This paper examines the impact of managers' social capital on managerial performance. Two dimensions of social capital are compared—the structural embeddedness (i.e., configuration) of a manager's network of work relations and the relational embeddedness (i.e., quality) of those relations. Based on a sample of 120 product and sales managers in a Fortune 100 pharmaceutical firm, this paper presents evidence indicating that both elements of social capital influence managerial performance, although in distinct ways: structural embeddedness plays a stronger role in explaining more routine, execution-oriented tasks (managerial sales performance), whereas relational embeddedness plays a stronger role in explaining new, innovation-oriented tasks (managerial performance in product and process innovation). This research considers resource exchanges within firms as key to value creating behaviors and contributes a deeper understanding of how social capital influences productive resource exchanges.
particular attention to the individual level, the focus of this study, an abbreviated list of the many benefits commonly attributed to social capital includes more timely and novel information or know-how, greater political control and maneuverability, and enhanced status.

Beyond the broad consensus about the importance of one’s social relations (Burt, 2000), there is debate surrounding several issues regarding social capital’s operational definition and the mechanisms through which it has its impact. Two issues in particular are central to this debate. One is whether network structure alone is all that need be considered in theorizing about social capital or in empirically exploring its benefits. In particular, when considering social capital’s impact on performance, is it enough to focus exclusively on whom one knows, without taking into account how well one knows them? The second issue is concerned more specifically with the way in which social structure exerts its influence on performance. Here, scholars disagree about the relative merits of closed networks—where all of an individual’s important contacts know each other—vs. networks characterized by structural holes—where one’s contacts are mostly unacquainted.

In this paper, I seek to advance the debate on these two issues in several important ways. First, I develop and find support for the claim that the effectiveness of one’s social capital rests on more than just the structural configuration of one’s network. In addition to structural embeddedness, which is by far the most common conceptualization of social capital, I find relational embeddedness is also important. In other words, in considering how one’s network of contacts affects performance, the configuration of that network is not all that matters; the quality of one’s relationships matters too. Second, I unpack the concept of structural embeddedness to shed light on seemingly competing claims for the relative value or primacy of network closure (Coleman, 1988, 1990) and structural holes (Burt, 1992a). Uniquely, support is found for both features of network structure, illustrating how some organizational contexts can simultaneously accommodate and reward individuals who pursue either closure or structural hole strategies, while punishing those who focus on neither strategy.

Finally, this study is distinct in its measures of performance outcomes. While social capital has been shown to influence outcomes of importance to individuals—such as career advancement speed, personal power, and compensation (e.g., Burt, 1992a; Brass and Burkhardt, 1993; Ibarra, 1995; Belliveau, O’Reilly, and Wade, 1996; Podolny and Baron, 1997)—there is much less empirical work on the link between individual-level social capital and managerial performance, that is, outcomes where the conceptual links to firm benefit are more apparent.

This study of 120 product and sales managers in a large pharmaceutical company explores the influence of social capital on the propensity of these managers to excel along two performance dimensions that are independently assessed by superiors and acknowledged as important to the firm’s success: more routine, execution-oriented performance (a manager’s contribution to product sales) and innovation-oriented performance (a manager’s contribution to product/process innovations within the firm). Moreover, inherent differences in the level of uncertainty surrounding these two modes of performance allow us to look for contingencies. A notable finding of the study is that, while both forms of embeddedness matter to performance, structural embeddedness plays a stronger role in explaining execution-oriented tasks while relational embeddedness plays a stronger role in explaining innovation-oriented tasks.

The next section lays out the theoretical background and further develops the two central issues noted above. Hypotheses based upon the theoretical development are then formulated, the methods used to test these hypotheses are outlined, and the results are presented. I conclude with a discussion of the findings and their implications for strategic management.

**THE EMBEDDEDNESS OF SOCIAL CAPITAL**

Granovetter’s seminal work on the ubiquity of social embeddedness in economic exchange (1985) was an important precursor to the concept of social capital. His insights stem from a simple but critical regularity in economic exchange that is commonly observed but often ignored: ‘most behavior is closely embedded in networks of interpersonal relations’ (Granovetter, 1985: 504). Granovetter argues that this ubiquity of embeddedness accounts for much of the order (and disorder) that is found in both markets and in firms. His argument

distinguishes and stresses the unique roles that both 'concrete personal relations and structures (or “networks”) of such relations' play in the daily work and accomplishments of all sorts of economic actors (Granovetter, 1985: 490; parentheses and quotes in original). Even in this early work, Granovetter distinguishes between the concrete, personal relations themselves and the aggregate configuration of those relations in some structural form. This latter, ‘structural’ aspect of embeddedness, however, has received far more attention in social capital research than the former.

Despite the greater attention to structural embeddedness, scholars disagree on what kind of network structure is ‘best.’ Even on the question of individual performance and advancement, Gargiulo and Benassi (2000: 184) argue there is still ‘a fundamental disagreement about the network structure responsible for [social capital’s] benefit.’ On one side of the debate is Ron Burt’s structural hole theory (Burt, 1992a). Burt argues that the benefit of social capital stems from non-redundant ties, or, more precisely, from the absence of ties among those to whom one is connected (i.e., structural holes). When one’s contacts are themselves unacquainted, they are more likely to provide access to different and thereby non-redundant sources of information and resources. Burt builds his argument on Granovetter’s (1973) seminal insight that weak ties are more likely than strong ties to act as bridges to novel or more timely information. The value of weak ties, Burt argues, stems not from their lack of strength per se but from their greater propensity to bridge otherwise disconnected groups and, thereby, to make it more likely that such ties will serve as conduits carrying more information that is likely to be unique and therefore more valuable. Moreover, the absence of ties among one’s contacts places that person in a position to broker the information among those contacts and thereby enjoy the benefits of greater control over its dissemination and use.

A competing view is that advanced by James Coleman (1988, 1990), who—along with Bourdieu (1986)—was largely responsible for introducing the concept of social capital to the literature. Coleman argues that the power of social capital comes through closed networks of personal relations that engender robust individual and collective action. Because all of one’s contacts in closed networks know and interact with each other, they are more likely (than in open networks) to convey and reinforce norms of exchange and more easily able to monitor their observance and enforce sanctions. Having and observing group norms reduces much of the uncertainty surrounding exchange. Closed networks also facilitate the accrual of obligations or favors that can be drawn upon as needed, and then replenished, thereby sustaining the network and adding to the value of its underlying capital (Coleman, 1988). The resulting social cohesion engendered by a closed network structure reduces exchange risk, enhancing the likelihood that actors so positioned will obtain the cooperation and resources of others. Whereas the benefits of structural holes are non-redundant information and greater freedom to exploit it, network closure has impact precisely because certain information (group norms and rules) is redundant and so helps to constrain exploitive behavior and to promote cooperation. Hence, network closure creates value from the very redundancy and constraint that destroy the value of structural holes. Very few empirical studies, however, have attempted to parse out the effects of holes vs. closure at the individual level (Podolny and Baron, 1997, is one example; at the firm level, see Walker et al., 1997).

Alongside this issue of the benefits and costs of having ties to others who are more or less acquainted, there is the second issue regarding the importance of the nature of those ties. That is, in comparison with network structure, to what extent does the quality of one’s relationships matter? Again, on one side of this issue are those who, like Burt, tend to ‘set the whole issue to one side as person-specific and presume that it is resolved by the able player’ (Burt, 1992a: 16) and thereby reassert the primacy of network structure. On the other side are a growing number of scholars who view the value of social capital as affected by more than the structure of one’s ties (Uzzi, 1997; Nahapiet and Ghoshal, 1998; Leana and Van Buren, 1999; Adler and Kwon, 2002). Rooted in Granovetter’s original conceptualization of embeddedness, this broader view makes explicit the distinction between what Granovetter (1992) labels structural and relational embeddedness—a distinction essentially between the configuration of one’s network and the quality of those relationships. ‘The fact that economic action and outcomes, like all social action and outcomes, are affected by actors’ dyadic (pair wise) relations and by the structure of the overall network of relations’ (Granovetter, 1992: 33; emphasis and parentheses.

in original), suggests that it is difficult to explain productive exchange without taking both dimensions into account. Both are likely to feature in our understanding of the role that embeddedness plays in productive exchange (Moran and Ghoshal, 1999; Rowley et al., 2000).

Refining Granovetter’s conceptualization of embeddedness, Nahapiet and Ghoshal provide more substantive definitions for both dimensions. They define structural embeddedness as ‘the impersonal configuration of linkages between people or units’ (Nahapiet and Ghoshal, 1998: 244). These include the presence or absence of network ties between actors, along with other structural features like connectivity, centrality and hierarchy. In contrast to the ‘impersonal’ nature of structural embeddedness, Nahapiet and Ghoshal define relational embeddedness as the ‘personal relationships people have developed with each other through a history of interactions’ (Nahapiet and Ghoshal, 1998: 244). Key facets of relational embeddedness include interpersonal trust and trustworthiness, overlapping identities, and feelings of closeness or interpersonal solidarity. Unfortunately, such dyad-specific qualities of social capital have been given much less empirical attention (see Uzzi, 1997; Lawler and Yoon, 1998) and, as Rowley et al. (2000) argue, they have not been empirically disentangled from social capital’s structural attributes. The question remains: What is the relative impact of structural and relational embeddedness on managerial performance?

SOCIAL CAPITAL AND MANAGERIAL PERFORMANCE

My focus here is on individual-level social capital. To be sure, considerable attention has already been directed at understanding social capital and its various outcomes at this level. Nearly all of this work, however, has been directed at explaining and demonstrating the personal value of individual-level social capital. For example, social capital has been shown to enhance an individual’s job search (Granovetter, 1973; Lin, Ensel, and Vaughn, 1981), advancement potential and speed (Burt, 1992a; Ibarra, 1995; Podolny and Baron, 1997), compensation (Belliveau et al., 1996; Burt, 1997), and power and influence (Krackhardt, 1990; Brass and Burkhardt, 1993). Note that, in each of these examples, the value of the outcomes are at best only indirectly associated with any benefit to the firm. Indeed, in each case these examples of personal gain could just as easily be examples of the exploitation of social capital in ways that are detrimental to the firm. As Leana and Van Buren point out, there is growing recognition that considerable tension can exist between the private and public benefits of social capital. They argue, ‘There is no guarantee that the manager with a well-developed intrafirm network will use it (and the concomitant information the network provides) to support organizational objectives’ (Leana and Van Buren, 1999: 546). The value of individual-level social capital to outcomes that are more directly linked to the firm’s strategic objectives remains an open question and one that I seek to address in this study. Specifically, the empirical setting of this study allows me to measure two basic features of managerial work: execution-oriented performance (a manager’s contribution to product sales) and innovation-oriented performance (the manager’s ability to devise and implement novel initiatives within the firm). How well managers perform these tasks is central to the strategic objectives of the firm in this study.

**Structural embeddedness and managerial task performance**

The structuralist conception of social capital focuses on the advantages conferred by the configuration of an actor’s network of contacts. Among these advantages, those that come from having contacts who are more or less connected to each other have received perhaps the most attention (Simmel, 1950 (1923); Bonacich, 1987; Coleman, 1990; Burt, 1992a). The argument within this perspective that has been most systematically addressed is that those who have sparse networks of contacts who are not connected to one another benefit most. As developed extensively by Burt (1992a, 2000), the instrumental value to managers of having such sparse social networks accrues largely from privileged access to information and greater control over its use. Both advantages should also enable mangers to create more value for their firm.

The information advantages of sparse social networks are well established. The less one’s contacts know and interact with each other, the more likely the information and knowledge available to these contacts will be non-redundant. A manager with such non-redundant contacts has access to a
broader range of people who typically will have access to more diverse information and knowledge. Whether it takes the form of current news and gossip or more substantive data or know-how, the information’s non-redundancy makes it more valuable as it positions the manager to learn of the information sooner, discover discrepancies or inconsistencies more easily, and to control its diffusion more selectively. To the extent such broad access to valuable information permits the manager to learn of more opportunities, see them faster and assess their value more broadly, it should enable him or her to boost sales. Greater access to diverse perspectives and know-how should also aid task innovation (Hargadon and Sutton 1997).

Whereas the information advantages of sparse networks stem from the diversity associated with unconnected ties, control advantages come from the relative scarcity of the information and from the autonomy or freedom from constraint that accompany such ties. A lack of ties among a manager’s contacts means that the diverse information available from any one contact is likely to be scarce and therefore more valuable to the others, who depend upon the manager to channel the information to them. This gives the manager more discretion over deciding what to do with the information and resources within her reach.

As Simmel (1950 (1923)) pointed out, the value of being a tertius, the third player among unconnected others, is the competition it engenders for the tertius’s time, energy, and other resources. Such competition, increases the scarcity of the tertius’s resources, enhancing their value and elevating the prestige and power of the tertius (Cialdini 1988: 226). Moreover, by suitably channeling communications, the manager is better able to attract positive attention and other scarce resources. As ‘accurate, ambiguous, or distorted information is moved between contacts by the tertius’ (Burt, 1992a: 33), tertius attains greater maneuverability, influence, and control (see also Padgett and Ansell, 1993).

Concretely, managers can use this ‘multi-vocal’ position of the tertius to frame issues in such a way so as to enhance the appearance of competition for their time and resources, and so engender greater prestige and power (Burt, 1992a: 31). They may even choose to bring together two or more distant contacts, while maintaining considerable control over whose interests will be served through the union. Even though bringing contacts together lessens their dependence on the manager, the engendering of good favor, deference, and a sense of obligation toward the manager—all useful resources—may offset any reduction in control.

Greater autonomy and control should help managers execute their various ongoing tasks and responsibilities, as well as those required for innovation. As both Bower (1970) and Burgelman (1983) have pointed out, greater autonomy and maneuverability among managers allows them to disguise entrepreneurial activity, making it possible to commit to projects that may initially be hard to justify, and to pursue them longer, while shielding them from premature exposure and scrutiny.

All these advantages of structural embeddedness are enhanced by network size. As Emerson (1962) suggests, having more contacts creates more alternatives for obtaining a valued resource and more ideas, and control over, the use of those resources. Burt too agrees that ‘bigger is better’ but notes that ‘size is a mixed blessing’ (Burt, 1992a: 16). To the extent that very large networks can be difficult to maintain and could suffer from diminishing returns, managers have an incentive to keep their networks a manageable size and to choose their key contacts carefully.

To summarize, information and control advantages should accrue to managers who have more contacts who are themselves unconnected to each other. Notwithstanding the added leeway that greater autonomy and control create for a manager to benefit herself at the expense of the firm, these information and control benefits should also be reflected in the manager’s performance in both sales and innovation tasks. Operationalizing these arguments, I follow Podolny and Baron (1997) in their use of the term direct ties to refer to ties between a manager and his or her contacts and the term indirect ties to refer to the ties among a manager’s contacts. Because the number of indirect ties that are possible increases directly with the number of direct ties (i.e., $n(n-1)/2$), I use the proportion of indirect ties to indicate the interconnectedness of one’s contacts. Thus, the benefits of social capital should accrue to managers with more unconnected contacts, or in other words with more direct ties (i.e., a larger network) and fewer indirect ties (i.e., a position that is full of structural holes).

Hypothesis 1: Managerial task performance (execution-oriented and innovation-oriented)
increases with the number of direct ties in the manager’s network.

**Hypothesis 2:** Managerial task performance (execution-oriented and innovation-oriented) diminishes with the proportion of indirect ties in the manager’s network.

Although there is consensus that larger networks of non-redundant contacts provide advantages for accessing and controlling information and other resources, there are also compelling arguments in favor of closure. Closed (and so entirely redundant) networks may also have advantages for execution and innovation-oriented tasks (Coleman, 1988, 1990: 275–278, 318–320). Whereas structural hole theory focuses on the benefits of one’s ability to exploit unconstrained network positions, the closure argument emphasizes the benefits of that very constraint. Closure, Coleman argues, introduces useful constraint in the form of exchange-inducing social norms and supporting sanctions which amount to ‘public goods’ (Coleman, 1990: 116). These public goods engender a high degree of mutual obligation, to the point where favors are done freely, naturally, and without any accounting. Such effects, he argues, ensure the ‘opposite of free riding,’ not only through more efficient cheater detection and sanctions, but also via the generation of ‘excessively zealous activity,’ as a group identity is formed and cooperative routines are solidified (Coleman, 1990: 277).

The formation of a group identity and shared contextual understanding is especially likely to facilitate the transfer of less tangible resources and tacit knowledge. For example, Hansen (1999) finds that dense, intertwined networks improve the actual transfer of (as opposed to simply the search for) rich, non-codified information. The cohesion created by closure not only increases the extent and speed of information transfer among group members, but also gives them additional assurances on how such information will be used. As Granovetter suggests:

> To the extent that a dyad’s mutual contacts are connected to one another, there is more efficient information spread about what members of the pair are doing, and thus better ability to shape that behavior. Such cohesive groups are better not only at spreading information, but also at generating normative, symbolic, and cultural structures that affect our behavior. (Granovetter, 1992: 35)

Podolny and Baron (1997: 676), argue that such a redundant network of ties is often a precondition for ‘internalizing a clear and consistent set of expectations and values in order to be effective in one’s role.’ Closed networks reduce both the uncertainty surrounding exchange and the risk that resources offered in exchange will be used in ways that may be detrimental to the offering party or others in the network. Coleman concurs and further sharpens the argument by suggesting that even nearly closed networks may be not be sufficiently cohesive to induce the necessary level of constraint—or group identity—required for such norms to be effective. In comparing a structure with full closure to one that is nearly closed, he argues, ‘When there is closure, ... norms and reputations can develop that keep the actors in the system from imposing externalities on one another. When closure is not present, ... those norms and reputations cannot develop’ (Coleman, 1990: 320). Both execution and innovation-oriented task performance are likely to benefit from network closure (for related arguments at the firm level see Walker et al., 1997).

As others have suggested (Portes, 1998; Rowley et al., 2000) and this paper aims to show, it is important to distinguish the structural mechanisms at play from the relational (interpersonal) ones. For this reason, the structural and group-induced advantages of closed networks—provided through the formation of exchange norms, routines, sanctions, and even a common cognitive context (see Walker, 1985)—are considered separately from the strictly dyadic or interpersonal factors, such as the quality of the specific relationship, manifest in interpersonal closeness and relational trust.

In sum, there are arguments and evidence suggesting that network closure can be a facilitator of both execution and innovation-oriented task performance. The few studies that have compared network closure and structural holes arguments (e.g., Podolny and Baron, 1997) have relied on reversing the expected sign of the relationship hypothesized for structural holes—that is, evidence for closure amounts to performance increasing with the presence of indirect ties. However, such a test presupposes that the benefits from one—either non-redundancy or closure—dominate the benefits from the other. This need not be the case—either
strategy may be viable. Some managers may derive benefit from the non-redundancy of information and brokering opportunities of networks full of structural holes, while others may gain from the exchange speed and reliability that comes from participating in a closed, cohesive group. Specifically, managers with many unconnected contacts are expected to perform well and performance should deteriorate for managers with more indirect ties (which is consistent with Burt’s structural holes argument) but, following Coleman (1990), there should also be a marked increase in task performance upon network closure. Hence:

**Hypothesis 3:** Managerial task performance (execution-oriented and innovation-oriented) is greater for managers whose networks are closed (all possible indirect ties exist) than for managers whose networks are not closed.

### Relational embeddedness and managerial task performance

While structural embeddedness determines the extent and range of resources that are within a manager’s reach, relational embeddedness establishes how much of this potential will be realized. In other words, the quality of social relations influences which of those resources that are within reach will be accessed, and to what extent. Although an actor may have access to several people who are potentially critical sources of information, personal experience and the quality of past interactions will often influence whom he or she is likely to approach and engage. As Granovetter suggests, ‘better than the statement that someone is known to be reliable is information from a trusted informant that he has dealt with that individual and found him so. Even better is information from one’s own past dealings with that person’ (Granovetter, 1985: 490).

Two attributes of social relations that are used to characterize the relational embeddedness of social capital are closeness and trust. These represent progressively deeper degrees of relational quality: from proclivity to provide resources vis-a-vis personal familiarity (relational closeness) to a deep sense of the contact’s reliability and faithfulness in resource exchange (interpersonal trust).

#### Relational closeness

Relational closeness refers to the extent of personal familiarity in a relationship. Uzzi (1996, 1997) notes that all the accounts of exchange relationships he compiled through his ethnographic study of 23 apparel firms can be classified at one of two ends of a single closeness continuum: ‘arm’s-length’ relationships or ‘close’ relationships. Similarly, Bourdieu’s original designation of social capital emphasizes that the usefulness of social capital rises from ‘lasting’ and ‘durable’ social relations, which require the expenditure of significant ‘time and energy’ (Bourdieu, 1986: 249–250), implying relations that have a considerable degree of familiarity and mutual regard. Whereas the existence of a tie provides the potential for either party to access the resources available from the other, relational closeness shapes the willingness of either party to actually provide those resources; he or she is more likely to offer information, know-how, or aid to others who are close, than to those more distant. Granovetter appears to concur, as we can see from this clarification of his weak tie argument.

... strong ties can also have value. Weak ties provide people with access to information and resources beyond those available in their own social circle; but strong ties have greater motivation to be of assistance and are typically more easily available. (Granovetter, 1983: 209)

‘In fact,’ argues Podolny, ‘controlling for the extent to which a tie serves as a bridge to distinctive sources of information, stronger ties are actually more beneficial than weak ties since they allow a greater volume of resources to move between actors’ (Podolny, 2001: 34). It follows, then, that once we have controlled for the bridging effect of weak ties (i.e., Burt’s structural holes reinterpretation of weak ties), greater relational closeness is likely to increase the transfer of resources, in general, and the transfer of tacit and complex knowledge, in particular—as close contacts are generally more willing to take the time to carefully explain, detail, or listen to novel or complex, ideas (Granovetter, 1985; Uzzi, 1996; Hansen, 1999), enjoying the ‘emotional buzz’ of a cohesive dyadic relation (Lawler and Yoon, 1998). As Nohria (1992) suggests, close contacts are also more willing to support and encourage innovative ventures, giving the entrepreneurial manager the confidence he or she needs to turn ideas into successful projects.
Hence, relational closeness should have a positive impact on both execution-oriented and innovation-oriented activities and their performance.

**Hypothesis 4:** Managerial task performance (execution-oriented and innovation-oriented) is enhanced by closeness to contacts.

**Relational trust**

Trust is an essential prerequisite for most forms of interdependent relationships. It establishes some form of assurance that ego can rely on the intentions and behavior of specific others—in the face of uncertainty and vulnerability—in order to make decisions and act (March and Simon, 1958). Implicit in the notion of social capital is that people often require resources that are controlled by others, and so some degree of uncertainty and reliance upon others is natural. Indeed, Coleman’s view of social capital is particularly sensitive to uncertainty and emphasizes the role of trust in facilitating exchange (Coleman, 1990: 306–308). Trust can be viewed as the basic active ingredient of social capital, the condition that allows an actor to reliably expect to obtain and use the resources made available through one’s contacts (e.g., Gambetta, 1988; Ring and Van de Ven, 1994; McAllister, 1995; Nahapiet and Ghoshal, 1998). Such expectations are vital for the initiation of exchange, enabling an actor to engage (trusted) others when judging ideas, tackling thorny problems, seeking perspective or feedback, and so on. Such confidence in others is also essential if managers are to accept at face value or act upon the information, referrals, and promises of support or cooperation that others provide (see Uzzi, 1996). More generally, where there is high relational trust, more interactive and adaptive exchanges may result, permitting, for example, the discovery of greater novelty (see Moran and Ghoshal, 1999)—this is the difference between a short and possibly guarded hallway conversation about a new idea and active and open brainstorming and tweaking of a new initiative.

Trust stimulates in particular those exchanges that may serve to reinforce and build social capital (Coleman, 1990). As Nahapiet and Ghoshal (1998: 251) argue, trust creates anticipation of value through social interaction with others and thus motivates actors to deepen relations and pursue interactions. As a result, trust not only promotes freer access to people (and acceptance of access) but it also encourages the building of further social capital.

Although trust is multifaceted and visible in many forms—including deterrence-based trust, where the presence of sanctions reduces opportunistic behavior, and reputation-based trust, where referrals and gossip are used to gauge the other party (Rousseau et al., 1998)—the focus here is on relational or interpersonal trust (McAllister, 1995; Rousseau et al., 1998: 399). Such trust is constructed through personal interactions and experiences with the other party, and so is particularly germane to discussions of social capital. Conditions for this form of trust include the assessed integrity of the contact, their competence in ongoing exchanges, and their predictability through the alignment of goals and values (see Butler, 1991; Hosmer, 1995; Rowley et al., 2000).

Notwithstanding the importance of trust to social capital, there is some debate over whether or not it is necessary to establish its existence. For example, even though Burt acknowledges that ‘providing a reliable flow of information ... is a matter of trust, of confidence in the information passed and the care with which contacts look out for your interests’ (Burt, 1992a: 15), he concludes his consideration of trust (and relational embeddedness in general) by noting, ‘the operational guide to the formation of close, trusting relations seems to be that a person more like me is less likely to betray me. For the purposes here, I set the whole issue to one side as person-specific and presume that it is resolved by the able player’ (p. 16). Consequently, establishing the presence of trust has not been considered to be a central issue in the structuralist conception of social capital.

Those studies where trust has been explicitly considered in social capital research concern redundant, cohesive networks, where the visibility of actions places enormous sanctions on opportunistic behavior and thus engenders a form of calculated trust (Coleman, 1988). What has been considered, in other words, is network structure (i.e., closure) as a substitute for trust and not the trust associated with interpersonal relations. Trust, then, is either left unmeasured or else its presence is assumed to be associated with a certain structural form. To the extent that trust is an important element of social capital
and is engendered through *interpersonal* experiences (see Granovetter, 1985; Uzzi, 1996; Rowley *et al*., 2000), it is important to measure it and determine its value, independent of structure. Hence:

**Hypothesis 5:** Managerial task performance (execution-oriented and innovation-oriented) is enhanced by the manager’s relational trust in his or her contacts.

**METHODS**

The setting for my empirical analysis is a *Fortune* 100 company in the pharmaceutical industry, with approximately 170 operating companies worldwide. The company operates across the broad spectrum of business activities in this industry, including basic research, clinical development, and marketing and sales (an integrated function in this firm). The marketing and sales function within the European division is the focus of this study. This division consists of country-based operating subsidiaries, each with profit and loss responsibilities that are focused primarily on marketing and sales duties (R&D and manufacturing are organized centrally). The respondents in these companies are product managers (responsible for marketing products and services) and sales managers (responsible for selling products and services).

The division head arranged our access into 10 operating companies within the division. Division management had recently launched a local effort emphasizing innovativeness among marketing and sales managers. This was part of a visible corporate campaign to turn the firm away from a singular focus on drug research and development—where the corporation was relatively strong—to one also concerned with downstream innovation, such as innovation in the ways that drugs were marketed and delivered to customers. Naturally, local executives became concerned with motivating their product and sales managers to find ways to improve local work practices and product/service offerings, and more generally to increase sales. To this end, they believed it would be useful to have a better understanding of how the social structure surrounding these middle managers influenced their performance, both in terms of sales and innovation. Divisional management, therefore, agreed to the use of a network questionnaire, tailored for this setting and administered to all of the product and sales managers of these 10 operating companies.

In order to better understand the nature of their work and ensure that appropriate response categories and wording for questions were prepared for the questionnaire, preliminary interviews were conducted with a group of product and sales managers and several senior managers of the European division. In general, the targeted managers were found: (a) to be concerned with how well the products under their charge were selling and with finding effective product innovations (e.g., drug delivery format) and process innovations (e.g., approaches for dealing with key customers)—indeed, the jobs of product and sales managers were not greatly differentiated, and it was common for managers to transfer between product and sales management roles; and (b) to believe that access to information, knowledge, and political support was key to doing their jobs. These interviews affirmed the relevance of investigating the link between social capital and managerial task performance in this setting.

The questionnaire asked respondents first for background and demographic information (e.g., age, gender, position) and, second, to complete a standard ego-centered network assessment (Marsden 1990). This assessment consisted of a set of name-generating questions which asked respondents to identify the most important people within their work environment, focusing on the past 12-month period. To protect confidentiality, respondents were allowed to use initials or special codes to name their contacts. Respondents were asked to identify those important or key contacts who make up their task-advice (support in work), social support (friendship), and idea-generation (support with formulating new ideas) networks. In order to build some consistency between extant social network research, the appropriate name-generating questions used by Burt (1992a) and Podolny and Baron (1997) were adapted for this study (see the Appendix). The three name-generating items chosen were broadly relevant to the work of managers in these companies. Following ego-network protocol and in order to keep the questionnaire length

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1 The R&D function was centralized and located outside of these local companies, leaving the marketing managers to be more focused on customer relationships and product localization, and thus closer to the sales function.
reasonable, respondents could list up to five contacts for both the task-advice network and the idea-generation network and up to two contacts for the social support network (see Burt, 1992a, Podolny and Baron, 1997). As such, the name generator was designed to yield networks ranging in size from 1 to 12. Interviews and pretests indicated that this was an adequate range for assessing the key contacts of these product and sales managers, who resided in modest-sized local companies of fewer than 100 total employees, with an average of 20 middle managers. In the final sample, no respondent reported more than 11 key contacts. The average was 6 key contacts.

Respondents were then asked about the contacts they had listed in the name-generating section. Specifically, they were asked questions designed to characterize the quality of their exchange relations, such as closeness and items to measure trust (detailed below) (Marsden, 1990). A senior European human resource executive checked the questionnaire. It was pretested on three managers (one product manager and two managers with experience in both areas), took 60–90 minutes to complete, and was administered through local project liaisons (HR directors).

The questionnaire was sent to all 208 product and sales managers who worked in the 10 country organizations when the study was begun. Out of this target population, 185 were eligible for the study—some had left the firm as the questionnaire was launched while others were not in their jobs long enough (i.e., >6 months) for their performance to be properly evaluated by senior managers (see below). The final sample comprised 120 respondents, whose questionnaires were returned and complete for all key variables. This final response rate (65%), high compared to typical mailed questionnaires (Rossi, Wright, and Anderson, 1983: 83), is high enough to suggest that for relatively minor biases in the characteristics of non-respondents the sample should still reflect well its intended population (Fowler, 1993). Nevertheless, where possible, I sought to confirm that this was the case. Specifically, having collected performance data on all 185 managers, I could test if respondents were better/worse performers than non-respondents. The performance of respondents was statistically no different from that of non-respondents in either sales or innovation performance ($p > 0.8$ level for each measure), suggesting no sample bias in performance levels.

**Dependent variable: Managerial sales and innovation performance**

Three months after the main questionnaire was administered, a separate questionnaire was sent to the human resource directors in each of the 10 companies, our official local liaisons in the project. The lag between the questionnaire and the performance survey was used to reduce the likelihood of effects from reverse causality, endemic to cross-sectional data. The HR directors were asked to provide assessments of the task performance of each of their product and sales managers for the past 6-month period (see also Tsui, 1984; McAllister, 1995) As noted, managerial task performance was measured on two dimensions: sales and innovation. These company HR directors worked in close cooperation with the VP for HR on divisional HR initiatives and shared an informed sense of what it takes for their managers to be good performers; indeed that was their responsibility. For instance, they organized regular divisional symposiums where local innovation work by managers would be shared and disseminated across the group. Managerial innovation in this setting meant managers devising and implementing adaptations to local work practices and product/service offerings. An integrated care program developed by a product manager for psychiatric drugs is a notable example. Targeted at doctors, nurses, and scientists, this program added educational materials and a data analysis procedure to the usual drug offering. A data analysis and ‘e-detailing’ support hub, developed by a sales manager to deliver drug information faster to sales reps in the field, is another example.

The HR directors were asked to carefully consider their managers’ efforts in generating and implementing new ideas in their companies in the past 6 months and then to comparatively rate the managers within their company (on a 1–7 scale, from ‘Weak’ to ‘Outstanding’). Similarly, these directors were asked to carefully consider a manager’s product portfolio and rate the manager’s contribution to the overall sales of those products in the past 6 months (on a 1–7 scale, from ‘Weak’ to ‘Outstanding’; see the Appendix). All 10 of these questionnaires were returned as expected, given our close working relationship with these directors.

These measures seemed particularly appropriate as indicators of performance in this setting because...
differences in the competitive and regulatory climate and in the range and timing of product offerings from country to country would have made objective comparisons problematic. Hence, the company preferred to have local directors make the assessments. Also, since measuring innovativeness at the individual level usually requires some form of qualitative assessment, and often from superiors (Amabile, 1996), the HR directors were in an excellent position to make these assessments. They were a small and natural group who had closely collaborated on innovation issues at this level; they were part of modest-sized local companies, whose middle managers’ careers and performance they kept close and careful track of (and were formally responsible to do so); and their assessments focused on behaviors, not attitudes, for a specific period (cf. Tsui, 1984). Open communication with these liaisons was maintained throughout the study to help clarify any questions or procedures. Deviation scores (raw scores minus country means) were used for each performance measure in order to control for differences in individual performance attributable to the local setting—such as differences in market and regulatory contexts, as well as any anchoring problems that could result in country-level reporting biases.  

**Independent variables: Social capital**

**Direct ties (Hypothesis 1)**

The number of key contacts a manager maintains is measured as the total number of unique direct ties reported (Direct ties). This has a possible range of 0–12 unique key contacts. Table 1 shows the frequency distribution of network size, with most respondents (65%) clustered between five and eight key contacts.

**Indirect ties (Hypotheses 2 and 3)**

Indirect ties represent the extent to which a manager’s contacts know and interact with one another. This is commonly measured in ego-centered studies by asking respondents to assess ties among their contacts (see Burt, 1992a; Podolny and Baron, 1997). To reduce the influence of direct ties, which directly increases the number of indirect ties, I used a proportional density measure, which calculates the number of indirect ties among contacts as the proportion of all possible ties that exist and, therefore, the greater the redundancy of contacts. The lower the value of Indirect ties, the less redundant the contacts, and the more brokering opportunities exist within the network.

**Closeness (Hypothesis 4)**

Closeness is a common measure used in network analysis and asks respondents how close is their

---

**Table 1. Frequency distribution of network size**

<table>
<thead>
<tr>
<th># of direct ties</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>2.50</td>
<td>2.50</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>4.17</td>
<td>6.67</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>7.50</td>
<td>14.17</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>5.83</td>
<td>20.00</td>
</tr>
<tr>
<td>5</td>
<td>11</td>
<td>9.17</td>
<td>29.17</td>
</tr>
<tr>
<td>6</td>
<td>26</td>
<td>21.67</td>
<td>50.83</td>
</tr>
<tr>
<td>7</td>
<td>24</td>
<td>20.00</td>
<td>70.83</td>
</tr>
<tr>
<td>8</td>
<td>17</td>
<td>14.17</td>
<td>85.00</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>6.67</td>
<td>91.67</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>5.83</td>
<td>97.50</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td>2.50</td>
<td>100.00</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

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2 The HR directors’ innovation assessments were consistent with the managers’ own reports of whether they had recently received any non-financial awards or recognition for outstanding achievement. Those receiving awards had significantly higher ($p < 0.02$) innovation scores (0.23) than those who did not ($−0.13$).

3 Although deviation scores have the disadvantage of wiping out any true differences in performance of individual managers across countries, they have the double advantage of controlling for rater inflation of raw scores and any performance advantages as a consequence of country location (i.e., different resource levels, nature of the market). ’Z-scoring,’ which is commonly used to harmonize variance across different scales or to remove variance that can only be rater-related (e.g., when multiple raters rate the same subjects)—neither of which was the case here—was not used because it also wipes out any true differences in performance variance across countries (see also footnote 6).
relationship with each contact (1–5 Likert-type scale, where 1 is ‘distant: arm’s-length’ and 5 is ‘very close’) with emotional distance implied (Marsden and Gorman, 1985; Marsden, 1990). Closeness takes the average level of closeness across a manager’s key contacts.

Relational trust (Hypothesis 5)

Three Likert-type items comprise the scale for relational trust. Dimensions of interpersonal trust developed in research on trust (Cook and Wall, 1980; Butler, 1991) include perceptions of honesty and truthfulness in exchange (Integrity), perceptions of competence in ongoing interactions (Competence), and alignment of goals and values (Predictability). These three items for trust reflect well the nature of trust vis-à-vis social capital. After factor analysis confirmed the existence of a single factor (Relational trust), a scale was constructed with an acceptable alpha (alpha = 0.68; see the Appendix). Compared to McAllister’s (1995) recent measure of interpersonal trust, this measure emphasizes McAllister’s cognitive basis for relational trust (e.g., expectations of competence, integrity and, dependability, based specifically on direct interpersonal exchange and history). Relational trust also takes the average level of trust across contacts.

Control variables

I controlled for three demographic attributes of respondents—age (years), gender (female = 1, male = 0), and educational level (7-point measure, where 1 is no high school education and 7 is a PhD)—as well as their job tenure (months in current position) and staff size (number of direct formal reports). STRUCTURE (Burt, 1992b) was used to analyze the network data and provide the indirect ties measure. Multivariate regression was conducted to test the hypotheses (STATA 6.0). Dummies for product or sales managers were left out as no differences were found for either sales or innovation outcomes; nor were the models significantly impacted. Variable-inflation-factor tests indicated no problems of multicollinearity.

RESULTS

Descriptive statistics and bivariate correlations of all the variables are presented in Table 2. The average respondent was 41 years of age, had spent 5 years in his/her job and had formal post-secondary school education. Twenty-three percent were female. As noted, the average number of key direct ties was six and the largest key network size was 11.

Managerial sales performance

Table 3 reports the effects of social capital on sales performance. Model 1 represents the baseline. None of the control variables have any significant impact in this or in subsequent models, although staff size reaches a modest (p < 0.1, two-tailed test) positive effect (a larger staff size contributes to sales performance).

Models 2 and 3 examine the impact of structural embeddedness (Hypotheses 1, 2, and 3). Model 2 indicates that neither the relationship between Direct ties and sales performance (Hypothesis 1) nor the one between Indirect ties and sales performance (Hypothesis 2) is supported. Although the direction of both effects are as expected—more non-redundant contacts contribute to sales performance—neither is significant.

I tested Hypothesis 3 by adding a variable for network closure in Model 3 (Closed = 1 for fully closed networks, i.e., Indirect ties = 1, and 0 otherwise). As indicated, Hypothesis 3 was supported. Closed is positively related to sales performance (coeff. = 0.69, p < 0.05)—there is a performance boost for those managers with closed networks. Moreover, once fully closed networks are accounted for, both Direct ties and Indirect ties exhibit significant effects (coeff. = 0.09, p < 0.05; coeff. = −1.29, p < 0.05, respectively) on sales performance in the hypothesized directions.

A plot of sales performance for discrete subgroups of progressively more interconnected networks is presented in Figure 1. The result is intriguing. The data reveal an unambiguous decline in sales contribution as networks progressively close off and contacts became more redundant (supporting structural hole theory), and a marked

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4 Cronbach’s alpha, which is an indication of the reliability of the scale, was calculated for the largest number of observations for which all three items in the trust measure were available—i.e., 166 observations. If the alpha calculation is restricted to only the sample of 120 observations that are used in the regressions, its value decreases by 0.04.
Table 2. Correlations and descriptive statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sales</td>
<td>0.00</td>
<td>0.86</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Innovation</td>
<td>0.00</td>
<td>0.94</td>
<td>0.60*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3. Tenure</td>
<td>63.80 months</td>
<td>50.20</td>
<td>-0.10</td>
<td>-0.24*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Staff size</td>
<td>6.64</td>
<td>8.06</td>
<td>0.13</td>
<td>0.16</td>
<td>0.21*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5. Age</td>
<td>40.9 years</td>
<td>7.51</td>
<td>-0.06</td>
<td>-0.28*</td>
<td>0.63*</td>
<td>0.27*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Gender</td>
<td>23% F 77% M</td>
<td>0.42</td>
<td>-0.01</td>
<td>0.16</td>
<td>-0.23*</td>
<td>-0.27*</td>
<td>-0.35*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Education</td>
<td>4.38</td>
<td>1.27</td>
<td>-0.13</td>
<td>-0.02</td>
<td>-0.15</td>
<td>-0.21*</td>
<td>-0.25*</td>
<td>0.26*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Direct ties</td>
<td>6.32</td>
<td>2.27</td>
<td>0.12</td>
<td>0.13</td>
<td>-0.06</td>
<td>-0.16</td>
<td>-0.05</td>
<td>0.06</td>
<td>0.07</td>
<td>1.00</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9. Indirect ties</td>
<td>0.77</td>
<td>0.22</td>
<td>-0.10</td>
<td>-0.08</td>
<td>0.14</td>
<td>0.17</td>
<td>0.10</td>
<td>-0.12</td>
<td>-0.13</td>
<td>-0.31*</td>
<td>1.00</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10. Closed</td>
<td>0.32</td>
<td>0.47</td>
<td>0.06</td>
<td>-0.01</td>
<td>-0.01</td>
<td>0.16</td>
<td>0.00</td>
<td>-0.02</td>
<td>-0.12</td>
<td>-0.50*</td>
<td>0.72*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Closeness</td>
<td>3.79</td>
<td>0.69</td>
<td>0.22*</td>
<td>0.22*</td>
<td>0.18*</td>
<td>0.10</td>
<td>0.21*</td>
<td>0.05</td>
<td>-0.20*</td>
<td>-0.02</td>
<td>0.35*</td>
<td>0.31*</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>12. Rel. trust</td>
<td>4.02</td>
<td>0.51</td>
<td>0.17</td>
<td>0.27*</td>
<td>0.09</td>
<td>0.07</td>
<td>0.21*</td>
<td>0.03</td>
<td>0.01</td>
<td>0.08</td>
<td>0.00</td>
<td>0.07</td>
<td>0.43*</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N = 120; * 0.05 level of significance
jump in performance as networks close completely (supporting Coleman’s closure arguments).5

In sum, Hypotheses 1, 2, and 3 are supported for sales performance—managers with many non-redundant contacts contribute more than their counterparts to sales performance and lose this advantage as their networks close, but only up to the point of full closure, where managers receive a boost to their sales performance.

Turning now to the relational measures of social capital, Model 4 tests the impact of Closeness (Hypothesis 4) on sales performance and shows a positive and significant relationship (coeff. = 0.33, p < 0.01). Model 5 reveals that Hypothesis 5, however, is not supported for sales performance. Although the relationship between Relational trust and sales contribution is positive, it is not significant (coeff. = 0.24, p > 0.12). Model 6 shows the full model—again, all three structural factors and only one of the relational factors (Closeness) are supported. To sum, analyses suggest that, for sales performance, both managers with lots of non-redundant contacts and brokering opportunities and managers operating in closed (exchange-inducing) groups will benefit. Managers who are closer to and more familiar with their contacts will also benefit. However, they need not be in high-trust relationships with these contacts to boost sales performance. In the discussion I will consider why strong relational embeddedness may be less important than strong structural embeddedness for sales performance.

One intriguing question these results lead us to consider is why closed networks are more conducive to sales performance than almost closed networks. There is supporting theory for this result. As noted, Coleman and others emphasize the importance of closure in helping to create powerful group effects and, so, social capital (Coleman, 1990: 318–320; Putnam, 1993; Nahapiet and Ghoshal, 1998; Leana and Van Buren, 1999). Closure is likely to generate powerful social norms,

### Table 3. Regression of managerial SALES performance on measures of social capital

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1 Coeff. (S.E.)</th>
<th>Model 2 Coeff. (S.E.)</th>
<th>Model 3 Coeff. (S.E.)</th>
<th>Model 4 Coeff. (S.E.)</th>
<th>Model 5 Coeff. (S.E.)</th>
<th>Model 6 Coeff. (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.663 (0.642)</td>
<td>0.662 (0.778)</td>
<td>0.789 (0.760)</td>
<td>0.008 (0.794)</td>
<td>0.006 (0.888)</td>
<td>−0.178 (0.879)</td>
</tr>
<tr>
<td>Position tenure</td>
<td>−0.002 (0.002)</td>
<td>−0.002 (0.001)</td>
<td>−0.001 (0.001)</td>
<td>−0.001 (0.002)</td>
<td>−0.001 (0.002)</td>
<td>−0.001 (0.002)</td>
</tr>
<tr>
<td>Staff size</td>
<td>0.016 (0.010)</td>
<td>0.019 (0.011)</td>
<td>0.017 (0.010)</td>
<td>0.017 (0.010)</td>
<td>0.017 (0.011)</td>
<td>0.017 (0.010)</td>
</tr>
<tr>
<td>Age</td>
<td>−0.006 (0.014)</td>
<td>−0.007 (0.014)</td>
<td>−0.006 (0.014)</td>
<td>−0.012 (0.014)</td>
<td>−0.011 (0.014)</td>
<td>−0.013 (0.014)</td>
</tr>
<tr>
<td>Gender</td>
<td>0.052 (0.208)</td>
<td>0.040 (0.207)</td>
<td>−0.011 (0.203)</td>
<td>−0.113 (0.201)</td>
<td>−0.040 (0.202)</td>
<td>−0.115 (0.202)</td>
</tr>
<tr>
<td>Education</td>
<td>−0.091 (0.066)</td>
<td>−0.098 (0.066)</td>
<td>−0.863 (0.064)</td>
<td>−0.660 (0.063)</td>
<td>−0.092 (0.064)</td>
<td>−0.065 (0.064)</td>
</tr>
<tr>
<td>Direct ties</td>
<td>0.046 (0.037)</td>
<td>0.090 (0.039)</td>
<td>0.072 (0.039)</td>
<td>0.080 (0.040)</td>
<td>0.070 (0.039)</td>
<td>0.080 (0.039)</td>
</tr>
<tr>
<td>Indirect ties</td>
<td>−0.344 (0.381)</td>
<td>−1.286 (0.520)</td>
<td>−1.503 (0.512)</td>
<td>−1.207 (0.519)</td>
<td>−1.457 (0.522)</td>
<td>−1.457 (0.522)</td>
</tr>
<tr>
<td>Closed</td>
<td>0.694 (0.268)</td>
<td>0.579 (0.264)</td>
<td>0.625 (0.270)</td>
<td>0.564 (0.267)</td>
<td>0.564 (0.267)</td>
<td>0.564 (0.267)</td>
</tr>
<tr>
<td>Closeness</td>
<td>0.331 (0.123)</td>
<td>0.331 (0.123)</td>
<td>0.331 (0.123)</td>
<td>0.302 (0.135)</td>
<td>0.302 (0.135)</td>
<td>0.302 (0.135)</td>
</tr>
<tr>
<td>Relational trust</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.243 (0.157)</td>
<td>0.243 (0.157)</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.01</td>
<td>0.02</td>
<td>0.07</td>
<td>0.12</td>
<td>0.08</td>
<td>0.11</td>
</tr>
<tr>
<td>F-statistic</td>
<td>1.20</td>
<td>1.35</td>
<td>2.08</td>
<td>2.76</td>
<td>2.14</td>
<td>2.49</td>
</tr>
<tr>
<td># of cases</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

* p < 0.1; ** p < 0.05; *** p < 0.01 (two-tailed tests)

5 Tests for a curvilinear relationship between Indirect Ties (IndirectTies²) and performance were not significant (p > 0.10), suggesting that performance is boosted only when networks are fully closed, as depicted in Figure 1.
such as the speedy and reliable exchange of resources, independent of interpersonal histories. It seems that managers with closed networks must sacrifice the benefits of any non-redundant ties and brokering opportunities to fully appropriate the possible benefits from closed groups, perhaps to reduce distractions or tensions from relatively distant and unconnected others. As Krackhardt argues (1999), managers who try to maintain a close-knit, cohesive group of contacts while also reaching out to one or more unconnected others create, in the process, two or more Simmelian ties or cliques that are likely to compete for the attention, resources and loyalty of the manager, leaving him or her unable to accrue the benefits of either network configuration.

Further analyses comparing managers with closed networks vs. those with almost closed networks (Indirect ties = 0.8–1.0) lent support to such group-induced windfall from closed networks. First, managers with closed networks are more likely to have smaller networks (Direct ties = 4.7 (closed) vs. 7.2 (almost closed), p < 0.001), where group norms are easier to build and deviance is more easily detected. Second, managers with closed networks (vs. almost closed) interacted mostly with others within their own immediate functional unit, containing relatively few outsiders to that unit (i.e., people in other parts of the firm or other firms, whereas managers with almost closed networks were more likely to maintain such contacts). Again, this should make it
easier to establish and to enforce strong group norms. Collectively, this paints a picture of a more identifiable group surrounding these respondents: although they are without diverse, non-redundant ties and their associated benefits, these managers enjoy favorable conditions for generating reliable resource exchanges. In sum, boosts to sales performance are available to managers who completely disavow the maintenance of non-redundant contacts and focus instead on creating close, tight-knit groups; managers playing the other strategy (maximizing non-redundant contacts) do best; managers in between fare worst.

Managerial innovation performance

Table 4 reports results on innovation performance. Model 1 presents the baseline model. There were no statistically significant effects for job tenure, gender, or education level. However, younger employees and those with a larger staff size tended to perform better in innovation tasks. This was consistent across all models.

Model 2 examines the impact of the structural elements of social capital on innovation. Although the direction of effects agrees with Hypotheses 1 and 2, neither Direct ties nor Indirect ties achieves significance in Model 2 (although Indirect ties achieves a modest level of significance in Model 3). Even when examining for the effect of closure (Closed) along the lines presented above (as in Figure 1 and Table 3), the structural variables do not impact innovation outcomes as they did sales outcomes and so Closed was left out of the models.

The relational embeddedness measures, on the other hand, display a marked impact on innovation outcomes. Models 3, 4, and 5 show the impacts of the relational elements of social capital on innovation contribution, net of any structural effects. There is a significant impact of both Closeness (coeff. = 0.44, p < 0.01) and Relational trust (coeff. = 0.57, p < 0.01) on innovation performance. The effect remains for both of these measures of relational quality in the full model (Model 5). Where managers have established familiar/close and high-trust personal relations, they are more likely to be effective innovators in these firms.

Overall, these data suggest that while structural measures (Hypotheses 1, 2, and 3 in Table 3),

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1 Coeff. (S.E.)</th>
<th>Model 2 Coeff. (S.E.)</th>
<th>Model 3 Coeff. (S.E.)</th>
<th>Model 4 Coeff. (S.E.)</th>
<th>Model 5 Coeff. (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.341**</td>
<td>1.118</td>
<td>0.102</td>
<td>−0.567</td>
<td>−0.778</td>
</tr>
<tr>
<td>(0.655)</td>
<td>(0.793)</td>
<td>(0.806)</td>
<td>(0.876)</td>
<td>(0.866)</td>
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<tr>
<td>Position tenure</td>
<td>−0.002</td>
<td>−0.002</td>
<td>−0.002</td>
<td>−0.002</td>
<td>−0.002</td>
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<tr>
<td>(0.002)</td>
<td>(0.002)</td>
<td>(0.002)</td>
<td>(0.002)</td>
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</tr>
<tr>
<td>Staff size</td>
<td>0.031***</td>
<td>0.034***</td>
<td>0.033***</td>
<td>0.031***</td>
<td>0.032***</td>
</tr>
<tr>
<td>(0.011)</td>
<td>(0.011)</td>
<td>(0.010)</td>
<td>(0.010)</td>
<td>(0.010)</td>
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</tr>
<tr>
<td>Age</td>
<td>−0.030***</td>
<td>−0.030***</td>
<td>−0.037***</td>
<td>−0.041***</td>
<td>−0.043***</td>
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<tr>
<td>(0.014)</td>
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<td>(0.014)</td>
<td>(0.014)</td>
<td>(0.014)</td>
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</tr>
<tr>
<td>Gender</td>
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<td>0.031</td>
<td>0.153</td>
<td>0.220</td>
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<td>(0.212)</td>
<td>(0.211)</td>
<td>(0.205)</td>
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<td>(0.200)</td>
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</tr>
<tr>
<td>Education</td>
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<td>−0.062</td>
<td>−0.0251</td>
<td>−0.074</td>
<td>−0.045</td>
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<td>(0.067)</td>
<td>(0.667)</td>
<td>(0.645)</td>
<td>(0.663)</td>
<td>(0.664)</td>
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<tr>
<td>Direct ties</td>
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<td>0.435</td>
<td>0.045</td>
<td>0.039</td>
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<td>(0.057)</td>
<td>(0.036)</td>
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<tr>
<td>Indirect ties</td>
<td>−0.161</td>
<td>−0.661*</td>
<td>−0.195</td>
<td>−0.524</td>
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<tr>
<td>(0.388)</td>
<td>(0.395)</td>
<td>(0.368)</td>
<td>(0.390)</td>
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</tr>
<tr>
<td>Closeness</td>
<td>0.443***</td>
<td>0.300**</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(0.124)</td>
<td>(0.134)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relational trust</td>
<td></td>
<td>0.575***</td>
<td>0.412**</td>
<td></td>
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</tr>
<tr>
<td>(Adj. R²)</td>
<td></td>
<td>(0.154)</td>
<td>(0.168)</td>
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</tr>
<tr>
<td>F-statistic</td>
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<td>3.63***</td>
<td>5.12***</td>
<td>5.29***</td>
<td>5.42***</td>
</tr>
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<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
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</tr>
</tbody>
</table>

*p < 0.1  **p < 0.05  ***p < 0.01 (two-tailed tests)
appear to be more useful in explaining sales performance relative to relational quality measures, the latter (Hypotheses 4 and 5 in Table 4) have the edge in explaining managerial innovation. Additional tests conducted to assess the robustness of the results suggest that these findings do not depend on any specific estimation technique, means of controlling for country-level effects, or specific observations in the sample. I now turn to a broader discussion and explanation of these findings.

DISCUSSION

The importance and growing attractiveness of social capital research (Adler and Kwon, 2002) brings with it some danger that its popularity may be outpacing its conceptual and empirical development. As Hirsch and Levin (1999) note is often true of all wide-umbrella concepts, social capital risks improperly distinguishing different logical motors as it is applied to an increasingly wide range of phenomenon (see Adler and Kwon, 2002). More work is needed where the different theoretical motors are carefully distinguished and tested (for example, at the firm level; see Walker et al., 1997, and Rowley et al., 2000). In particular, at the individual level, there is some risk of an instrumental, competitive view taken through a network structure lens becoming the sole means of insight on the operation of social relations and their benefit as social capital. As the insightful literature on embeddedness testifies (Granovetter, 1973, 1985), there is much more to understand about how social relations and exchange may operate as social capital.

My findings suggest that there needs to be greater recognition that social capital is indeed multifaceted. They also illustrate the need to distinguish and account for both its structural and relational dimensions. In particular, these results point to the influence of relational embeddedness (Closeness and Relational trust) on managerial performance even while holding constant any possible benefits from network structure. In other words, it is not just whom one knows but also the quality of those relationships that matters to individual performance. Moreover, the outcome variables—managerial contributions to sales and innovation performance—are unique in their sensitivity to the strategic interests and success of the firm. Whereas much of the existing literature focused at the individual level has been concerned with relatively private benefits (e.g., workplace mobility, personal power, compensation levels, promotion speed), this study suggests a need to consider and to develop further the ‘public-good’ benefits of social capital (Leana and Van Buren, 1999).

Structural and relational embeddedness in two performance contexts

Not only is social capital important to managerial performance but the structural and relational constituents of social capital have unique effects. This study examines these effects within two performance contexts: task execution and task innovation. To date, most assessments of the contingent value of social capital (i.e., under what conditions will social capital matter) have to do with differences in the personal characteristics among egos—such as personality or gender—or their situation—insider vs. outsider, senior vs. middle manager, number of peers, types of networks—or broad contextual concerns, such as culture (Burt, 2000). There is less attention to how a manager’s social capital may benefit him/her differently when directed at distinct performance goals or contexts.
This study combines both a parsing out of social capital into two distinct forms of embeddedness and an examination of their effectiveness in two distinct performance contexts.

Particularly noteworthy is the finding that while structural embeddedness is more robust in explaining sales performance, relational embeddedness is more robust in explaining innovation performance. My explanation of this result focuses on the difference in the nature of resources and their deployment, within sales and innovation outcomes, and in particular the levels of uncertainty inherent in each mode of activity.

First, tangible resources—such as sales staff, communication technologies, market and financial data, product reports, expert opinion on a certain drug, and so on—are likely to feature more in sales outcomes than in innovation outcomes. The value of such resources is relatively better known and more fungible than that of less tangible resources and their appropriate use is also more likely to be agreed upon and accepted. Privileged network positions may be all that is required to facilitate the necessary flow of resources for this sort of work, without requiring much attention to the quality of the constituent network ties. To be sure, being closer to one’s contacts may lubricate this flow, but extensive relational trust seems unnecessary. The image of the effective sales or product manager is perhaps one of a ‘wheeler-dealer,’ with managers seeking timely access to diverse resources that they (for the most part) already know exist and want to access quickly in order to get the sale. Much as Burt (1992a) predicts, managers who maintain larger, more diverse or non-redundant networks of contacts are likely to reap benefits in such situations. Such networks offer managers both an information advantage (i.e., multiple sources of information, perspective, and know-how) and a control advantage (i.e., Simmel’s tertius gaudens, 1950 (1923)). But this expected advantage of more non redundant ties is observable among the managers I studied only when all fully closed networks are accounted and controlled for. This is because there is apparently also an advantage associated with these fully closed and therefore fully redundant networks (see Figure 1).

Without the advantages of information diversity and control, what accounts for the better than average sales performance of these managers? Although the answer requires further study, we can speculate why these managers benefit from being constrained by contacts who all know one another. Managers so constrained must be better able to rely upon or otherwise exploit the benefits of often smaller, more tight-knit groups and the efficient exchange norms these are likely to offer (Coleman, 1990). In particular, the strong detection and sanction mechanisms that accompany these networks may also facilitate the exchange of sensitive information. Such managers, so constrained, may be perceived as less threatening by their alters and these alters may in turn be more forthcoming with and forthright in any information they may have. In other words, when given due attention, both closure and structural hole network strategies can deliver benefits to individuals in a similar mode of activity.

Innovation outcomes, on the other hand, seem to depend more on the interpersonal relations established between a manager and his or her contacts. Innovation outcomes are more likely to be characterized by the exchange of relatively less tangible resources and the need for mutual learning, paths that are relatively fraught with uncertainty, vagueness, and risk for both the manager and her contacts. Local, dyadic circumstances, such as deep, high-trust relationships, are seemingly critical to such learning processes. This is partly because learning processes are facilitated by ‘thicker information’ exchange (Larson, 1992; Uzzi, 1996; Hansen, 1999), which is more likely in highly embedded relationships. As Uzzi writes:

Information exchange in embedded ties is more proprietary and more tacit than the information exchanged at arm’s-length . . . fine-grained information exchange cannot be explained as a special incident of information asymmetries or asset specificity because the identity of the individuals and the quality of their social ties are as important as the information itself. (Uzzi, 1996: 678; emphasis in original)

As noted earlier, Hansen (1999) also finds that more complex and tacit knowledge is more likely to be passed along strong as opposed to weak ties. While weak ties facilitate search, stronger ties provide a better conduit for actually transferring and exchanging complex issues and ideas. To the extent that innovation involves exchanges of more complex and tacit knowledge, it is therefore understandable that relational embeddedness plays a strong role.
Innovation outcomes also require having the human support and encouragement to persevere in order to deliver on new ideas. This is because, when practiced, innovation will often involve a movement away from established practice and therefore introduce substantial risk. When managers embark on risky paths, confidence in the quality of resources they receive—whose exact content and value is often unknown (Uzzi, 1996)—and some assurance of personal support are likely to be crucial. A manager without such confidence and social support will be much less likely to embark on such new ventures, let alone to be successful in them. Indeed, several studies have suggested that under increasing uncertainty performance is particularly enhanced by relational embeddedness. For example, Krackhardt’s account of what kinds of influence are required for a manager to be effective in more uncertain settings is telling:

If the influence being sought is within the routine operation of the organization, then people who are ‘experts,’ people in ‘authority,’ and, generally, people who know how things work around the organization are likely to be seen as powerful. If, however, the influence entails a radical departure from prior operations, then the uncertainty that emerges is likely to arouse emotional responses to influence attempts. Affect-laden issues such as trust, respect, or liking may become important in evaluating who has the ability to mobilize support for radical change. (Krackhardt, 1990: 343–344)

Similarly, both Geertz (1978) and Podolny (1994) argue that uncertain activities—such as trying to conduct trade in a bazaar, where ‘information is poor, scarce, maldistributed, inefficiently communicated, and intensely valued’ (Geertz, 1978: 29)—are more likely to be conducted with partners with whom actors have ongoing and close relations. In all of these studies the implication is the same—relational embeddedness may present a particular advantage to actors operating under greater uncertainty, such as when attempting to innovate, as opposed to churning through more or less routine tasks. None of these studies though systematically measures or even distinguishes structural from relational embeddedness across these contexts.

Finally, Podolny’s (2001) ‘altercentric’ perspective on exchange and social networks also elucidates these results. In contexts characterized by uncertainty for the alter, he argues, these alters are particularly likely to look to ego’s existing relations in their decision to pursue exchange (the presumption being that alters have a reasonable purview onto those relations). For example, alters are likely to examine the status implications of ego’s ties, where higher-status ties are confidence-engendering in uncertain contexts. By extension, in uncertain contexts alters may also look to the capacity of ego to build and maintain close, trusting relations, as an additional signal of ego’s likely conduct. It follows that an actor who maintains, on average, close and trusting relations will motivate alters to engage with that actor more and to exchange more openly, with greater confidence and willingness, particularly in uncertain contexts. This is consistent with the finding that relational embeddedness plays a strong role in predicting better innovation performance.

To sum up, this study emphasizes the usefulness of breaking down the concept of social capital into its structural and relational components. While the structural view of social capital offers a glimpse into the instrumentality and reach of social relations, the relational view emphasizes the exchange relationship as a ‘unifying social object’ (Lawler and Yoon, 1998: 874), which draws partners together and impacts the likely quality of exchange and subsequent action.

Implications for strategic management practice and limitations

The emerging managerial literature on social capital will lead most readers to conclude that networking is a good thing (e.g., Baker, 2000), for themselves or their employees. The discerning reader might also conclude that building a network of people who do not know each other (and keeping it that way) is an even better thing, the source of considerable personal and, possibly, corporate advantage. While diversity and reach are clearly important, and remain so in this study, actors, operating in a similar task environment, can also benefit from closed networks (Coleman, 1990). The implication is that attentiveness to a particular network strategy is a good thing—optimizing, and not diluting, the potential benefits offered through a specific network form. In other words, when it comes to network strategies, as in business strategies, focus is beneficial—beware of the danger of being stuck in the middle from attempting to play
two games. Moreover, although the danger that closing off one’s network poses (i.e., in increasing redundancy) is well known and is found to be evident among the managers studied here, this study also points to the potential adverse effects of opening one’s network. My findings suggest that networking to increase diversity (even while controlling size) is not always beneficial, particularly if one’s network is already closed.

This study also tempers excessive faith in network structure alone. Maintaining some degree of closeness or intimacy is valuable, and especially important when pursuing uncertain, entrepreneurial activities. Managerial attention to either form of embeddedness is not costless, however. For instance, to maintain a hole-filled network and retain tertius advantages, managers will need to continually forge new ties, given that structural holes, like natural ones, have a tendency to fill in, or be filled in by able network entrepreneurs (Burt, 2000). An overly transactional approach to building social capital, on the other hand, could erode relational embeddedness, not least by leaving less time and attention for thickening and deepening ties. It follows that corporate executives who wish to develop the social capital of managers should support not only once-off networking opportunities but also recurring, integrative exchanges, such as job rotations, regular seminars and forums, and multidisciplinary teams (see Baker, 2000).

Finally, this study also raises questions of limitations. First, full network data are certainly desirable (Kilduff and Krackhardt, 1994) to reduce measurement error and the potential for any systematic bias in respondent assessments of alter–alter ties (e.g., the potential for better-performing respondents assessing fewer ties among their alters). The collection of full network data remains a challenge for future research, particularly in settings where networks are large and/or span multiple organizations and settings. Second, problems of reverse causality cannot be entirely ruled out. While the lag between network measurement and performance measurement employed here was aimed at reducing effects of reverse causalities, these issues persist and represent a limitation of the study. Current performance is typically highly correlated with past performance and past performance is likely to have had some influence in shaping people’s networks and the quality of their relationships.

To remedy these problems, future research could consider longer lag periods between the collection of predictor and criterion variables, as well as collecting time series data that can be used to partial out the influence of past performance on predictor variables. Finally, this study takes place within a single corporation within the pharmaceutical industry and the results may not generalize to other industries or companies. Further studies are needed to test the generalizability of these findings. Future studies should also examine other operationalizations of relational embeddedness. Closeness and relational trust are apparent starting points (Uzzi, 1996), but there are, of course, many other ways to conceptualize the content and quality of interpersonal relations. Other ways in which relations tend to be embedded, such as intellectually (see Nahapiet and Ghoshal, 1998) or cognitively, also merit further study.

CONCLUSION

While it is generally accepted that managerial action and performance are socially embedded, there is also consensus that we still know too little about the micro-sociology of productive social exchange (Uzzi, 1996; Moran and Ghoshal, 1999; Kogut, 2000; Adler and Kwon, 2002)—that is, despite a widely held belief that firms must breed value-creating actors to survive, and that this involves exchange among organizational actors, we know much less about the micro-sociological foundations of this process (see Uzzi, 1996: 674). Perhaps, then, one of the reasons the banner concept of social capital has grown in prominence among strategy and organizations scholars is precisely because of its inherent promise to illuminate such productive social exchange. And yet, notwithstanding the considerable development of the concept and consequences of social capital, significant gaps remain in our understanding of what constitutes productive or value-adding social relations.

This study contributes to our understanding of individual-level social capital in several ways. It adds clarity to our conceptualization of social capital by developing the distinction between structural and relational embeddedness (Granovetter, 1992). Although this distinction was part of the original discourse on how social relations and networks can influence various individual-level outcomes, the contemporary social capital
literature is too easily associated with network structure, and even a particular form of network structure (structural holes). This study finds support for the benefit of two network strategies in a similar work environment: closure and holes. It appears that focus and consistency within a network strategy bring considerable benefit to managers—those who attempt to deviate from this path obtain neither the full information and control benefits of holes nor the exchange efficiency of closure.

Moreover, I find that relational embeddedness offers considerable advantages to managerial performance, even when placed side by side with the benefits of network structure. Parsing out the separate and distinct benefits of structural and relational embeddedness I find that relational embeddedness is a particularly important contributor to entrepreneurial behavior. This suggests that in uncertain and potentially risky contexts being able to draw on well-established and faithful relationships is a highly valuable asset. This should also help to remind us that ‘networking’ and building social capital are not synonymous—for some activities it is vital to find the time to cultivate enduring, intimate ties. In short, this study reinforces but also clarifies the multifaceted nature of social capital.

ACKNOWLEDGEMENTS

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APPENDIX

Network generation items used in questionnaire

Respondents were asked to consider the last 12-month period.

Task execution contacts
Who are the key people who contribute the most to your ability to do your job as a Product or Sales Manager: Your most valued work contacts?

Innovation contacts
Who are the key people that help you the most to formulate new ideas or to launch new initiatives?

Social support
Who are the key people in your work environment that you regard as your most important source of social support?

Performance items asked of human resource directors

Directors were asked to consider the last 6-month period. A 7-point Likert-type scale was used.

1. 2. 3. 4. 5. 6. 7.
Weak Satisfactory Above average Outstanding

Sales contribution
Taking into account various factors (the age of the product(s) they manage/sell, market size, regulatory environment), rate the quality of each manager’s sales contribution.

Innovation contribution
How well has this manager done in terms of generating and implementing novel ideas or initiatives related to product or process development?

Items used to measure quality of relationship

Closeness
Respondents were asked how close they felt to their contact in their working relationship. A 5-point Likert-type scale was used.

‘Distant/arm’s length’ (1) —— (5) ‘Very close’

Relational trust
Respondents were asked to agree or disagree with the following items.

(1 = Strongly disagree —— 5 = Strongly agree)

1. This contact shares my overall goals and values.
2. This contact is generally honest and truthful in the information provided.
3. This contact is very competent in the areas in which we interact.

Alpha = 0.684