



The moderating impact of internal social exchange processes on the entrepreneurial orientation–performance relationship

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ABSTRACT

This paper applies a social exchange perspective to understand the internal contingencies of the relationship between entrepreneurial orientation (EO) and performance. It focuses on two aspects of social interactions among functional managers (procedural justice and trust), as well as on their organizational commitment, as potential enhancements to the firm's successful exploitation of entrepreneurial opportunities. A study of 232 Canadian-based firms finds several positive moderating effects: The EO–performance link is stronger for higher levels of procedural justice, trust, and organizational commitment. In addition, consistent with a systems approach to organizational contingencies, the EO–performance relationship is stronger when the organization's social context comes closer to an “ideal” configuration of procedural justice, trust, and organizational commitment that is most conducive to knowledge exchange within the organization. The study's implications and future research directions are discussed.

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1. Executive summary

This study examines the roles of social relationships between functional managers and their commitment to the organization in shaping the entrepreneurial orientation (EO)–performance relationship. In the context of prior studies that typically focus on the external factors that affect the EO–performance relationship, as well as recent research that has begun to explore its internal contingencies, limited attention centers on how the successful exploitation of entrepreneurial opportunities might depend on social interactions within the firm. Because social exchanges are instrumental for the firm's ability to combine knowledge across different functional areas, they can interfere in the successful enactment of the firm's entrepreneurial posture.

Drawing from prior work on social exchange relationships, we consider three characteristics that collectively represent an organization's internal social context and that affect the extent and quality of internal knowledge exchange and thus the strength of the EO–performance relationship: (1) procedural justice in cross-functional relationships, (2) trust between functional managers, and (3) managers' commitment to the organization and its goals. Examining a sample of 232 Canadian-based firms representing a broad range of industries, we find that the overall positive relationship between EO and performance becomes nuanced once we account for social exchange processes. In particular, the relationship is positive only at high levels of procedural justice, trust, and organizational commitment; it is further amplified to the extent that the organization's social context approaches an “ideal” configuration of procedural justice, trust, and organizational commitment.

This study contributes to entrepreneurship literature by drawing attention to and providing a theoretical elaboration of how the internal social context affects the EO–performance relationship. Specifically, internal social exchanges influence the firm's

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ability to combine knowledge across functional boundaries, which in turn affect its ability to exploit new opportunities successfully. By discussing how cross-functional procedural justice and trust promote the quality of decision making when confronted with entrepreneurial opportunities, we offer new insights into the role of formal and informal collaboration among functional departments for the successful implementation of a firm's EO. Furthermore, we highlight how functional managers' commitment to their organization can act as a catalyst to collaboration and knowledge exchange. By internalizing the entrepreneurial goals of their organizations, committed managers can enhance the cohesion and critical thinking that organizations require to realize their entrepreneurial potential. We also contribute to literature on entrepreneurial orientation by using a systems perspective to understand how internal social contingencies collectively help translate a firm's entrepreneurial posture into successful performance.

From a managerial point of view, this study suggests that when a firm seeks to adopt an entrepreneurial orientation, top managers should focus not only on navigating the external environment but also on ensuring that procedural justice and trust permeate the relationships between functional departments. Ultimately, strong social relationships might make functional managers less likely to identify themselves as marketers, salespeople, product designers, or engineers and instead encourage them to perceive each other as "partners" with common interests in identifying and exploiting entrepreneurial opportunities for the firm. Finally, by fostering commitment and inspiration throughout the ranks of the organization, top managers can create further impetus for cross-functional initiatives and collaboration that facilitate knowledge exchange and ultimately help fulfill the firm's entrepreneurial potential.

2. Introduction

In changing and increasingly competitive environments, firms must constantly seek out entrepreneurial opportunities (D'Aveni, 1994) and translate them into improved performance outputs (Hitt et al., 2001). To this end, a firm's entrepreneurial orientation (EO)—that is, its strategic posture to be innovative, proactive, and risk taking—takes on instrumental importance (Covin and Slevin, 1991). Many studies demonstrate the beneficial influence of EO on firm performance (Wiklund, 1999; Wiklund and Shepherd, 2005; Zahra, 1991; Zahra and Covin, 1995), but studies in which this relationship does not hold (Smart and Conant, 1994) and arguments for the lack of universal applicability of an entrepreneurial strategic posture (Hart, 1992) have prompted further theoretical elaboration of the EO–performance relationship, highlighting its various contingencies (Lumpkin and Dess, 1996). Accordingly, a stream of studies reveals the moderating roles of *external* factors such as environmental hostility, turbulence, and dynamism (Covin and Covin, 1990; Dess et al., 1997; Namen and Slevin, 1993; Wiklund and Shepherd, 2005), external networks (Lee et al., 2001; Stam and Elfring, 2008), and national culture (Arbaugh et al., 2005).

Yet for entrepreneurial orientation to result in performance advantages, it also needs to be properly and successfully managed *within* the organization (Covin et al., 2006; Miller and Friesen, 1986), which involves exploiting opportunities through the development and deployment of resources across organizational units (Ireland et al., 2003; Kuratko et al., 2005). Therefore, understanding how firms can enable and effectively implement their entrepreneurial orientation also requires consideration of *internal* organizational processes (Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005) and the leveraging of resources such as knowledge across functional departments (Floyd and Lane, 2000). In this regard, apart from the roles of the firm's resources (Wiklund and Shepherd, 2005), market orientation (Bhuian et al., 2003), and strategy formation process (Covin et al., 2006), the social aspects of the effective exploitation of entrepreneurial opportunities, which enable and promote knowledge exchange within the organization, have largely remained unexplored. Notably, social exchanges underlie the organization's capability to combine effectively the knowledge embedded in different functional areas (De Luca and Atuahene-Gima, 2007) and are particularly conducive to entrepreneurial behavior when internal relationships are characterized by fairness, trust, and organizational support (Hornsby et al., 2002; Kim and Mauborgne, 1998; Kuratko et al., 2005). Hence, we pose the following research question: How does firms' internal social context influence their ability to exploit entrepreneurial opportunities?

To address this question, we consider the intricate interplay between the content of a firm's strategic posture (i.e., entrepreneurial orientation) and the social processes within the firm's borders (Covin et al., 2006). Specifically, we focus on the interactions and attitudes of mid-level, functional managers (Hornsby et al., 2002; Kuratko et al., 2005), who oversee the sub-processes through which an organization's higher-level, strategic decisions get implemented (Burgelman, 1983; Floyd and Lane, 2000; Floyd and Wooldridge, 1997) and thus epitomize the enactment of a firm's entrepreneurial posture (Kuratko et al., 2005). From their unique position to evaluate and re-direct knowledge flows within the organization (Kanter, 1985) and their engagement in *social* interactions that affect the volume and quality of knowledge flows (De Clercq and Sapienza, 2006; Floyd and Lane, 2000), these managers play instrumental roles in the exploitation of entrepreneurial opportunities (Floyd and Wooldridge, 1997; Mom et al., 2007).

Consistent with prior work that highlights the influence of procedural justice (Sapienza and Korsgaard, 1996), trust (Nahapiet and Ghoshal, 1998), and organizational commitment (Kim, 1998) on effective knowledge sharing in social exchange relationships, we focus on how these three social exchange processes influence the EO–performance relationship. We argue that procedural justice, trust, and organizational commitment *each* facilitate the firm's ability to exploit entrepreneurial opportunities by enhancing the amount and quality of knowledge exchange across functional departments (De Clercq and Sapienza, 2006). In addition, these three factors *collectively* constitute a conceptually meaningful gestalt (Covin et al., 2006; Miller, 1986) that reflects how the organization's internal social context can influence the exploitation of entrepreneurial opportunities (Kim and Mauborgne, 1998). To this end, we apply a systems perspective to understanding the contingent influence of social context (Drazin and Van de Ven, 1985) and focus on the holistic configuration of its characteristics (Govindarajan, 1988; Ketchen et al., 1993, 1997; Meyer et al., 1993; Payne, 2006). To the extent that an "ideal" configuration of factors aligns best with the implementation requirements of a particular strategic posture (e.g., Venkatraman, 1989; Vorhies and Morgan, 2003), the similarity to that

configuration reflects how easily that posture may be converted into organizational effectiveness (Doty et al., 1993; Govindarajan, 1988). Accordingly, we identify and discuss an “ideal” configuration of procedural justice, trust, and organizational commitment that is most conducive to cross-functional knowledge exchange and, because of the critical role of such exchanges for exploiting entrepreneurial opportunities, argue that organizations with a closer adherence to this configuration will exhibit a stronger relationship between their EO and performance.

3. Theoretical background

3.1. EO and knowledge exchange

We define a firm's entrepreneurial orientation (EO) as a strategic posture that involves a propensity to be innovative, that is, to depart from established practices and entertain new ideas and experimentation; proactive, in that it beats competitors to new market opportunities; and open to risk in exploring new products, services, and markets (Covin and Slevin, 1991). For this posture to translate into successful performance, firms must leverage resources across functional departments to create the conditions for the effective exploitation of opportunities (Eisenhardt and Martin, 2000; Floyd and Lane, 2000; Teece et al., 1997; Zollo and Winter, 2002). Indeed, after establishing the viability of entrepreneurial opportunities, the firm then should shift its focus from exploring to exploiting opportunities (Choi et al., 2008).

Successful opportunity exploitation requires the full-scale operation and implementation of new approaches (Choi and Shepherd, 2004) and the development of commercialization strategies (Zahra and George, 2002). Assembling and combining dispersed, complementary knowledge can play a critical role in this process (Choi et al., 2008; Floyd and Lane, 2000), but such combination does not happen automatically. On the one hand, entrepreneurial opportunities are surrounded by uncertainty about how different internal stakeholders may contribute to the development or launch of new products or services in the marketplace (Shepherd et al., 2000). On the other hand, knowledge that can help reduce this uncertainty is dispersed across the organization (Tsoukas, 1996) and may be perceived as a source of power, that is therefore not readily shared (Kim and Mauborgne, 1998).

Leveraging knowledge to exploit entrepreneurial opportunities therefore may require close social relationships among the parties who hold the relevant knowledge (Floyd and Lane, 2000). Indeed, “although ideas are formed in the minds of individuals, the interaction between individuals typically plays a critical role in developing these ideas” (Nonaka, 1994: 15), and through the social nature of exchange relationships, the knowledge benefits inherent in such relationships—in terms of both the volume and the quality of knowledge—can be unlocked (De Clercq and Sapienza, 2006). Accordingly, we argue that the firm's ability to convert its innovative, proactive, and risk-taking behavior into a performance advantage will be influenced by the amount and quality of knowledge exchange that takes place across functional departments. Ultimately, because this knowledge exchange is embedded in the organization's patterns of social exchange (Nahapiet and Ghoshal, 1998), examining the moderating influence of social exchange processes within the firm should enrich our understanding of the EO–performance relationship (Covin et al., 2008).

3.2. EO and social exchange processes

Social exchange theory regards exchange relationships as predicated on norms of reciprocity and mutual attraction (Emerson, 1981). Economic action is embedded in social relations that balance the search for self-interested gain with the development of sustainable relationships (Granovetter, 1985). In the context of cross-functional cooperation within organizations, the nature of these relationships represents a resource that may benefit the exchange partners (Nahapiet and Ghoshal, 1998). For instance, the social capital developed between departments is a relational resource that resides in interactions between functional managers and is instrumental for the effectiveness of the organization's internal operation (Leana and van Buren, 1999; Tsai and Ghoshal, 1998). Social relationships between functional departments create a context conducive to novel ideas and new knowledge (Nahapiet and Ghoshal, 1998), and such knowledge exchange in turn can increase managers' effectiveness in exploiting opportunities (Floyd and Lane, 2000; Mom et al., 2007).

A social exchange perspective should help identify the factors that help leverage the firm's internal resources across functional departments in ways that affect the successful exploitation of entrepreneurial opportunities. Drawing on the notion that the combination of resources in exchange relationships can be optimized through procedural justice (Sapienza and Korsgaard, 1996), trust (Nahapiet and Ghoshal, 1998), and commitment (Kim, 1998), we focus on three specific processes that characterize the firm's internal social context: (1) the perceived fairness of the procedures governing the relationships between functional departments, (2) the trust that functional managers hold in each other, and (3) their identification with the organization and its goals. The glue that binds these variables is their ability to substitute for more formal, restrictive governance mechanisms of exchanges within the organization and, as such, to increase the organization's ability to benefit from extensive and high-quality knowledge exchange within its borders (De Clercq and Sapienza, 2006; Nahapiet and Ghoshal, 1998). We first discuss the individual moderating effects of these three social exchange processes on the EO–performance relationship. Next, in line with a systems perspective on organizational contingencies (Drazin and Van de Ven, 1985; Govindarajan, 1988; Vorhies and Morgan, 2003), we consider how more complex, holistic configurations of these constructs can influence the effectiveness of the firm's EO. Fig. 1 illustrates our conceptual framework.

3.2.1. Procedural justice

Because organizational members devote significant energy to understanding how their organization operates and participating in the social processes within it, their perceptions of fairness are important in shaping their motives and behavior (Cropanzano and

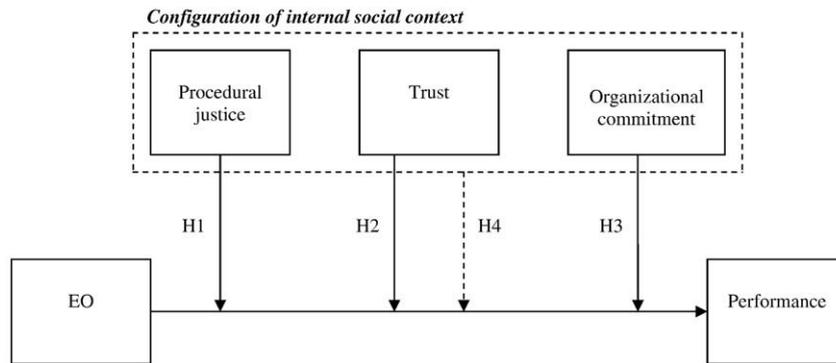


Fig. 1. Conceptual model of the moderating effects of procedural justice, trust, and organizational commitment on the EO–performance relationship.

Greenberg, 1997). We define procedural justice as the perception by functional managers that the procedures that govern their relationships with peers in other departments are fair (Lind and Tyler, 1988; Thibaut and Walker, 1975). Procedural justice is relevant for the distribution of rewards (e.g., Folger and Konovsky, 1989) and enhances managers' compliance with the strategic direction of the organization (Kim and Mauborgne, 1998). Procedural justice also helps ensure harmony in and the longevity of work relationships and is particularly instrumental in situations that require co-operation between parties with different goals, such as in the context of cross-functional collaboration (De Luca and Atuahene-Gima 2007). When functional managers believe that top management tries to be fair and deal equitably with them, they may be more willing to share their resources with others across the organization (Korsgaard et al., 1995). More broadly, the procedural fairness of organizational decisions can motivate organizational members to put their self-interest aside and instead focus on the good of the organization as a whole (Lind and Tyler, 1988).

On the basis of this literature, we argue that the beneficial effect of EO on performance should increase when high levels of procedural justice characterize the relationships between functional managers. First, procedural justice amplifies the performance effect of an EO because it enhances the *amount* of knowledge shared across functional departments, as implied by the possibility to voice and articulate opinions in decision processes (Kim and Mauborgne, 1998). Although entrepreneurial initiatives can change the balance of power within the organization (Burgelman, 1983), and individual managers might thus be reluctant to share their knowledge and resources with others, this reluctance will be overcome to the extent that they believe that the benefits from sharing knowledge will be fairly rewarded across functional departments (Kuratko et al., 2005).

Second, procedural justice amplifies the performance effect of an EO by increasing the *quality* of knowledge exchange. The presence of fair procedures implies that mechanisms are in place to question and refute others' opinions (Kim and Mauborgne, 1998), which in turn should enhance the creativity and diversity of ideas exchanged across functional departments. Fair procedures imply accountability among functional managers in terms of explaining how they adhere to these procedures, which provides them with a more comprehensive understanding of the cognitive maps of others in the organization (Kim and Mauborgne, 1998). Also, fair procedures across functional departments make functional managers more open to making *risky* decisions, in that such procedures guarantee that the interests of an individual department will not be jeopardized, even if risky endeavors do not immediately succeed in the marketplace (Hornsby et al., 2002; Sapienza and Korsgaard, 1996). Procedural justice thus increases confidence that, in the long run, each department's functional interests will be advanced even if the necessary decisions create uncertainty in the short term. On the basis of these arguments, we advance the following hypothesis:

Hypothesis 1. The positive relationship between EO and performance is moderated by procedural justice, such that this positive relationship is stronger at higher levels of procedural justice.

3.2.2. Trust

A central premise of social exchange literature is that the presence of mutual trust in exchange relationships is beneficial for the outcomes of such relationships (Granovetter, 1985). Trust thus represents another key aspect of the social exchanges that take place between functional managers. It can pertain to functional managers' beliefs and expectations about others' good intentions (Sitkin and Roth, 1993), reliability and predictability (Ring and Van de Ven, 1992), and positive motives in situations entailing risk and vulnerability (Boon and Holmes, 1991). In other words, trust is particularly relevant in uncertain and risky situations, because it instills a willingness to render oneself vulnerable to the actions of trusted others. Within organizations, trust facilitates access to and combinations of resources, as well as regular and open knowledge exchanges among organizational units (Ireland et al., 2003; Tsai and Ghoshal, 1998). When trust exists between potential partners, they are more likely to engage in exchange and cooperation (Ring and Van de Ven, 1992), by “keeping [their] mind open to all evidence, [and] secur[ing] communication and dialogue” (Misztal, 1996: 10). Because such stimulation of knowledge exchange is essential for the exploitation of entrepreneurial opportunities, as we argued previously, we offer several reasons for a strengthened EO–performance relationship when high trust exists between managers in different functional departments.

First, trust amplifies the performance effect of an EO because it stimulates the *amount* of knowledge exchange between functional departments. When cross-functional relationships are governed by trust in each other's goodwill, the reliance on monitoring mechanisms becomes less relevant (Bstieler, 2006), which frees resources that then can enhance the potential for more extensive communication (Zaheer et al., 1998). Further, cross-functional collaboration induced by trust relies on functional managers' *intrinsic* motivations rather than external sanctions to collaborate with colleagues (Zaheer et al., 1998). Driven by such motivations, managers are more likely to do everything it takes—including extensive resource sharing and intensive championing of their own or others' projects—to see entrepreneurial opportunities through and support their implementation in day-to-day operations (Goldsby et al., 2005).

Second, trust makes the EO–performance relationship stronger by increasing the *quality* of the knowledge exchange between functional departments. Trust facilitates the exchange of confidential information among functional managers because it diminishes the perceived risk of opportunism and thus the need to veil or hide sensitive information (Yli-Renko et al., 2001). In the same vein, sharing *tacit* knowledge in particular is a form of relinquishing power to others (Kim and Mauborgne, 1998), and therefore, it may take high levels of trust for functional managers to share such knowledge with their colleagues. Also, low perceptions of opportunism make functional managers more likely to exchange insights not only about each other's prior successes but also failures (De Clercq and Sapienza, 2006), which increases the learning advantages that can be derived from the exchanges (Argote, 1996). Finally, trust reduces fears of criticism or looking foolish (Atuahene-Gima and Murray, 2007), so it also enhances the willingness of functional managers to implement risky actions and increases the scope of ideas about how to convert entrepreneurial opportunities into action (Mom et al., 2007).

Hypothesis 2. The positive relationship between EO and performance is moderated by trust, such that this positive relationship is stronger at higher levels of trust.

3.2.3. Organizational commitment

The notion of organizational commitment conceives of functional managers as having an exchange relationship with their organization (Eisenberger et al., 1986; Gakovic and Tetrick, 2003), and this relationship in turn plays an important role in managers' day-to-day behavior (Allen and Meyer, 1990). We define organizational commitment as the extent to which functional managers identify with their organization and are committed to its goals (Pool and Pool, 2007). It is thus a work attitude that reflects a willingness to work hard to achieve organizational goals (Meyer et al., 2004). In the context of this study, organizational commitment reflects managers' belief in and acceptance of their organization's entrepreneurial goals and values. Because managers' organizational commitment increases their perception of the opportunities for knowledge exchange with others in the organization (Kim, 1998), it can be particularly relevant for the successful realization of the firm's EO.

First, organizational commitment enhances the performance potential of an EO because it increases the *amount* of knowledge exchange between functional departments. Individual managers who feel a strong attachment to their organization are likely to share more knowledge with others because such an attachment increases their perception that extensive knowledge sharing is appreciated and that their knowledge eventually will be used by and helpful for their organization (Van den Hooff and Van Weenen, 2004). Similarly, strongly committed managers attach substantial importance to how they are perceived by others in the organization (O'Reilly and Chatman, 1986) and thus are less likely to appear resistant to sharing knowledge with them (Lin, 2007). Organizational commitment may lead functional managers' motivations to change from being extrinsic (i.e., concerned about the *firm's* needs) to being intrinsic (i.e., concerned about *my* firm's needs; Meyer et al., 2004) and increase the passion with which they engage in cross-functional knowledge exchange (Emden et al., 2005). Ultimately, because the fruitful exploitation of entrepreneurial opportunities requires a combination of knowledge across functional boundaries (Floyd and Lane, 2000), extensive knowledge exchange increases the odds that relevant pieces of knowledge can be matched.

Second, organizational commitment amplifies the performance effects of an EO by increasing the *quality* of knowledge exchange within the organization. Interactions between parties that identify strongly with the organization can lead to increased organizational learning, as these interactions involve not only repeated efforts to exchange information (Blankenburg et al., 1999) but also greater receptivity of exchange partners' knowledge (Van den Hooff and Van Weenen, 2004). Further, the organization's learning capacity may increase when its members are highly committed to its goals because the associated efforts to use the knowledge to accomplish these goals enhance insights into how disparate pieces of knowledge can be effectively combined (De Clercq and Sapienza, 2006). For instance, Emden et al. (2005) find a positive effect of the level of commitment on the amount of learning that takes place in exchange relationships, which they explain as stemming from the scope of activities and resources deployed in the relationships. In short, highly committed managers are more likely to exchange a richer set of knowledge with one another, which can be leveraged as the organization's ability to exploit entrepreneurial opportunities.

Hypothesis 3. The positive relationship between EO and performance is moderated by the level of organizational commitment, such that this positive relationship is stronger at higher levels of commitment.

3.3. Configurations of social exchange processes

Hypotheses 1–3 pertain to the individual moderating effects of procedural justice, trust, and organizational commitment on the EO–performance relationship and offer a reductionist portrayal, based on their independent, decomposable effects. That is, they consider the knowledge-enhancing effect of each of the three factors individually, without acknowledging the possibility that this effect may be not be optimal if any of the other factors is deficient (Drazin and Van de Ven, 1985). Yet to the extent that these aspects of social context operate simultaneously and represent a holistic structure, a systems approach to understanding their

contingency effects offers valuable complementary insights (Vorhies and Morgan, 2003). Several studies show that the examination of a configuration of contingencies can increase understanding of the simultaneous performance effects of multiple organizational characteristics (Dess et al., 1997; Govindarajan, 1988; Miller, 1986; Vorhies and Morgan, 2003; Wiklund and Shepherd, 2005). The basic premise of this configurational perspective is that firms that align multiple, performance-enhancing factors enjoy superior performance (Dess et al., 1997).

The holistic configuration of organizational characteristics can be modeled as an “ideal type” construct, an abstract representation of related, complex empirical phenomena (Burger, 1987; Weber, 1904). Such “ideal types describe the phenomena, consisting of component elements standing in specific relations to each other, which empirically exist when certain conditions are fulfilled” (Burger, 1987: 159). Ideal type constructs are particularly useful in representing interactions among several theoretical constructs (Stinchcombe, 1968). They represent a unique form of theory building and are of great relevance for researching the complexity of business-related behavior (Doty and Glick, 1994). Specifically, the systems approach to organizational contingencies suggests that the more an organization deviates from the ideal type, the lesser is its expected effectiveness (Drazin and Van de Ven, 1985; Ketchen et al., 1993, 1997).

We have argued that the organization's internal social context—as represented by the existence of procedural justice, trust, and organizational commitment—affects functional managers' ability to institute effective knowledge exchange within the organization, which should be essential for the organization to realize the potential that is inherent in its EO. In this sense, the “ideal” social context pertains to the situation in which the individual components of the social context take their most beneficial forms with respect to the volume and quality of knowledge exchange (De Clercq and Sapienza, 2006; Floyd and Lane, 2000) and, consequently, the successful exploitation of entrepreneurial opportunities. In turn, to the extent that organizations do not reach that ideal state, their internal social context may hamper the effective leveraging of knowledge for opportunity exploitation. Such friction in knowledge exchange thus relates to the degree to which the internal social context deviates from the “ideal” configuration (Doty and Glick, 1994); higher deviation can undermine the implementation of the firm's EO (Venkatraman, 1989).

On the basis of these arguments, we hypothesize that the relationship between EO and performance is stronger when the organization's social context comes closer to the “ideal” configuration of procedural justice, trust, and organizational commitment. To be precise, we contend that these elements—in addition to individually affecting the amount and nature of knowledge exchange—reinforce one another in promoting knowledge flows within the organization and thus turning an entrepreneurial orientation into successful performance (Kim and Mauborgne, 1998). We offer several arguments to support this claim.

First, combined procedural justice and trust might enhance the effect of knowledge exchange among functional departments in terms of improved implementations of entrepreneurial opportunities. When functional managers believe others in the organization will not misuse shared knowledge to advance their own interests, they can more effectively use fair procedures for the promotion of knowledge sharing (De Cremer and Tyler, 2007), which itself helps overcome the inevitable challenges of opportunity commercialization processes. In other words, in light of the uncertainty associated with conducting entrepreneurial initiatives (Lumpkin and Dess, 1996), perceptions of other functional managers as trustworthy, benevolent, and willing to protect the interests of others may make the presence of fair procedures even more effective in facilitating knowledge exchange, because they induce expectations of reciprocation and adherence to established rules (Lewicki and Bunker, 1996). These conditions likely ensure the proper recognition and appreciation of efforts by organizational members (Kim and Mauborgne, 1998), prompting them to be forthcoming with the information and knowledge that allows the firm to exploit its entrepreneurial opportunities.

Second, procedural justice and organizational commitment can mutually enhance the extent and benefits of cross-functional knowledge exchange for the successful implementation of entrepreneurial opportunities. That is, the knowledge benefits that functional managers can derive from fair procedures with other departments for the pursuit of entrepreneurial initiatives will be amplified to the extent that they exhibit a strong identification with the organizations' goals (Leong et al., 1994). People who are more favorably disposed toward positive reciprocity with others and their organization respond more favorably to fair treatment and are more motivated to endorse and enforce fair procedures (Eisenberger et al., 2004). In such cases, managers not only internalize the organization's goals and seek cooperation throughout the organization (Lin, 2007), but they also are confident that their engagement in open and regular knowledge exchanges with colleagues will be recognized and rewarded. Because the enactment of the organization's EO requires wide support from within the organization (Lumpkin and Dess, 1996), and because maintaining just dealings across functional departments exemplifies concern for the organization's overall well-being rather than that of individual departments (Kim and Mauborgne, 1998), procedural justice should be particularly instrumental for the successful execution of an EO when it is maintained by committed managers who have the organization's best interests at heart.

Third, the connections of trust and organizational commitment should empower the knowledge exchange that underlies the successful pursuit of entrepreneurial opportunities. Knowledge advantages derive from trust-based relationships (Nahapiet and Ghoshal, 1998), and they should become amplified at higher levels of organizational commitment, because managers committed to the organization are more *motivated* to leverage the knowledge advantages inherent to a trusting relationship to accomplish the often challenging organizational goals associated with an EO (Kim, 1998; Lumpkin and Dess, 1996). In addition, though high levels of trust can suppress exchanges of opposing viewpoints about the best way to implement new products or services—as a means to protect others' short-term emotional well-being (Langfred, 2004)—such suppression may be less likely if functional managers keep the organization's mission and goals in mind. Highly committed managers are willing to make short-term sacrifices to realize long-term entrepreneurial goals for the good of the organization (Pool and Pool, 2007).

In short, a configuration characterized by the simultaneous presence of high levels of procedural justice, trust, and organizational commitment appears best for intra-organizational knowledge exchange, which underlies the successful implementation of entrepreneurial opportunities. Because frictionless knowledge sharing supports such implementation efforts (Floyd and Lane, 2000), this configuration reflects an internal social context that amplifies the performance potential of an EO. Consistent with a systems approach

to organizational contingencies (Dess et al., 1997; Drazin and Van de Ven, 1985), we argue that the more closely an organization's social context reflects the "ideal" configuration of high procedural justice, trust, and organizational commitment, the more able it can convert its EO into successful performance. In contrast, deviation from this ideal configuration should impede knowledge exchange and thus undermine the relationship between EO and performance.

Hypothesis 4. The similarity of the organization's social context to the ideal configuration of procedural justice, trust, and organizational commitment positively moderates the relationship between EO and performance, such that the relationship is stronger when the similarity is higher.

4. Method

4.1. Sample and data collection

To test our hypotheses, we extracted all firms included in Hoover's Business Directory headquartered in Canada, then retrieved a random sample of 1500 firms based on their alphabetical appearance in the database. These firms are active across the country's provinces and represent all sectors of Canada's economy. For each firm, we obtained contact information about managers active in functional departments, such as R&D, engineering, marketing, or sales. We then sent a survey instrument to one randomly selected functional manager per firm. To pretest the survey and ensure that our questions were clear and understandable, we undertook informal interviews with six randomly chosen functional managers, not included in the initial sample, with whom we discussed the survey instrument as well as the challenges associated with cross-functional cooperation in their respective firms. When necessary, we adapted the wording in the original survey instrument.

We used Dillman's (1978, 2000) total design method to manage our data collection. Specifically, we prepared a mailing packet containing (1) a cover letter addressed personally to the functional managers of the sampled firms, (2) a questionnaire, and (3) a postage-paid return envelope. Two weeks after the initial mailing, we conducted "thank you" calls to those who had responded and reminder calls to those who had not. Four weeks after the initial mailing, we sent replacement questionnaires to non-respondents. The initial and follow-up invitation letters included a Web address that allowed the respondents to fill out the survey online if they wished to do so. Some initially selected firms were unfit for the final sample because they were not active any more, had moved and their new address could not be identified, or no longer employed the selected respondents. We therefore finished with 950 potential respondents and received 232 completed surveys, representing a response rate of 24%. The responding firms operate in a wide variety of sectors, including automotive and aviation (4.7%), biotechnology (4.3%), building and construction (4.3%), chemical and pharmaceutical (7.3%), computers (12.0%), consumer products (4.7%), food (4.7%), mining and exploration (9.9%), services (8.6%), telecommunications (7.8%), and others. Furthermore, 47.4% of the respondents work in R&D-related functions (R&D or engineering) and 52.6% in marketing-related functions (marketing or sales). With respect to the variables used in the study, no significant differences appear between early and late respondents (Armstrong and Overton, 1977) or between responses to the mail-based versus Web-based surveys (Dillman, 2000).

Following prior research (Yli-Renko et al., 2001), we tested the validity of the study's key constructs by sending a follow-up survey after a six-month time lag. In the follow-up survey, we used a shortened format of the original questionnaire; for each construct, we chose one proxy item from the original survey that we believed best represented the overall construct. We received 78 responses to the follow-up survey and found that all validation items had positive, significant correlations with the original measures, as reported subsequently.

4.2. Measures of constructs

In Table 1, we list the measures and their associated alphas, construct reliability, average variance extracted (AVE), and factor loadings. All items were derived from previously established scales.

4.2.1. Performance

The performance measure is the average of nine financial, operations, and marketing indicators used in prior research examining the relationship between firms' strategic posture and performance (Li and Atuahene-Gima, 2001), capturing items such as return on investment, overall efficiency of operations, and market share growth. For each indicator, respondents assessed their perceptions of the firm's performance relative to its principal competitors during the past three years. The measure ($\alpha = .92$) correlated positively with its single-item counterpart from the follow-up survey ($r = .66, p < .001$). We also find that it correlates positively with income growth over the last year ($r = .246, p < .05$), according to data available in Hoover's Business Directory with a subset of 70 firms.

4.2.2. Entrepreneurial orientation

We use the seven-item scale validated by Miller (1983) to gauge EO, capturing the firm's innovation (e.g., emphasis on long-term R&D), proactiveness (e.g., challenging rather than responding to major competitors), and risk taking (e.g., rewarding risk taking). The measure ($\alpha = .81$) correlates positively with its single-item counterpart from the follow-up survey ($r = .57, p < .001$).

4.2.3. Procedural justice

Following Masterson (2001) and Moorman (1991), we adapted a previously validated scale to assess the fairness of procedures governing relationships across functional departments. For example, we assessed whether procedures allowed for requests for clarification or additional information about a decision. Given the importance of exchanges between R&D-related (R&D, engineering) and marketing-related functions (marketing, sales) for the successful implementation of organizational strategy (De Luca and Atuahene-Gima, 2007), the questions assessed the presence of fair procedures between R&D and engineering on the one hand and marketing and sales on the other. This measure ($\alpha = .89$) shows a positive correlation with its counterpart from the follow-up survey ($r = .27, p < .05$).

4.2.4. Trust

Drawing on literature on interpersonal (Rempel et al., 1986) and interfirm (Yli-Renko et al., 2001) trust, we adapted a previously validated scale to assess the level of trust between managers across functional departments. Respondents indicated, for example, whether people from other functions kept their promises and avoided taking advantage of them, even if the opportunity arose. Similar to procedural justice, these questions assessed the presence of trust between R&D-related and marketing-related functions. The measure ($\alpha = .88$) has a positive correlation with its counterpart from the follow-up survey ($r = .37, p < .01$).

Table 1

Constructs and measurement items.^a

	Factor loading	t-value
<i>Performance</i> ($\alpha = 0.92$; $CR = 0.92$; $AVE = 0.55$)		
Return on investment	0.812	14.411
Return on sales	0.826	15.017
Profit growth	0.830 ^b	–
Return on assets	0.854	15.484
Overall efficiency of operations	0.621	10.022
Sales growth	0.652	10.861
Market share growth	0.629	10.398
Cash flow from operations	0.788	13.751
Firm's overall reputation	0.609	9.754
<i>EO</i> ($\alpha = 0.81$; $CR = 0.85$; $AVE = 0.54$)		
My company spends more time on long-term R&D (3+ years) than on short-term R&D.	0.605	8.838
My company is usually among the first in the industry to introduce new products.	0.704	10.747
My company rewards risk taking.	0.706	11.087
My company shows a great deal of tolerance for high-risk projects.	0.683	10.627
My company uses only "tried-and-true" procedures, systems, and methods.	0.589	8.764
My company challenges, rather than responds to, its major competitors.	0.768	12.227
My company takes bold, wide-ranging strategic actions rather than minor changes in tactics.	0.802 ^b	–
<i>Procedural justice</i> ($\alpha = 0.89$; $CR = 0.89$; $AVE = 0.62$)		
<i>Generally speaking, the procedures used in governing the R&D–marketing working relationship...</i>		
Allow for requests for clarification or additional information about a decision.	0.839	15.669
Provide opportunities to appeal or challenge a decision.	0.849 ^b	–
Are constructed to hear the concerns of all those who are affected by a decision.	0.827	14.992
Allow people to collect accurate information for making decisions.	0.777	13.252
Generate standards so that decisions can be made with consistency.	0.614	9.703
<i>Trust</i> ($\alpha = 0.88$; $CR = 0.88$; $AVE = 0.61$)		
People from the other function can always be trusted to do what is right for us.	0.683	11.728
People from the other function always keep the promises they make to us.	0.739	13.362
People from the other function are perfectly honest and truthful with us.	0.895 ^b	–
People from the other function are truly sincere in their promises.	0.835	16.765
People from the other function would not take advantage of us, even if the opportunity arose.	0.720	12.931
<i>Organizational commitment</i> ($\alpha = 0.91$; $CR = 0.92$; $AVE = 0.73$)		
People feel like "part of the family" in the company.	0.907	24.519
People feel a strong sense of belonging to the company.	0.948 ^b	–
Generally, people would be happy to spend the rest of their career with the company.	0.810	17.805
People feel as if this company's problems are their own.	0.746	15.143

Notes: CR = construct reliability; AVE = average variance extracted.

^aThe reported factor loadings pertain to the measurement model in which the five factors are simultaneously included. To assess the constructs' validity further, we also undertake confirmatory factor analysis on each of the constructs *individually* and find that all factor loadings are higher than .60. Furthermore, the fit indices for each of the individual constructs are appropriate: performance (GFI = .96, TLI = .97, CFI = .98, RMSEA = .06, SRMR = .03), EO (GFI = .97, TLI = .97, CFI = .98, RMSEA = .06, SRMR = .05), procedural justice (GFI = .98, TLI = .96, CFI = .98, RMSEA = .05, SRMR = .03), trust (GFI = .98, TLI = .97, CFI = .98, RMSEA = .06, SRMR = .03), and organizational commitment (GFI = .97, TLI = .95, CFI = .98, RMSEA = .06, SRMR = .03).

^bInitial loading was fixed to 1 to set the scale of the construct.

4.2.5. Organizational commitment

We used Allen and Meyer's (1990) four-item scale to measure organizational commitment, assessing, for instance, the extent to which functional managers believe that people in their organization feel a strong belonging to the organization or would be happy to spend the rest of their career with the company.³ The measure ($\alpha = .91$) has a positive correlation with its counterpart in the follow-up survey ($r = .34, p < .001$).

4.2.6. Similarity to ideal configuration

Ideal type patterns among variables can be generated either theoretically or empirically (Doty and Glick, 1994; Van de Ven and Drazin, 1985). When clear judgments can be made about the ideal values of each component construct, the theoretical approach is most consistent with the logical structure of typological theories (Doty and Glick, 1994). In addition, empirical approaches require arbitrary decisions about what constitutes high performance and may reduce the statistical power for testing hypotheses (Govindarajan, 1988). Therefore, we used a theoretical approach to specify the ideal configuration of procedural justice, trust, and organizational commitment. The three constructs were measured on the same 1–5 scale, so we judged the highest value (5) as representing the most beneficial empirical representation of each construct. The ideal configuration thus constitutes the combination in which these three constructs obtain their highest values. Consistent with prior work (Doty et al., 1993; Drazin and Van de Ven, 1985; Govindarajan, 1988; Vorhies and Morgan, 2003), we calculated the Euclidean distance of each firm from this ideal configuration. We then converted this distance into its opposite, negative value to represent it as similarity to the ideal configuration (i.e., higher values reflect higher similarity). Formally, our measure of similarity to the ideal configuration can be summarized as $\text{Sim}(i) = -\sqrt{\sum (X_{ij} - X_{mj})^2}$, where X_{ij} represents the value of attribute j (procedural justice, trust, or organizational commitment) for firm i , and X_{mj} represents the maximum (i.e., ideal) value for that attribute.

4.2.7. Control variables

We included several control variables to ensure proper model specification and take into account possible alternative explanations for performance variations. In particular, we included several firm-level variables such as *firm size*, measured as a log transformation of the number of full-time employees; *firm age*, or the number of years the firm had been in business; and *type of operations*, an indicator of whether the firm focused on manufacturing versus services. Furthermore, we controlled for the respondents' *gender*, measured with a dummy variable; *company tenure*, measured in years; and *functional area*, measured as whether the respondent represented a R&D- or marketing-related function.

4.3. Assessing the reliability and validity of measures

In line with Anderson and Gerbing (1988), we estimate the (five-factor) measurement model using AMOS 6.0. Through a confirmatory factor analysis (CFA), we find factor loadings greater than .40, normalized residuals of less than 2.58, and modification indices of less than 3.84 (Anderson and Gerbing, 1988). These parameters suggest that we do not need to delete scale items to improve model fit. The measurement model provides an acceptable fit to the data: $\chi^2_{(395)} = 668.49$, goodness-of-fit index (GFI) = .90, Tucker–Lewis index (TLI) = .94, confirmatory fit index (CFI) = .94, and root mean squared error of approximation (RMSEA) = .05. Table 1 contains the reliability and validity estimates (Cronbach's alpha, composite reliability, and average variance extracted [AVE]), as well as fit indices (GFI, TLI, CFI, RMSEA, and square root mean residual [SRMR]) for the different multi-item constructs. Furthermore, the CFA for a single-factor model does not fit the data well ($\chi^2_{(405)} = 2131.12$, GFI = .54, TLI = .57, CFI = .61, RMSEA = .14), which confirms the superior fit of the five-factor model and alleviates concerns about common method bias.

To further assess common method bias, we compare several pairs of structural equation models in which we pair a model that includes an interaction term with another model in which we add a common method factor (Podsakoff et al., 2003; Song et al., 2006). For instance, for the structural equation model (SEM) that includes the EO \times procedural justice interaction (i.e., the equivalent of Model 4, Table 3), the comparison reveals virtually no differences in the fit indices between the model without the common method factor ($\chi^2_{(42)} = 81.72$; GFI = .95, TLI = .88, CFI = .92, RMSEA = .06) and the corresponding model that adds a common method factor ($\chi^2_{(41)} = 81.71$; GFI = .95, TLI = .87, CFI = .92, RMSEA = .07). The chi-square difference between the two models is not significant ($\Delta\chi^2_{(1)} = .01$; ns), and only small changes in the size and significance of the paths across the two models emerge. The same pattern of results emerges for the SEM equivalents of the models in which the other two-way interactions are included. These results, together with arguments that common method bias is less prevalent in studies that use highly educated respondents and multi-item scales (Bergkvist and Rossiter, 2007) or focus on moderating rather than main effects (Simons and Peterson, 2000), alleviate the possible concerns related to the use of a common respondent in our study.

The scales indicate convergent validity: The factor loadings are significant in the measurement model ($t > 2.0$; Gerbing and Anderson, 1988), and the AVE estimates are greater than or equal to .50 (Bagozzi and Yi, 1988), both when all constructs appear simultaneously in the measurement model (Table 1) and when we perform CFAs on each of the constructs individually. With regard to the discriminant validity among the constructs, none of the confidence intervals for the correlations between constructs

³ A common operationalization of organizational commitment involves Meyer and Allen's (1991) distinction among affective, normative, and continuance subcomponents: Affective commitment pertains to employees' emotional bond with their organization, normative commitment reflects the belief that loyalty to an employer is an obligation and thus something an employee "ought" to do, and continuance commitment pertains to understanding the costs of leaving the organization and thus the "need" to continue employment. The items used herein capture affective commitment, as this form of commitment aligns with our focus on the role of the social exchange relationship between functional managers and their organization (Allen and Meyer, 1990).

Table 2Descriptive statistics and correlations ($N=232$).

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1 Performance	3.52	0.76	1.00										
2 Entrepreneurial orientation (EO)	3.11	0.75	0.32	1.00									
3 Procedural justice	3.50	0.80	0.40	0.38	1.00								
4 Trust	3.38	0.79	0.29	0.32	0.52	1.00							
5 Organizational commitment	3.57	0.94	0.50	0.50	0.53	0.51	1.00						
6 Similarity to "ideal" configuration	-2.77	1.19	0.48	0.49	0.81	0.83	0.82	1.00					
7 Company size (log employees)	5.65	1.99	0.13	0.004	0.08	0.05	0.10	0.09	1.00				
8 Company age (years)	32.87	36.31	-0.02	-0.20	0.04	0.06	0.09	0.08	0.52	1.00			
9 Type of business (production)	0.32	0.47	-0.03	0.09	-0.02	0.05	-0.01	0.01	-0.02	-0.01	1.00		
10 Gender (1 = female)	0.12	0.33	0.14	0.10	0.11	0.22	0.21	0.22	0.04	0.03	-0.07	1.00	
11 Company tenure	9.72	7.94	-0.01	0.003	-0.03	0.02	0.08	0.04	0.43	0.32	-0.05	-0.16	1.00
12 Functional area (1 = marketing-related)	0.49	0.50	0.14	-0.08	-0.02	0.07	0.03	0.03	0.17	0.19	-0.08	0.03	0.004

includes 1.0 ($p<.05$) (Anderson and Gerbing, 1988), and the AVE estimates of the constructs are greater than the squared correlations between the corresponding pairs of constructs (Fornell and Larcker, 1981). In addition, we find a significant chi-square difference between the unconstrained and constrained models (correlation between two constructs set to 1) for all 10 pairs of constructs (Anderson and Gerbing, 1988). For example, the chi-square difference between procedural justice and trust ($\Delta\chi^2_{(1)} > 34.26, p<.01$) is significant, similar to that between trust and organizational commitment ($\Delta\chi^2_{(1)} > 21.79, p<.01$). These diagnostics provide strong evidence of discriminant validity.

5. Analysis and results

We provide the correlations and descriptive statistics for the study variables in Table 2. We use moderated hierarchical regression analysis to test our hypotheses (Cohen and Cohen, 1983), with a mean-centering procedure for the independent and moderating variables to minimize multicollinearity (Aiken and West, 1991). The VIF values are below 3 in all estimated models, suggesting that multicollinearity is not an issue in our analyses (Neter et al., 1985). In Table 3, we provide the regression results for several models. Model 1 contains only the control variables, Model 2 adds the effect of EO, and Model 3 adds the direct effects of procedural justice, trust, and organizational commitment. In Model 2, consistent with the starting point of our theoretical exposition, we find a positive effect of EO on performance ($\beta = .32, p<.001$), and the EO variable explains additional variance ($\Delta R^2 = .092, p<.001$). In Model 3, the addition of the three social exchange variables further increases the explained variance ($\Delta R^2 = .174, p<.001$), suggesting that these factors also affect firm performance. The main effects of procedural justice and organizational commitment are positive and significant, whereas the main effect of trust is not significant.

Hypotheses 1–3 predict positive moderating effects of the three social exchange variables on the relationship between EO and performance. To test these hypotheses, we add the individual interaction terms in Models 4–6 and all interaction terms simultaneously in Model 7. We note that each of the interaction terms improves the explanatory power of the models.

Table 3

Ordinary least squares estimation of performance.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Constant	3.106***	3.187***	3.256***	3.219***	3.204***	3.174***	3.174***	3.248***	3.186***
Company size (log employees)	0.071*	0.050	0.056*	0.054 ⁺	0.057*	0.061*	0.059*	0.056 ⁺	0.057*
Company age (years)	-0.003	-0.0003	-0.003	-0.003 ⁺	-0.003 ⁺	-0.003 ⁺	-0.003 ⁺	-0.002	-0.002
Type of business (production)	-0.032	-0.087	-0.024	0.004	-0.014	0.009	0.004	-0.065	-0.043
Gender (1 = female)	0.305 ⁺	0.220	0.070	0.067	0.040	0.061	0.048	0.052	0.035
Company tenure	-0.002	-0.004	-0.005	-0.004	-0.004	-0.005	-0.005	-0.005	-0.004
Functional area (1 = marketing-related)	0.194 ⁺	0.214*	0.186*	0.197*	0.210*	0.207*	0.213*	0.180 ⁺	0.200*
EO		0.319***	0.037	0.044	0.052	0.039	0.046	0.098	0.113
Procedural justice			0.193**	0.221**	0.200**	0.202**	0.205**		
Trust			-0.057	-0.060	-0.045	-0.057	-0.051		
Organizational commitment			0.323***	0.341***	0.343***	0.370***	0.364***		
H1: EO × procedural justice				0.158*			0.016		
H2: EO × trust					0.189**		0.100		
H3: EO × organizational commitment						0.152**	0.093		
Similarity to "ideal" configuration								0.266***	0.295***
H4: EO × similarity to ideal configuration									0.104*
F	2.360***	5.450***	10.030***	9.820***	10.310***	10.410***	8.910***	10.000***	9.860***
R-square	0.063	0.155	0.328	0.346	0.357	0.359	0.364	0.279	0.301
ΔR -square		0.092***	0.173***	0.018*	0.029**	0.031**	0.036**	0.124***	0.022*

Notes: Unstandardized coefficients (two-tailed p -values); *** $p<.001$; ** $p<.01$; * $p<.05$; ⁺ $p<.10$.

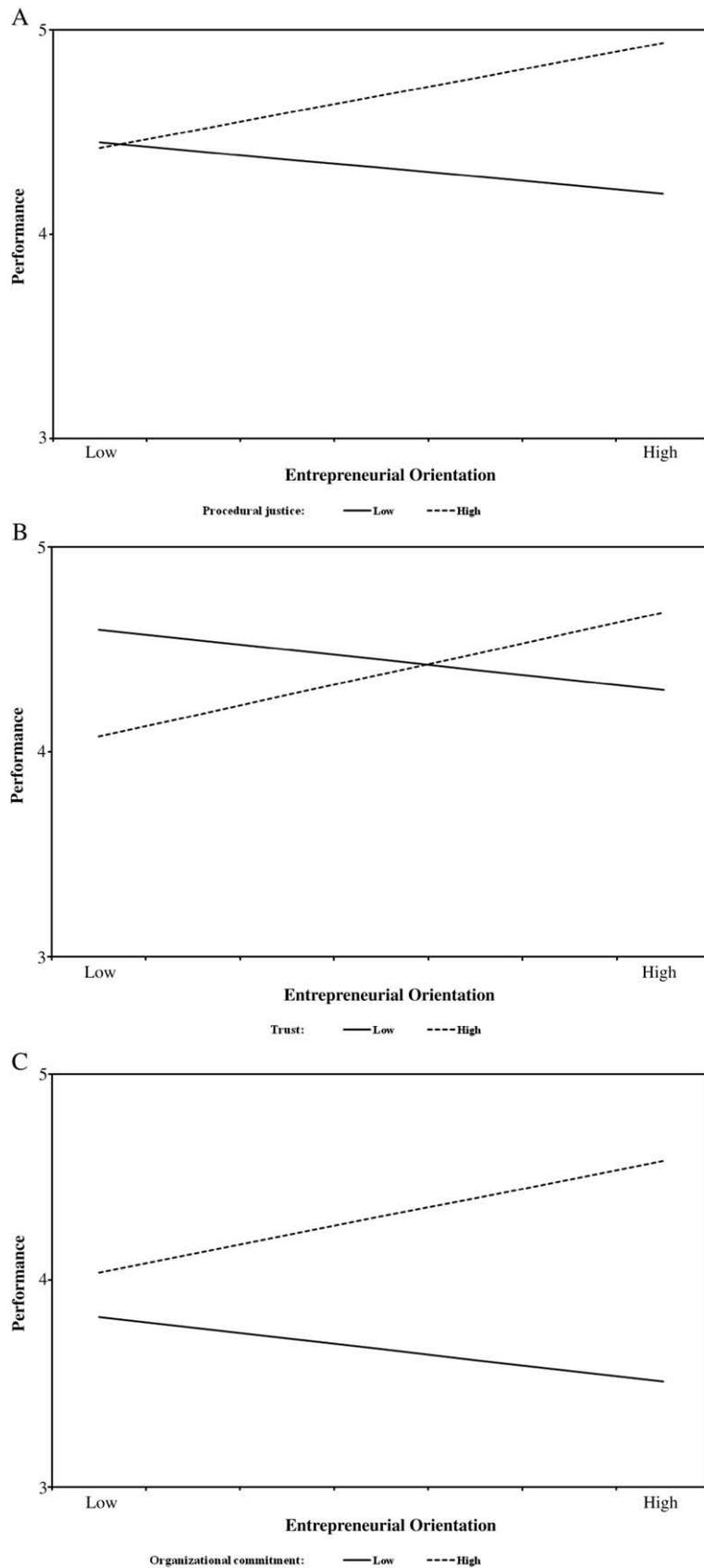


Fig. 2. Moderating effects of procedural justice, trust, and organizational commitment on the EO–performance relationship.

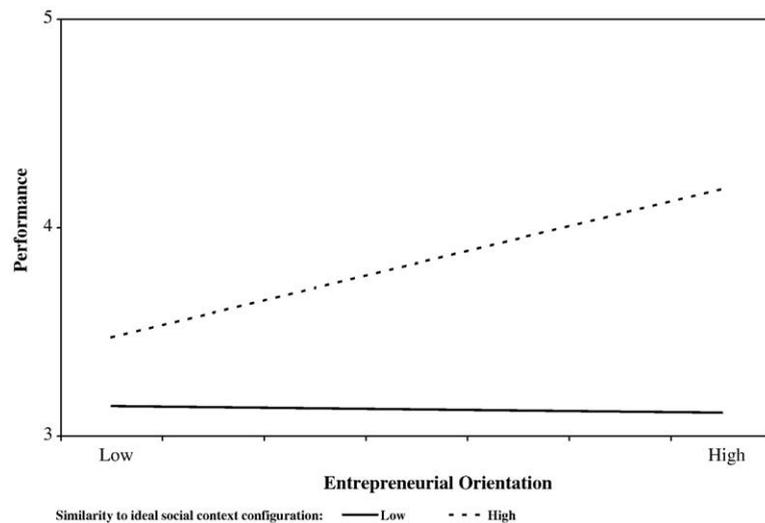


Fig. 3. Moderating effect of similarity to ideal configuration of procedural justice, trust and organizational commitment on the EO–performance relationship.

Model 4 reveals a positive and significant interaction effect between EO and procedural justice on performance ($\beta = .16$, $p < .05$). To understand the nature of the interaction, we plot the effects of EO on performance for high and low levels of procedural justice (Aiken and West, 1991), as illustrated in Fig. 2, Panel A. As the plot suggests, the EO–performance relationship is stronger at high levels of procedural justice and negative at low levels. This finding provides strong support for Hypothesis 1. In Model 5, the interaction effect between EO and trust on performance is positive and significant ($\beta = .19$, $p < .01$), and the corresponding plot in Fig. 2, Panel B, shows that the EO–performance relationship is stronger at high levels of trust and, again, negative at low levels. This finding provides strong support for Hypothesis 2. Finally, in Model 6, the interaction effect between EO and organizational commitment on performance is positive and significant ($\beta = .15$, $p < .01$). Its plot in Fig. 2, Panel C, indicates that the EO–performance relationship is positive at high levels of organizational commitment and negative at low levels. This finding provides strong support for Hypothesis 3.

When we include all the interaction terms simultaneously in Model 7, the interaction effects, though consistent in sign, become subdued and not significant. We attribute this shift to the different effects that the two-way interactions in Model 7 capture in the presence of other two-way interactions.⁴ Specifically, each of the interaction terms represents the differential effect of EO on performance for non-average values of the corresponding moderator (procedural justice, trust or organizational commitment), so their simultaneous inclusion implies that each moderator only operates in a space that contains the average values of the other moderators (Aiken and West, 1991). For example, the moderating effect of procedural justice in Model 7 reflects situations in which the values of both trust and organizational commitment are average. In contrast, in Model 4, the moderating effect of procedural justice covers the full set of values for trust and organizational commitment. The lack of significance in Model 7 thus suggests that each of the moderating effects is sensitive to the other moderators, in line with the configurational hypothesis tested next.

Hypothesis 4 suggests that when an organization's social context has higher similarity to the ideal configuration of procedural justice, trust, and organizational commitment, the relationship between EO and performance will be stronger. In Model 8, we add the main effect of the similarity to the ideal configuration to the model that includes the control variables and the main effect of EO. The effect of similarity is positive and significant ($\beta = .27$, $p < .001$), explaining substantial additional variance ($\Delta R^2 = .124$, $p < .001$). In Model 9, we add the interaction effect of EO and similarity. This effect is positive and significant ($\beta = .10$, $p < .05$). We illustrate the effect in Fig. 3, which shows the relationship between EO and performance for high and low values of similarity to ideal configuration. When similarity is high, the relationship between EO and performance is positive; when similarity is low, EO has virtually no relationship to performance. These results provide strong support for Hypothesis 4.

Finally, we undertake several post-hoc analyses to test the robustness of the results. First, we split the sample into two halves for each of the three moderators—using the mean as the cut-off value (Sarin and Mahajan, 2001)—and estimate Models 4–6 for each half. We find that the relationships are consistent with the results reported in Table 3. Specifically, the relationship between EO and performance is positive and significant at high levels of procedural justice ($p < .01$), trust ($p < .001$), and organizational commitment ($p < .01$). At low levels, the relationship between EO and performance is weaker and marginally significant for procedural justice ($p < .10$) and not significant for trust and organizational commitment.

⁴ The simultaneous inclusion of multiple interaction terms may prevent the detection of true moderating effects due to multicollinearity and the complex constellation of multiple factors (Aiken and West, 1991; Neter et al., 1985). Yet reporting the full model can provide an indication of the robustness of the results (Arnold, 1982; Covin et al., 2006), in particular with regard to the consistency of the signs of the interactions compared with those in the models in which the interaction terms are included separately.

Second, to test whether the effect of the internal social context configuration on the EO–performance relationship may work differently for specific *pairs* of the context's constitutive components, we test three additional regression equations, each containing a three-way interaction between EO and a pair of procedural justice, trust, or organizational commitment. We find that all three interaction effects are positive, but only two of them—EO \times procedural justice \times trust and EO \times procedural justice \times organizational commitment—are significant ($p < .05$ and $p < .01$, respectively). These results reinforce our configuration arguments, because a deficiency in any of the three social context components affects either one (or both) of the two three-way interactions and thus translates into a weakened EO–performance relationship. They also indicate that the presence of fair procedures may be the central component of organizations' internal social context that enhances the successful implementation of an EO into successful performance.

Third, to assess the possibility that the interactions between EO and the two cross-functional processes (procedural justice and trust) may influence performance *through* their influence on organizational commitment, we run two sets of pairs of structural equation models. Specifically, we compare the fit indices of (1) a model equivalent to Model 4 that includes EO \times procedural justice and excludes organizational commitment [$\chi^2_{(36)} = 70.14$, GFI = .95, TLI = .85, CFI = .90, RMSEA = .06] with a model that includes organizational commitment as a mediator [$\chi^2_{(44)} = 114.34$, GFI = .93, TLI = .79, CFI = .86, RMSEA = .08] and (2) a model equivalent to Model 5 that includes EO \times trust and excludes organizational commitment [$\chi^2_{(36)} = 69.03$, GFI = .95, TLI = .85, CFI = .90, RMSEA = .06] with a model that includes organizational commitment as a mediator [$\chi^2_{(44)} = 112.94$, GFI = .93, TLI = .80, CFI = .86, RMSEA = .08]. In both cases, the fit of the former models is superior to that of the latter (i.e., $\Delta\chi^2$ is significant at $p < .01$), which suggests that our models are properly specified.

6. Discussion

6.1. Discussion of results

We advance the notion that a firm's ability to leverage its entrepreneurial orientation (EO) into successful performance depends on internal social exchange processes that facilitate knowledge flows across functional departments (Floyd and Lane, 2000; Ireland et al., 2003; Nahapiet and Ghoshal, 1998). This study argues that effective knowledge exchange between functional departments—and the associated capability to combine resources necessary for the successful exploitation of entrepreneurial opportunities (Eisenhardt and Martin, 2000; Floyd and Lane, 2000; Teece et al., 1997)—depends on the fairness of the procedures that govern the relationship between these departments, the trust among functional managers, and the extent to which functional managers feel a strong identification with their organization and its goals.

We present empirical evidence that such internal social contingencies can enhance or diminish the relationship between EO and performance. Our approach thus contributes to the scholarly conversation about EO by highlighting the importance of how a firm enacts the internal levers of its EO. The effective implementation of an entrepreneurial orientation depends on not only the processes through which strategic decisions are made in the organization (Covin et al., 2006) but also, as we show, the social nature of the processes that link managers to one another. We find an overall positive relationship between EO and performance, yet this relationship proves nuanced when we consider the nature of several social exchange processes within the firm. It is stronger and positive *only* at high levels of procedural justice, trust, and organizational commitment.

The importance of procedural justice for the EO–performance relationship (Fig. 2, Panel A) aligns with previous research in the broader management literature, which attests to the benefits associated with maintaining fair procedures between exchange partners (Folger and Konovsky, 1989; Kim and Mauborgne, 1998; Korsgaard et al., 1995; Sapienza and Korsgaard, 1996), and adds to our understanding of how EO operates within the firm. Nurturing an open exchange of ideas and opinions is encouraged when there is a certain level of procedural justice in the interactions between functional departments, which ensures that departmental interests are not compromised and that recognition and rewards are properly shared. Such open exchanges in turn are instrumental for the effective exploitation of entrepreneurial opportunities (Eisenhardt and Martin, 2000; Ireland et al., 2003; Kuratko et al., 2005). In contrast, organizations in which functional managers perceive that they are not treated fairly may experience suppression of individual initiative and cross-functional collaboration and thus find it difficult to leverage their entrepreneurial potential. Our results indicate that in such cases, performance can be lower at higher levels of EO, perhaps due to the disruption that poorly implemented initiatives can create.

Similarly, our results (Fig. 2, Panel B) attest to the benefits of trust for the successful exploitation of entrepreneurial opportunities. When functional managers have full confidence in one another's honesty and truthfulness, they experience less need to monitor potential defective behavior by others, have more time to invest in extensive knowledge exchange, and exhibit a higher motivation to share tacit knowledge (Yli-Renko et al., 2001; Zaheer et al., 1998), which facilitates the effective implementation of EO. In contrast, at low levels of trust, the EO–performance relationship may turn negative, perhaps due to resistance to relinquish power when sharing knowledge (Kim and Mauborgne, 1998), which can be detrimental to the viability of the organization's entrepreneurial opportunities (Floyd and Lane, 2000). In such cases, poor knowledge exchange may exacerbate the uncertainty and costs associated with EO (Lumpkin and Dess, 1996).

We observe a similar pattern with respect to the moderating effect of organizational commitment on the EO–performance relationship (Fig. 2, Panel C). Strong identification with their organization reflects functional managers' willingness to interact intensively and share a broad range of knowledge with organizational peers (De Clercq and Sapienza, 2006; Kim, 1998). Whereas such interactions appear instrumental for the effective realization of the firm's EO, a lack of organizational commitment may prove counterproductive when, in the absence of strong emotional bonds with the organization, functional managers give up more easily in the face of the uncertainty or costs associated with entrepreneurial initiatives.

Beyond the individual moderating effects of procedural justice, trust, and organizational commitment, we find a strong holistic, configurational effect of these three aspects of social exchange. Using a systems approach to organizational contingencies, we show that deviation from the “ideal” configuration of organizational factors can undermine the effective implementation of a firm’s entrepreneurial posture (Drazin and Van de Ven, 1985; Ketchen et al., 1993, 1997; Vorhies and Morgan, 2003). The relationship between EO and performance holds only when the organization’s social context exhibits higher similarity to the ideal configuration of procedural justice, trust, and organizational commitment. We attribute this effect to the notion that these elements of the organization’s social context reinforce one another in enhancing knowledge flows within the organization and thus channeling entrepreneurial orientation efforts toward successful performance (De Clercq and Sapienza, 2006; Floyd and Lane, 2000). Although each of these social processes encourages people to cooperate, their simultaneous presence makes such cooperation more open, reciprocal, and sustainable (Kim and Mauborgne, 1998). If any of these elements of social context is deficient, it can gradually undermine the productive, cooperative climate within the organization and ultimately impede knowledge exchange when the organization seeks to exploit new opportunities. In short, a piecemeal focus on establishing procedural fairness, developing trust, or promoting organizational commitment can be ineffective for the success of the firm’s entrepreneurial aspirations.

6.2. Limitations, future research, and practical implications

We acknowledge several limitations to our study, whose consideration may offer opportunities for further research. First, the empirical context pertains to the collaboration between R&D-related functions and marketing-related functions. The R&D–marketing interface arguably plays a critical role in the implementation of an entrepreneurial posture, in that the successful development of new products or new market entry requires an appropriate match of market knowledge and technological know how (De Luca and Atuahene-Gima, 2007; Leenders and Wierenga, 2002), yet this context may not be representative of all types of cross-functional collaboration taking place within organizations. Although we have no a priori reason to believe that the hypotheses developed herein would apply differently to other contexts—such as the interaction between R&D or marketing functions on one hand and finance-related functions on the other—future research could examine the external validity of our findings to other settings. Second, though we focus on only two types of cross-functional processes—procedural justice and (goodwill) trust—other factors such as distributive justice (Greenberg, 1990) or competence-based trust (McAllister, 1995; Olson et al., 2007) could provide additional insights into the internal conditions that shape the relationship between EO and performance. Third, the cross-sectional nature of our data demands caution when drawing causal inferences, because the relationships we examine may be susceptible to reverse causality. Although we base our hypotheses on extant theory, managers in high-performing firms could become more committed, exhibit more goodwill toward their peers, or grow more willing to engage in activities that stimulate an entrepreneurial orientation. Further research should elucidate and distinguish among various internal causal processes by studying EO and performance over time. Fourth, further research could examine whether the interaction effects examined herein work differently across different performance outcomes, such as financial, operating, and marketing performance. Fifth, our results are based on firms in Canada. Although we do not expect much variation in the findings between the Canadian and other Western contexts, cultural factors could interfere with the arguments we apply, particularly when the dominant national culture may be at odds with the firm’s internal social exchange climate (Hofstede, 2001).

Our insights into the importance of intra-organizational social exchange for the successful realization of entrepreneurial aspirations also offer important managerial implications. When firms prepare to pursue new opportunities, top management should focus not only on the nature of the opportunities and navigating the external environments but also on attending to the social exchanges that permeate the relationships between key functional managers and encouraging the combination of knowledge and skills among them. Enacting rules that govern cross-functional collaboration in a fair manner or breeding trust among managers from different departments can decrease the odds that functional managers identify themselves as marketers, salespeople, product designers, or engineers. Instead, they may start thinking of each other as “partners” who share a common interest: the successful realization of the firm’s entrepreneurial endeavors. When engaged in strong internal partnerships, they will devote less attention, time, and effort to “pie-sharing” activities (i.e., the fight for resources) and more to “pie-expanding” activities that benefit all parties. In addition, fostering an atmosphere that inspires commitment to the organization and its goals—perhaps through clearly defining and effectively communicating the firm’s (entrepreneurial) mission and valuing each manager’s contribution to that mission—can create an environment of free expression and knowledge exchange among different functional areas that should make the mission more attainable.

In conclusion, we hope this study directs greater attention to the social contingencies through which entrepreneurially oriented firms achieve improved performance. This work offers a first attempt to advance understanding of the role of several internal social exchange mechanisms in this process and could serve as a stepping stone for a better understanding of how firms can translate their entrepreneurial posture into stronger market and competitive positions.

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