting interests and a power game marked the partnership to which he was a party. “And when they have you in the bag, you have to cut your own seat on which you are sitting. This is how it works; you cannot get out of it anymore. You have to dance with the devil.” By contrast, a “5” was assigned when the respondents perceived compatible goals and a strong willingness to cooperate. They described their partnership “as a marriage where you have to find a compromise” and where you do not give up before you find a solution. They told us about their impression that they were “sitting in the same boat,” which they wanted to guide into the same harbor and could either succeed or all drown together.

**Relational dimension: affective fit.** We considered dimensions such as first impression, perceived chemistry, and sympathy (Scholl, 2004) and the question of whether the interviewee could imagine having a relationship with the partner outside this business relationship (a line of inquiry that approaches the operationalization as developed by Zacharakis, 2002). Sentences such as “he came in, and I had a very bad feeling from the very first moment. I don’t know why. It was more a gut feeling, but I did not like the guy” were rated “1” on the scale. By contrast, statements such as “I would consider him a close friend” and “if we were not in this business relationship, I would like him to become a friend; . . . I could imagine spending my vacation with him” were rated “5.”

**Relational dimension: norms.** Shared norms were believed to exist when people explained that they perceived having common values, beliefs, attitudes, or comparable primary or secondary socialization (Schein, 1985; Trice and Beyer, 1993). A “1” was assigned when the respondents made statements such as “two worlds clashing into each other” or “they come from a totally different background.” A “4” was recorded when people referred to very similar socialization and norms through statements such as “we have known each other since school, and we were in the same peer group” or “we both are Brits coming from the Southwest. We have the same humour; we talk about the Queen’s mother and the English weather; we went to the same business school.” A “5” was not given.

**Relational dimension: trust.** When interviewees described their relationship in terms such as fairness, reliability, integrity, predictability, or justice, we regarded it to be an expression of trust (Manigart et al., 2000; Zacharakis, 2002). If our interview partners mentioned that control, monitoring, or both were of reduced importance, less importance, or no importance because of the quality of the relationship, this response was also interpreted as a high level of trust (Manigart et al., 2000). No trust at all – “I completely lost confidence in them” – was rated “1” on the scale. Statements such as “I trust my partner to 100%” were rated “5.”

### 4.4.2. Knowledge relatedness

We concentrated on know-what and know-how. We asked the interviewees how similar or different their knowledge bases along the two aspects know-what and know-how were at the beginning of their partnership. Nearly identical knowledge between the partners would have
ranked “5” on the scale, but this case did not occur. A very low level of relatedness, reflecting no shared knowledge, was rated “1.”

**Know-what.** Facts concerning technological, managerial, or financial knowledge were categorized as explicit knowledge (Kogut and Zander, 1992; Lane and Lubatkin, 1998). The statement “Essentially these were researchers with no business experience, no marketing, no finance competence, no nothing. However, they had amazingly deep specialized technology knowledge in their segment” was rated as low relatedness: “1.” The statement “On the technological side we could hardly tell them anything new; they are real specialists in this field” was rated “4.”

**Know-how.** Experience and capabilities in certain industries, functions, or activities were categorized as tacit knowledge (Kogut and Zander, 1992; Lane and Lubatkin, 1998). The statement “Our corporation naturally has long-standing experience in the production and marketing/sale of such products of which this PC could benefit tremendously. Because this was their first time, they were not forced to go down the learning curve themselves, but we could tell them how to do it” was rated “1.”

### 5. Results: relationship between relational fit and knowledge transfer

#### 5.1. Relational fit

Expecting high correlations between these variables, we first checked whether social capital, including social networks, conative fit, affective fit, norms, and trust were closely interrelated with knowledge relatedness. Indeed, we found that the four variables of the relational dimension of social capital were highly correlated, the lowest correlation being \( r = .42 \) between norms and trust and the highest being \( r = .68 \) between affective fit and trust (see Table 1). The structural dimension of social capital, social networks, was not significantly correlated to any of the variables in the relational dimension. Knowledge relatedness of facts and knowledge relatedness of capabilities were significantly correlated (\( r = .38 \)). Knowledge relatedness of facts was not significantly correlated to any other variable of social capital. Knowledge relatedness of capabilities was significantly related to affective fit (\( r = .31 \)) and to trust (\( r = .36 \)).

Seeking next to demonstrate that the concept of relational fit was valid, we applied a reliability analysis, which included all seven independent variables discussed above (Cronbach’s adjusted alpha: \( \alpha = 79, n = 7 \)). In addition, we experimented by constructing the variable “relational fit,” conducting principal component analysis. We used the first unrotated component of the analysis (eigenvalue > 1). It included all seven individual variables and explained 49% of the variance (see Table 2). These results support our argument that social capital – consisting of social networks, conative fit, affective fit, norms, and trust – and knowledge relatedness are part of one concept.

The data show that some, but not all, of the independent variables, are highly intercorrelated, especially within the relational dimension of relational fit. To verify the validity of our model further which suggests three subgroups of relational fit (the relational dimension of social capital, the structural dimension of social capital, and knowledge relatedness), we ran an exploratory principal-component analysis with all seven variables and selected the first three rotated components (eigenvalues > 1). By definition, rotated components are uncorrelated. The first three components represented exactly the three theoretically derived subgroups of relational fit and explained 82% of the variance (see Table 2). The principal component analysis thereby creates three new variables that represent uncorrelated dimensions of relational fit.
Table 1
Correlations (Kendall’s tau b), N = 32

<table>
<thead>
<tr>
<th>Variables</th>
<th>Component relational fit</th>
<th>Knowledge-sharing routines</th>
<th>Knowledge transfer</th>
<th>Organizational performance</th>
<th>Factual knowledge</th>
<th>Capability knowledge</th>
<th>Social networks</th>
<th>Conative fit</th>
<th>Affective fit</th>
<th>Norms</th>
<th>Trust</th>
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<td>Component relational fit</td>
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<td></td>
<td>.33*</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factual knowledge</td>
<td>.17</td>
<td>.42**</td>
<td>.36*</td>
<td>.10</td>
<td>1.00</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Capability knowledge</td>
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<td>.31*</td>
<td>.30*</td>
<td>.14</td>
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<td>1.00</td>
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<td></td>
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<td>-.26</td>
<td>-.02</td>
<td>-.04</td>
<td>.08</td>
<td>1.00</td>
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<td>.32*</td>
<td>.50**</td>
<td>.58**</td>
<td>.01</td>
<td>.23</td>
<td>-.07</td>
<td>1.00</td>
<td></td>
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<tr>
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<td>.43**</td>
<td>.46**</td>
<td>.49**</td>
<td>.17</td>
<td>.31*</td>
<td>.05</td>
<td>.66**</td>
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<tr>
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<td>.20</td>
<td>.34*</td>
<td>.02</td>
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<td>.15</td>
<td>.65**</td>
<td>.48**</td>
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<td>.61**</td>
<td>.68*</td>
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<tr>
<td>Knowledge transfer</td>
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<td>.43**</td>
<td>1.00</td>
<td>.59**</td>
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<tr>
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<td>.43**</td>
<td>.56**</td>
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<tr>
<td>Component knowledge</td>
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<td>.32*</td>
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<td></td>
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</table>

* Correlation is significant at the .05 level (two-tailed).
** Correlation is significant at the .01 level (two-tailed).
5.2. Relational fit and knowledge transfer

The individual hypotheses outlined in the previous sections were tested primarily on the basis of descriptive statistics using Kendall’s correlation (see Fig. 2).

- **Hypothesis 1**, suggesting that knowledge-sharing routines are positively related to knowledge transfer and creation, was confirmed ($r = .43$).
- **Hypothesis 2.1**, suggesting that a high overlap of social networks between the two partners is negatively correlated with knowledge transfer, was not confirmed ($r = - .26$). We presently have no explanation for this surprising result. It might be due to the small sample. Perhaps our method of data collection was not sufficiently applicable to map the social network ties precisely. Our results so far suggest that social networks are less important for knowledge transfer than other factors are.
- **Hypothesis 2.2** was confirmed as well ($r = .50$). It argues that the conative fit (willingness to cooperate) positively influences knowledge transfer. These results are in line with Scholl’s (1996) findings.
- **Hypothesis 2.3**, which postulates that affective fit increases knowledge transfer, was confirmed ($r = .43$). These results are in line with Scholl’s (1996) findings.
- **Hypothesis 2.4**, venturing that a high degree of norms between CVCs and innovative PCs is positively related with knowledge transfer, was not confirmed. This result is not entirely surprising. As discussed above, different norms can have a positive or negative effect on knowledge transfer. Although we believe that the positive influence of norms prevails, our results were not clear.
Hypothesis 2.5, which argues that trust positively influences knowledge transfer, was confirmed ($r = .34$). The results are consistent with previous findings that people are more inclined to engage in social exchange when personal relationships are high in trust (see discussion and literature above).

Hypotheses 2.6 and 2.7 argue that know-what and know-how do not have linear relationships with knowledge transfer. We do not know the exact function, but theory suggests that the relationship is an inverted U-shape. We therefore approximated the term of the function with a quadratic one. Although the dataset was admittedly very small, statistical curve estimations corroborated the nonlinearity of the relationships and supported the quadratic approximation. We consequently squared the two independent variables “know-what” and “know-how” and used the quadratic terms for all further analyses. The correlation results were significant and confirmed both hypotheses ($r = .36$ and $.30$, respectively).

Hypothesis 3, which suggests that knowledge transfer has a positive effect on a PC’s organizational performance, was strongly confirmed ($r = .59$). These results were consistent with the findings of previous research.

6. Discussion and conclusion

Corporations striving for radical innovation use CVC units as a means to explore the resources of new technology companies for their own radical innovation purposes. This study demonstrates that “relational fit” is a new construct comprising social capital and knowledge relatedness. The data also show that “relational fit” between CVCs and PCs is highly correlated with knowledge transfer and partially correlated with organizational performance. Because regression analysis would be inappropriate for the size of our dataset, we cannot test the direction of influence between relational fit and knowledge transfer or between knowledge transfer and organizational
performance. However, exploratory calculations of regression that are not presented in this article do indicate the directions we suggest. Overall, the data analyses support our hypotheses that both social capital and knowledge relatedness affect knowledge transfer; that the new concept of relational fit, constituting two variables of knowledge relatedness and five variables of social capital, is valid and coherent; and that knowledge transfer influences organizational performance and competitive advantage.

None of the relational fit variables (except “trust”) shows dramatically different correlation results when correlated with “knowledge-sharing routines” or “knowledge transfer.” Although the correlation factor differs from case to case, sometimes even strongly (with conative fit, for example, ranging from $r = .32$ to $.50$), the direction is always the same, and the correlation with knowledge transfer is usually stronger than with knowledge-sharing routines. These results call into question the role of knowledge-sharing routines in our model where we suggest that they indirectly support and enable knowledge transfer and creation. It could be that knowledge-sharing routines and knowledge transfer partially measure the same dimensions. If so, knowledge-sharing routines could possibly be eliminated from the model. However, given the relatively moderate correlation of the two variables ($r = .43$), we assume that there are sufficient differences between them. It might therefore be helpful to review the way knowledge-sharing routines are measured. Our model might be correct, but imprecise measurement of knowledge-sharing routines and the preclusion of regression analysis because of the small size of the sample prevent us from showing it.

In our model we say that relational fit affects organizational performance indirectly via knowledge transfer rather than directly. As mentioned above, the correlation results do not permit us to test this second-order relationship. All we can say is that knowledge transfer and organizational performance are highly correlated (Hypothesis 3) and that some of the relational fit variables as well as “knowledge-sharing routines” have significantly different correlations with knowledge transfer than with sales, our measurement for organizational performance. For instance, the variable “knowledge-sharing routines” correlates highly with “knowledge transfer” but not significantly with “organizational performance.” The same assessment applies to “knowledge relatedness of facts” and “knowledge relatedness of capabilities.” The opposite is true for “norms” and “trust,” where the correlation with “knowledge transfer” is lower than with “organizational performance.” These results suggest that truly different concepts are measured. Again, tentative regression analyses, which are not presented in this article because of the small sample size, support this conclusion.

Our study has its limitations. One of them is it’s small number of cases, which permits only an exploratory analysis of the data. A quantitative analysis based on a larger number of cases would be desirable because it would make it possible to test the validity of our model and perhaps improve it. The restricted data base also made it advisable to avoid differentiating between statements of CVCs and PCs, leaving us unable at this time to say whether the various parties perceive fundamental differences between the variables constituting relational fit. Nor can we currently determine whether we were dealing with opposite statements about the same matter or experienced event. Only penetrating, detailed analysis of these aspects will begin to answer the question of whether a relational fit between the partners requires them to hold identical, or at least very similar, views and facilitate correspondingly similar statements about individual variables. That kind of further study would also give insight into the question of whether complementary statements about a given variable would “function” likewise, or even better.

Lastly, this study captures only one point in time and, hence, does not depict the dynamics inherent every relationship. It would thus be instructive to find out whether our portrayal of relational fit within these partnerships – in the area of trust, for example – changes over time. A
subsequent study (Weber, 2005) in which we gathered new data will enable us to throw light on this aspect. One difficulty, however, is that some of the participants in this more recent work have left the companies, so the sample is no longer the same as the one reported on in this article. This change limits the continuity of the statements issuing from the corresponding CVCs over time. Some corporations represented in the earlier study have completely dissolved their CVC programs, which are thus no longer available for comparative purposes. Moreover, replication of the research we have done on German CVCs and PCs would be desirable in other appropriate industries.

Our study makes several contributions to the literature. First, we expand social capital theory by explaining two hitherto neglected aspects of social capital: conative fit (the partners’ intention and willingness to cooperate) and affective fit (the functional compatibility of emotions between two or more individuals or small groups). Second, we couple social capital theory with the knowledge-based view of the firm, demonstrating the interrelatedness, combined importance, and explanatory power of knowledge and dimensions of social capital. Third, we take developments in social capital theory and knowledge relatedness and extend them to interfirm relationships of new ventures with their CVC. We thereby not only broaden the understanding of this particular relationship but also develop a model with important generalizable dimensions that could be applied to other interorganizational settings. Lastly, we are, to our knowledge, the first researchers of entrepreneurship who transform collected qualitative data into a quantitative dataset with the aid of appropriate software. This approach has enabled us to run quantitative statistical analyses that have strengthened our results and underlined the explanatory power of our model more than customary qualitative research techniques might have allowed.

Theoretical insights aside, CVCs and PCs benefit most from this investigation, for its results have practical implications for the way they do business. CVCs and PCs must give priority to relational aspects and the potential for knowledge transfer before entering into a long-term relationship. The best technology of a young PC and the incomparable resources of a major corporation are unlikely to yield radical innovation if relational misfits prevent the partners from jointly exploring and exploiting their different knowledge bases. This conclusion applies to both parties: to PCs in their search for a strategic investor from whom they can expect financing, relevant and valuable knowledge, and other complementary resources, and to CVCs in their search for the PCs that will ultimately facilitate radical rather than just moderate innovation.

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