



# Promoting corporate entrepreneurship through human resource management practices: A review of empirical research

James C. Hayton\*

*College of Business, Utah State University, 3555 Old Main Hill, Logan, UT 84322-3555, United States*

---

## Abstract

As environments become more complex and dynamic, firms must become more entrepreneurial in order to identify new opportunities for sustained superior performance. Corporate entrepreneurship (CE) involves organizational learning, driven by collaboration, creativity and individual commitment. Therefore, it is widely held that HRM practices are an important driver of success. However, there is a pressing need for empirical research that addresses the contributions that HRM makes to a firm's ability to accept risk, be innovative and be proactive. This paper reviews empirical research linking human resource management (HRM) practices with CE. It is found that although there is consensus as to the importance of HRM to CE, the empirical evidence is mixed and tends to lack a clear theoretical explanation. This review identifies two central themes that need to be addressed as we seek a theoretical explanation for this important relationship: individual risk acceptance and the encouragement of discretionary entrepreneurial contributions. It is suggested that these two issues are interdependent. Potential theoretical avenues and future research directions are discussed.

© 2005 Elsevier Inc. All rights reserved.

*Keywords:* Corporate entrepreneurship; Human resource management; Empirical research

---

## 1. Introduction

Corporate entrepreneurship (CE) rests upon an organization's ability to learn through both exploration of new knowledge and exploitation of existing knowledge (e.g., [Floyd & Wooldridge, 1999](#); [McGrath,](#)

---

\* Tel.: +1 435 797 1658; fax: +1 435 797 1091.

E-mail address: [jhayton@b202.usu.edu](mailto:jhayton@b202.usu.edu).

2001; Zahra, Nielsen, & Bogner, 1999). These learning processes are dependent upon an organization's intellectual capital and in particular human and social capital (e.g., Kanter, 1983, 1985; Nahapiet & Ghoshal, 1998; Stevenson & Jarillo, 1990). In his discussion of corporate entrepreneurship, MacMillan (1987) suggests that "We are looking at a situation where [Human Resource Management] intervention is perhaps imperative, for surely there is no other function that has the skills and training to orchestrate the necessary informal processes" (p. 451).

Over the past three decades, a small but growing literature has emerged which empirically examines the association between human resource management (HRM) practices and CE. However, a significant challenge exists for researchers seeking to draw conclusions from this research, in that CE is not a one-dimensional construct. In fact, CE includes innovation, venturing and strategic renewal activities (e.g., Guth & Ginsberg, 1990). Furthermore, CE may be internally or externally oriented (e.g., Zahra, Jennings, & Kuratko, 1999) and has both formal and informal aspects (e.g., Burgelman, 1983). As a result, research that examines the contribution of HRM practice to CE varies widely in focus and specificity with respect to the dependent variable. Therefore, the purpose of this paper is to summarize and organize this literature with the aim of identifying what we know and areas where future research can enhance our understanding. This summary will also make a contribution from the perspective of practice. As organizations increasingly employ strategies relying upon entrepreneurship and innovation (e.g., Meyer & Heppard, 2000) they need to identify the key HR drivers of these strategies (e.g., Becker, Huselid, & Ulrich, 2001). This review summarizes what we know with respect to these HR drivers of entrepreneurship.

The focus of this review is on empirical studies of entrepreneurship in established organizations rather than the process of new venture creation. The literature was identified using the electronic databases ABI-Inform and Business Source Premier. These databases include collections of journals that typically publish research on either HRM practices or corporate entrepreneurship (e.g., *Academy of Management Journal*, *Strategic Management Journal*, *Personnel Psychology*, *Journal of Applied Psychology*, *Entrepreneurship Theory and Practice*, *Human Resource Management Review*, *Journal of Business Venturing*). The search terms used were corporate entrepreneurship, entrepreneurship, intrapreneurship, innovation and venturing. These were cross referenced with the search terms HRM and human resources, human capital and human resource management. We also examined the reference sections of both empirical and conceptual articles for studies that were not revealed through an electronic search.

CE is a strategic orientation involving the regeneration of products, processes, services, strategies or even whole organizations (e.g., Covin & Miles, 1999). As such, CE supports sustained competitive advantage through the continuous generation and exploitation of new sources of knowledge. Therefore, CE can have significant impact upon organizational financial and market performance (e.g., Zahra, 1996). In order to help clarify the discussion, this review organizes the empirical literature into a typology based upon its focus in terms of the independent variables (HRM) and dependent variables (CE). This is illustrated in Fig. 1, which also categorizes the studies considered in this review.

The first dimension is the conceptualization of HRM practices. HRM research that addresses firm level outcomes tends to take one of two perspectives. Some researchers have focused upon individual HRM practices, such as compensation (e.g., Balkin & Gomez-Mejia, 1984, 1987), while others have examined the influence of entire HRM systems (e.g., Laursen, 2002). The growing popularity of the systems perspective reflects interest in the impact that the HR function, as a whole, can have upon organizational performance. CE is an important aspect of firm performance that HRM systems are expected to influence.

	Innovation	Venturing	Corporate Entrepreneurship
<b>Individual HR Practices</b>	Balkin & Gomez-Mejia (1984; 1987); Balkin & Bannister (1993); Balkin et al. (2000)	Steele & Baker (1986); Block & Ornati (1987); Sykes (1992)	
<b>HR Systems or sets of HR Practices</b>	Souitaris (2002); Laursen (2002); Laursen & Foss (forthcoming).	Hill & Hlavacek (1972); von Hippel (1977); Souder (1981)	Twomey & Harris (2000); Hornsby, Naffziger, Kuratko & Montagno (1993); Kuratko, Montagno & Hornsby (1990); Hornsby, Kuratko & Montagno (1999) Hayton (2004).
<b>Organizational Culture</b>	Chandler, Keller & Lyon, (2000)	MacMillan, (1987)	Morris, Davis & Allen (1994); Zahra, Hayton & Salvato (2004)

Fig. 1. Typology of HRM and corporate entrepreneurship research.

In addition to studies which address HRM practices and systems, we consider empirical studies of the association between organizational culture and CE. The rationale for including these studies is that HRM practices are an important tool for creating and reinforcing an organization’s culture and values (e.g., Deal & Kennedy, 1983; Schein, 1992). Therefore, it is useful to consider how HRM may indirectly influence CE through the creation of an ‘innovation supportive culture’ (Chandler, Keller, & Lyon, 2000). This is reflected in the typology in Fig. 1.

The second dimension of our typology reflects which aspect of CE is the focus for research. Guth and Ginsberg (1990) offer a definition of CE involving the type of entrepreneurial activities engaged in by firms: innovation, venturing, and strategic renewal. Innovation and venturing refer to “the birth of new businesses within existing organizations” (Guth & Ginsberg, 1990, p. 5). Innovation may be considered a process by which inventions are transformed to marketable or value adding products, processes, services, or organizational changes. Venturing involves the creation of a business through either a new business unit, the acquisition of a new business, or through partnering with another organization. Strategic renewal refers to “the transformation of organizations through renewal of the key ideas on which they are built” (Guth & Ginsberg, 1990, p. 5). Strategic renewal is the least likely to be observed in practice as it occurs the least frequently (Covin & Miles, 1999). There have been no examinations of the association between HRM and this aspect of CE. Therefore, we do not consider it further in the present review.

Researchers interested in how HRM influences CE either focus on the whole construct or on one of its components such as innovation or venturing. Therefore, in our review we will discuss the literature that addresses each combination of these antecedents and outcomes, as illustrated in Fig. 1. By organizing the literature in this way, we hope to more easily identify important directions for future research.

Research linking HRM practices to firm level outcomes such as innovation and venturing should acknowledge the issue of considering multiple levels of analysis (e.g., Klein & Koslowski, 2000). The empirical research reviewed here discusses the link between HR practices or systems of HR practices and firm level outcomes. Although the unit of analysis is the organization, the underlying assumptions driving these analyses involve the influence of HR practices upon employee behaviors. In this regard, the implicit assumption reflects the behavioral model of HR practices proposed by Schuler and Jackson (e.g., Jackson, Schuler, & Rivero, 1989; Schuler & Jackson, 1987). However, the link between individual employee contributions and organizational level phenomena remains largely untested in the

literature (DeNisi, Hitt, & Jackson, 2003). This is most likely due to the complexities of conducting cross level research in general (Klein & Koslowski, 2000), and in particular, the challenge of gathering a large enough sample when organizational level phenomena are the outcome of interest (e.g., Huselid, 1995).

This paper makes three contributions to the literature on HRM and CE. First, in reviewing the empirical literature we highlight points of agreement and disagreement and identify gaps in our current understanding and potential directions for future study. Understanding where we have been and what we now know will help plan future research directions. Second, this paper identifies some key areas for synthesis of findings in research across the aspects of CE. Synthesis of prior results will contribute to the development of a theoretical account of the processes underlying CE. Finally, we identify several possible theoretical bases that may contribute to an understanding of how HRM influences CE. A significant limitation in the literature concerning HR and CE is a lack of consensus concerning the appropriate theoretical perspective. Therefore, we believe that future research will be enhanced by the adoption of a clear theoretical paradigm.

## **2. Managing corporate entrepreneurship**

CE can be understood as the result of the successful search for entrepreneurial opportunities arising from asymmetries of market or technological knowledge. By exploiting these asymmetries, entrepreneurial firms are able to extract entrepreneurial profits (Schumpeter, 1934). Firms with an entrepreneurial orientation are able to continuously identify and exploit such opportunities (Lumpkin & Dess, 1996). In order to do so, firms must be able and willing to take risks, be innovative and proactive (Miller, 1983). The reward for such an orientation is superior financial and market performance (e.g., Antoncic & Hisrich, 2001; Chandler et al., 2000; Lööf & Heshmati, 2002; Zahra & Covin, 1995).

Underlying an entrepreneurial orientation is a tendency to pursue the creation and acquisition of new knowledge and the integration of new knowledge and capabilities with existing resources in the form of new combinations (Quinn, 1979; Schumpeter, 1934). Therefore, corporate entrepreneurship is dependent upon a firm's ability to continuously learn and unlearn (e.g., Floyd & Wooldridge, 1999; McGrath, 2001), by creating and exploiting new combinations of knowledge.

Management of CE is distinct from traditional management because of the conditions of greater uncertainty and knowledge-intensity (Kanter, 1985). There is a constant need to acquire new knowledge and assimilate it, and this is achieved largely through cross functional and extra-organizational relationships. As a result, organizations tend to develop very loose, ever shifting boundaries (e.g., Kanter, 1983). A further challenge for the management of CE is that in entrepreneurial firms, individuals are faced with the need to quickly choose among multiple competing courses of action, frequently when there is insufficient information to decide on purely rational grounds (e.g., Busenitz & Barney, 1997). A result of this dynamism, complexity and uncertainty, is that CE requires coordination through mutual adjustment rather than command and control, and is driven by commitment rather than consensus (Kanter, 1985; MacMillan, 1987).

Fostering CE demands a more enlightened approach to management including decentralization of authority, participation in decision making, cooperation, avoidance of bureaucracy and encouragement of risk taking and creativity (Luchsinger & Bagby, 1987). It is widely held, therefore, that HRM practices can make a significant difference in the encouragement of CE. However, while the unique

challenges of managing CE have been sketched, more specific prescriptions with respect to HRM practice tend to be difficult to find, and are often contradictory.

A significant challenge in understanding the role of HRM in CE is that empirical research is limited in quantity, frequently lacks a theoretical underpinning, and is also quite diverse. This diversity is a result of researchers examining a range of HRM practices and different aspects of CE. Therefore, this review is divided according to whether the focus is individual HR practices, the HRM system, or organizational culture, and the outcome of interest—corporate entrepreneurship as a whole, or its sub-dimensions of innovation, venturing, and strategic renewal (Guth & Ginsberg, 1990). In the following sections, we first summarize research in each of these areas. Having dissected the relevant literature, we will then integrate the findings to suggest areas of synthesis, some potentially fruitful theoretical avenues, and future research directions.

### 3. Literature review

#### 3.1. HRM practices and innovation

One of the most widely studied aspects of CE from an HR perspective is innovation, and of all HR practices, the influence of compensation practices on innovative performance has received the most attention (e.g., Balkin & Bannister, 1993; Balkin & Gomez-Mejia, 1984, 1987; Balkin, Markman, & Gomez-Mejia, 2000). These studies have focused upon pay practices in high technology firms (Balkin & Gomez-Mejia, 1984, 1987), including the pay of scientists and engineers directly involved in the innovation process (Balkin & Bannister, 1993) and the pay of CEOs (Balkin et al., 2000). A central question in this research is how to best promote the innovative contributions of individuals, given the inherent uncertainty of the ultimate success of an innovation.

Balkin and colleagues (Balkin & Gomez-Mejia, 1984; Balkin et al., 2000) have noted that in order to encourage risk averse agents to make risky investments in innovation, pay levels should be higher and some part of total compensation should be based upon the levels of investment (rather than the outcomes of innovation such as increased profits). However, evidence suggests that incentive compensation is most likely to be used in high tech firms operating in the early stages of their product life cycle, when sales volume is low and turnover high (Balkin & Gomez-Mejia, 1984). Therefore, the research indicates that there is a contingency relationship between compensation practices that support innovation and organizational strategy, degree of environmental complexity, and the stage of the organizational life-cycle.

It appears that important compensation contingencies reflect differences in the risk environments in which firms are operating. That is, the need to encourage employees to accept risk is moderated by the degree of risk or uncertainty associated with innovation. In complex, high technology environments, or in firms that are still in the highly uncertain start-up stage, the need for incentives will be greater than for mature firms in stable and relatively well understood technological environments.

While this stream of research focuses upon scientist, engineers and executives, it provides important insights that may be extrapolated to compensation for all employees who are expected to contribute entrepreneurial behaviors. Agency theory suggests that all organizational members, as agents unable to diversify their risk, will be more risk averse than the principals for whom they work. Therefore, compensation systems must take into account the need to encourage risk taking by tying pay to these behaviors or investments by individuals. According to the agency perspective, we therefore expect that

firms which (1) monitor innovative contributions or investments, and (2) tie a portion of rewards to these investments (and not outcomes) will be more entrepreneurial. Furthermore, an important implication of these studies is that the concepts of risk and uncertainty need to be addressed very clearly in future research on compensation and CE. The study by [Balkin and Gomez-Mejia \(1984\)](#) suggests that employee perceptions of risk may change in a systematic way with changes in environmental complexity and organizational stability. Therefore, to enhance our understanding of compensation practices for promoting innovation and CE, it is important to include considerations of risk acceptance by employees as agents. Agency theory offers one theoretical avenue for exploring these issues as this perspective acknowledges that principals (owners), principal-agents (managers), and agents (employees) each have distinct risk profiles.

### 3.2. *HRM systems and innovation*

A small group of studies have examined the impact of sets or systems of HR practices upon innovation. [Soutaris \(2002\)](#) examines the relationships between HR and innovation in Greek manufacturing firms.<sup>1</sup> Soutaris reports that both human capital investments and the incentives offered for contributions to innovation were of major importance with respect to firm innovativeness. This study therefore offers evidence for the need to reinforce risk acceptance and innovative contributions with extrinsic rewards. This study is interesting in that of all HR practices studied, compensation was the most important for innovation.

[Laursen \(2002\)](#) and [Laursen and Foss \(2003\)](#) propose that ‘new’ HRM practices (e.g., teamwork, delegation and performance related pay) will have a greater impact on innovation when used in combination and this relationship will vary according to the knowledge-intensiveness of industries. This is expected because these practices promote decentralization, better coordination and better combination of knowledge and skills. Therefore, these studies implicitly assume an organizational learning perspective. In a study of Swedish firms, [Laursen \(2002\)](#) finds that not all HR practices are equally influential. Team based practices are positively associated with innovation in medium knowledge intensity industries; performance related pay is significant in high knowledge intensity industries. At the system level, HRM practices combined were associated with innovation for medium and high knowledge intensity firms. In a second study from Sweden, [Laursen and Foss \(2003\)](#) find that functional integration and internal training predicts innovation. However, there is little advantage to using a combination of three HRM practices over just one such practice. Thus, although these studies support a behavioral view of HRM and innovation ([Jackson et al., 1989](#)) in which HR practices drive desired behaviors, there is limited support for a synergy or internal consistency perspective ([Delery & Doty, 1996](#)) with respect to CE.

In summary, empirical research into the influence of HRM upon the innovation aspect of CE reveals several issues that need further exploration. Clearly, the provision of incentives for risk acceptance is a

---

<sup>1</sup> Several studies included in this review were conducted outside of the US. It is important to acknowledge that HRM practices, levels of corporate entrepreneurship and their interrelationships may be influenced by dimensions of national culture (e.g., [Hayton, George, & Zahra, 2002](#)). There are a range of cultural dimensions that may influence organizational learning and entrepreneurship. Further, there is currently not a coherent overarching framework for understanding the association between HRM and CE in any one culture, let alone examining cross-cultural variations. Thus exploration of this potentially important moderating condition is beyond the scope of the present discussion. However, this is an important question that requires further consideration and should form the focus for future cross-cultural studies of CE.

central issue when one considers the role of individual discretionary contributions in CE. As noted by Jones, Morris, and Rockmore (1995) “employees must be more opportunistic, creative and achievement oriented, yet tolerant of ambiguity and willing to take risks” (pp. 86–87). However, it is also apparent that the appropriate level of incentives will vary as the uncertainty in and around an organization changes. Not all entrepreneurial firms operate in high technology industries, and not all are emerging ventures (e.g., Covin & Miles, 1999; Zahra, 1996; Zahra, Jennings et al., 1999, Zahra, Nielsen et al., 1999). Employees of firms in dynamic, complex, high technology environments are likely to perceive different levels of uncertainty regarding innovative contributions than are those employees of firms in stable, low technology manufacturing environments. Similarly, the growth stage of the firm is likely to influence individual perceptions of risk associated with innovation, and therefore impact the appropriate approach to encouraging its acceptance. To date, these environmental and organizational contingencies have received very little consideration (see Balkin & Gomez-Mejia, 1984, 1987). Yet without these considerations, it is unlikely that any consistent findings will be established concerning how HRM practices can encourage innovative performance.

A second emerging theme that has been highlighted by research into HR systems and innovation is that HRM practices can build an environment that is supportive of cooperation, promotes the development of human and social capital, and therefore encourages organizational learning. While organizational learning theory has not been invoked explicitly in these studies, it is apparent that HRM practices can enhance an organization’s context for learning. Therefore, empirical research on HR and innovation suggests two important avenues for further exploration: the promotion of risk acceptance through economic exchange; and the creation of a social exchange environment conducive to knowledge creation and sharing.

### *3.3. HRM practices and corporate venturing*

A second important aspect of CE is corporate venturing, which involves the creation of entrepreneurial opportunities through the establishment or acquisition of a new business. This may take place within the structure of the existing firm (internal venturing) or outside in an independent or external venture.

As with innovation, a key challenge for firms engaging in venturing activities is the question of how to structure compensation practices. In particular, a central question is how to balance internal equity in the established organization while achieving external equity in the new venture. While external equity supports employee attraction and retention, internal equity supports cooperation and knowledge exchange. On the one hand, compensation should contribute to the creation of an entrepreneurial climate by stimulating entrepreneurial contributions and acceptance of greater career risk, and should also prevent the loss of employees to competitors (Steele & Baker, 1986). This suggests that an emphasis should be placed upon maintaining external equity in pay system design through the creation of a venture-specific pay structure. On the other hand, arguments for emphasizing internal equity between venture employees and other corporate employees include the observation that there is no financial risk for the internal entrepreneur, and that compensation practices consistent with the rest of the corporation eases flow of resources to and from the venture and aligns interests of venture employees with the corporation rather than with the venture (Sykes, 1992).

The challenge is particularly complex because compensation serves to provide feedback on successful performance and contributes to the creation of the sustained commitment and perseverance that is

essential to the success of new ventures (MacMillan, 1987). However, there is a high degree of uncertainty and difficulty in measuring success in a new venture context. New ventures frequently do not become profitable for many years, their development trajectories often shift over time and corporate managers are unlikely to remain for the duration of the development of the new business. Furthermore, a compensation system must not provide incentives for managers to continue to pursue a failing venture and must enable the corporation to ‘shoot the wounded,’ and manage damage control so that failing ventures will change direction or be shut down (Block & Ornati, 1987; MacMillan, 1987).

Given the many issues associated with compensating employees in new ventures, it is surprising to find that Block and Ornati (1987) report no significant differences between successful and unsuccessful firms with respect to the design of an ideal compensation scheme. Although many firms propose that incentive limits are necessary, there is no agreement on what that limit needs to be. Block and Ornati conclude that most compensation systems were not much of an incentive because of incentive limits averaging just 100% of salary and the use of equity-based bonuses even when new ventures do not obtain positive returns for several years.

Sykes (1992) examined the compensation strategies at firms engaged in formal venturing activities and also reports no clear pattern of compensation design in successful ventures. Both Block and Ornati (1987) and Sykes (1992) advocate a ‘milestones’ based reward structure, at least in the early years of a venture’s development. Such an approach recognizes the difficulty of measuring outcomes and represents a reward for the acceptance of additional risk by an organizational entrepreneur.

Sykes’ (1992) research also suggests an important contingency for designing pay systems in new ventures: the relatedness of the new venture to the corporation in terms of resources, and capabilities. When the parent organization contributes resources, personnel or represents an important customer to the venture, these exchanges, particularly personnel, will be facilitated by a consistent pay structure. The question of whether this ‘relatedness’ contingency outweighs the need to emphasize external equity deserves further attention. Agency theory would appear to be a useful theoretical perspective to frame the argument. The need to promote acceptance of risk has already been noted. However, the appropriate incentive design in this case is likely to be moderated by the need to encourage collaboration and resource exchange across venture boundaries. Therefore, the relationship between compensation strategy and effective corporate venturing will be moderated by the relatedness of the new venture to the existing business.

In general we only know that there is no simple pattern when it comes to rewarding venture managers. There are so many contingencies, including the measurement of venture success and the relatedness of the business to the parent corporation, that more widespread study is necessary before prescriptions can reasonably be made. While these studies provide a useful insight into an infrequently studied problem, inferences tend to be limited by sample size and lack of theoretical basis.

### *3.4. HRM systems and corporate venturing*

Studies of the contributions that an HRM system can make to corporate venturing often highlight a list of key success factors. For example, in an early study Hill and Hlavacek (1972) examined the structural characteristics of 100 venture teams. Of these, several characteristics are associated with HRM practices, including the use of autonomous, multidisciplinary, teams with little or no time pressures, no job descriptions, and the highly committed and involved team members given a share in risks and profits. Such features of successful venture teams emphasize the role HRM plays in creating a ‘climate’ for learning involving informal, discretionary and largely autonomous activities (Burgelman, 1983).



Von Hippel (1977) conducted a comparison of successful and unsuccessful internal ventures. This study highlights two important themes in this literature: the question of whether entrepreneurial roles need to be formally defined, and the issue of risk. Von Hippel finds that neither the level of investments in new ventures, nor venture success is related to whether the venture sponsor role is formal or informal. However, there is some evidence that when formal, the sponsor's role may be undesirable due to the visibility of failure and the fact that successes are frequently spun off. In contrast, when this role is informal, professional risk and exposure is reduced. The implication is that some informal mechanisms for encouraging venturing activity may be more acceptable to employees and possibly more motivating.

Second, von Hippel observes that the risk–reward profile of running a new venture is more attractive for less senior managers. Therefore, this study suggests that while sheltered from some personal financial risk, organizational entrepreneurs are still influenced by considerations of career risk. It also suggests that there are certain tradeoffs that must be made if CE is formalized in an organization. This suggests a further contingency in the examination of risk acceptance—individual differences in terms of career stage. Von Hippel's research also highlights the fact that perceptions of risk and the formal or informal nature of the entrepreneurial role in organizations are not unrelated issues.

Souder (1981) examines success factors for corporate venturing by comparing 50 successful and 50 unsuccessful new product development cases. He reports six success factors: the ability to identify organizational entrepreneurs; the need for formal recognition of a project to promote legitimacy and a sense of ownership; the importance of entrepreneurs being able to develop informal influence in the organization; the presence of an organizational sponsor or a champion; the need to decentralize responsibility for managing projects to the lowest organizational level which allows for coordination of key players; and the granting of discretionary power over budget and organization of the project to the entrepreneur. Souder's study provides important evidence of how organizations can stimulate commitment through the provision of support, and promote risk taking in exchange for a sense of ownership.

Souder's study also suggests that informal networks and influence are an important success factor for organizational entrepreneurs. In addition to possessing technical and market knowledge, a key to entrepreneurial effectiveness is the extent to which the entrepreneur is “known by many others throughout the firm” (p. 18) and who is trusted, respected, influential. In other words, someone who has built a degree of social capital that can be successfully used to build a network of support around the new innovation (Kanter, 1983, 1985; Nahapiet & Ghoshal, 1998).

The literature on HRM and corporate venturing is less well developed and more diverse than that for innovation. However, it does return to the two important themes already noted in the literature on HR and innovation: the issue of formal versus informal entrepreneurial roles and the question of risk acceptance. Souder (1981) and others (e.g., Kanter, 1983, 1985; MacMillan, 1987) have noted the importance of corporate entrepreneurs who have access to informal networks. Informal networks evolve in cycles of perspective sharing, trust building and cooperation that enhance the exchange of knowledge and promote organizational learning (Adler & Kwon, 2002; Bolino, Turnley, & Bloodgood, 2002; Leana & Van Buren, 1999; Perry-Smith & Shalley, 2003). Thus, the development of social capital is largely the result of informal processes. It has been suggested that when employees engage in discretionary, extra-role behaviors that benefit coworkers and the organization, they help build trust, a shared perspective and consequently social capital (Bolino et al., 2002). Therefore, one would expect that HRM practices that influence employee discretionary helping (citizenship) behaviors will be associated with the development of richer networks of informal relationships, greater trust, social capital and knowledge sharing.

This social exchange perspective is an avenue that holds some promise for the understanding of the impact of HRM on venturing activities that may provide some explanatory power over and above considerations of economic exchange through agency theory.

The second issue that the literature on HRM and venturing highlights is the issue of risk. This is consistent with the earlier discussion of HRM and innovation. It also highlights an opportunity for integration across the two streams in that venturing, like innovation, requires employee risk acceptance. The distinction between the two relates to which types of employees have the opportunity to engage in each of the two activities. While all employees may be encouraged and have the opportunity to engage in innovative activities, the opportunities to engage in venturing may be more restricted. What these two aspects of CE have in common, however, is the need to understand risk profiles of individual employees, in relation to contingencies such as environment, organization, and also individual differences. It is clear that development of our understanding of the HRM–CE relationship hinges upon the issue of risk acceptance by employees and managers.

### *3.5. HRM systems and corporate entrepreneurship*

Studies of HRM systems take a perspective that has become increasingly popular in examinations of HRM and firm level outcomes (e.g., [Heneman & Tansky, 2002](#); [Huselid, 1995](#)). It is generally proposed that when HRM practices are internally consistent, they reinforce one another so that their sum is a synergistic influence upon desired employee behaviors (e.g., [Delery & Doty, 1996](#)). However, only a few studies have examined the influence of sets of HR practices on firms' overall levels of CE and in most cases, the synergy argument has not been examined directly.

[Hornsby, Kuratko, and Montagno \(1999\)](#) identify five success factors linking HR practices to CE. These include the appropriate use of rewards, the provision of management support for innovation, the availability of resources for innovation, an organizational structure conducive to learning and cooperation, and individual risk taking. Prior studies of US samples have confirmed the empirical significance of these five dimensions of organizational environments for promoting CE (e.g., [Hornsby, Naffziger, Kuratko, & Montagno, 1993](#); [Kuratko, Montagno, & Hornsby, 1990](#)). Furthermore, these success factors are considered important for CE in both the US and Canada ([Hornsby et al., 1999](#)). Interestingly, however, these five success factors only predict entrepreneurial behaviors for US managers ([Hornsby et al., 1999](#)) suggesting that while an organization's internal environment is important, it is by no means the only antecedent of CE. The contribution of the studies by Hornsby and colleagues is an empirical model of success factors supporting both aspects of CE. A limitation of this research is that it addresses HR issues only in very general terms. The interaction or synergistic influence of these factors is not tested.

In a study of 112 firms from a wide range of industries, [Morris and Jones \(1993](#); see also, [Jones et al., 1995](#)) identify five sets of HRM practices associated with CE: performance appraisals; compensation; orientation and training; recruitment and career development; and job design. First, performance appraisals are oriented towards ends rather than means; they measure both individual and group performance; their content includes innovation and risk taking behavior (interestingly the latter are means rather than ends); they reflect a tolerance for failure; and they take a longer time frame into account than for traditional administrative management. Second, in entrepreneurial firms, compensation emphasizes external equity rather than internal equity; base pay is lower and there is a greater amount of pay at risk. Entrepreneurial firms also balance both long and short-term performance and individual and

group performance. Third, entrepreneurial firms invest more time and effort on orientation and there is more group oriented training. Fourth, entrepreneurial firms emphasize the external labor market and offer a variety of career paths. Finally, job designs tend to be less structured, and more complex, offering more discretionary authority and freedom. The synergistic effects among these practices are not evaluated.

Twomey and Harris (2000) report evidence of a correlation between the presence of a bundle of HR practices (selection, training, performance management, rewards and career development practices) which encourage ‘intrapreneurial’ behaviors and CE. Unfortunately inferences from this study are limited due to the correlational nature of the evidence and the use of a single source for data. Finally, Hayton (2004) distinguishes ‘discretionary’ HRM practices from ‘traditional’ practices. Discretionary practices, such as incentive pay, employee suggestion schemes and formal employee participation programs are those which encourage employee commitment, cooperation, knowledge sharing and voluntary, extra-role behaviors. In contrast, traditional HR practices focus upon defining jobs, staffing jobs through a matching process, and monitoring prescribed performance. In a study of US small and medium sized enterprises, Hayton (2004) provides evidence that discretionary practices promote CE and this relationship is strongest for firms operating in high technology industries.

One common thread in these studies of HRM practices and CE is the need for HR systems to support informal employee contributions, to encourage cooperation and to avoid unnecessary bureaucratic constraints on behavior. However, while it is conceptually reasonable to expect that HRM practices will reinforce one another in a synergistic fashion in their influence upon CE, to date the evidence is rather limited. It is true that there seem to be some consistent practices such as the provision of organizational support, careful design of compensation and performance management systems. However, when we examine details of these practices, important contingencies such as technology, strategy, environment or firm life-cycle are rarely considered. A further limitation in current research on HR systems and overall CE is a general absence of theory. However, before discussing relevant theoretical perspectives and potential future directions for research, we examine one further set of empirical literature: organizational culture and CE.

### 3.6. *Organizational culture and CE*

Most studies of organizational culture and CE do not explicitly address HRM practices. However, this stream of research is of interest because of the role played by HRM practices in maintaining an organization’s unique culture (e.g., Schein, 1992). Organizational culture is an important source of sustained competitive advantage as it possesses the characteristics of a strategic asset, namely scarcity, inimitability, value creating and non-tradeability (Barney, 1986). Furthermore, many scholars have highlighted the importance of culture in promoting the discretionary, informal behaviors that lie at the heart of CE (e.g., Burgelman, 1983; MacMillan, 1987).

In a comparison of the new business development practices of successful and unsuccessful firms, MacMillan (1987) reports that successful firms had in common the ability to create a venturesome culture by inspiring pervasive commitment throughout the division, by avoiding extrinsic incentives and promoting intrinsic rewards. Effective leaders were able to build the subordinate confidence needed to experiment and take on additional risk. This was achieved by providing encouragement and the necessary managerial support to develop from an existing competence base. Support included providing the freedom to act without rigid constraint and monitoring. The results of this study suggest that HRM

can influence CE through the creation of an entrepreneurial culture—a ‘loose-tight’ organization which promotes entrepreneurship with intrinsic rewards, delegation of responsibility and avoiding overly rigid controls.

In an examination of a single dimension of culture, [Morris, Davis, and Allen \(1994\)](#) propose that the level of individualism within an organization will be an important influence upon CE. While individualism facilitates the kind of non-conformist thinking that supports radical creativity, collectivism supports the kind of group cohesion and cooperation necessary for the acceptance and support for new ideas. They find support for the argument that at the extremes of the individualism–collectivism continuum, there will be relatively low levels of entrepreneurship while at moderate levels of individualism, organizational entrepreneurship will be highest. [Zahra, Hayton, and Salvato \(2004\)](#) found similar results in a study relating the organizational cultures of family firms to their entrepreneurial performance. [Abraham \(1997\)](#) found that in conjunction with a supportive organizational climate ([Hornsby et al., 1993](#)), horizontal individualism (defined as the existence of an autonomous self equal in status with others) is associated with cooperative team performance. Finally, [Chandler et al. \(2000\)](#) propose that HRM influences creativity and innovation by creating a supportive culture. They found that perceived management support and organizational reward systems promote an innovation supportive culture.

The literature on culture implies that HRM can have a significant indirect influence upon CE in organizations, by creating a supportive context. A supportive environment encourages a balance of individual and collective interests thereby encouraging cooperation and the development of trust. Thus, consistent with prior suggestions, this literature emphasizes the importance of informal behaviors for the development of CE. Furthermore, this literature suggests that these informal behaviors may be effectively encouraged through the creation of a climate in which entrepreneurial contributions are the result of a social exchange between employees and the organization. In the next section, we return to this theme as we consider two key issues in the study of HRM and CE.

## 4. Discussion

### 4.1. *Converging knowledge about HRM and CE*

There is some convergence in the literature concerning key elements of the HRM–CE relationship. A number of key constructs have emerged as being important to the promotion of CE. We depict these constructs and their relationship with knowledge exchange, risk taking and CE in [Fig. 2](#).

This review has focused upon the various HR practices that are believed to influence CE. Underlying this framework are several assumptions regarding the mechanisms by which HR practices influence CE. First, is the assumption that CE is supported by organizational learning, as suggested by several scholars of CE (e.g., [Floyd & Wooldridge, 1999](#); [McGrath, 2001](#); [Zahra, Nielsen et al., 1999](#)). Second, this framework assumes that organizational learning is dependent upon the exchange of knowledge (tacit and explicit) as well as other resources among employees and between employees and external partners and stakeholders (e.g., [Kanter, 1983, 1985](#); [Stevenson & Jarillo, 1990](#); [Zahra & George, 2002](#); [Zahra & Nielsen, 2002](#)). Third is the assumption that the internal and external exchange of knowledge is founded upon the formation of trust and social capital (e.g., [Bolino et al., 2002](#); [Nahapiet & Ghoshal, 1998](#); [Perry-Smith & Shalley, 2003](#)). Discretionary behavior in the form of organizational citizenship, trust,

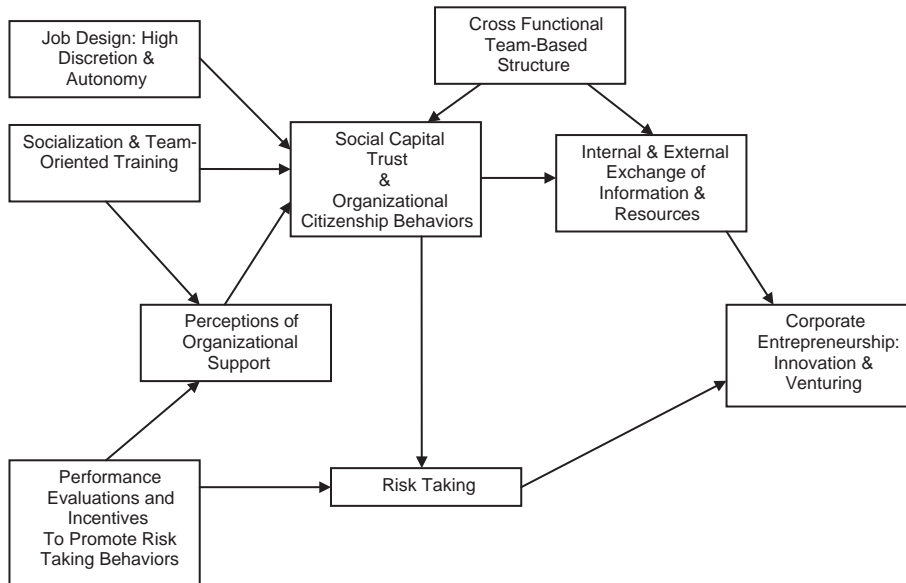


Fig. 2. Conceptual framework for the relationship between human resource management and corporate entrepreneurship.

and social capital are reciprocally related and are therefore include as a single mediating construct to simplify the model (e.g., Bolino et al., 2002; Malhotra & Murnighan, 2002; Perrone, Zahreer, & McEvily, 2003). Social capital, and knowledge exchange perform as important mediators in the association between HRM practices highlighted by this literature review and CE.

Given the knowledge intensity of the CE process (Kanter, 1985), it is unsurprising to find that higher levels of human capital are positively associated with CE (Soutaris, 2002) and that entrepreneurial firms tend to make systematic investments in employee skills, particularly group skills and socialization (Jones et al., 1995). Group skills enhance the quality of interactions, while socialization helps build common ground and shared understanding, particularly among employees from different functional areas (Nonaka, 1994). Therefore, these training and development practices are expected to have a positive influence on the formation of social capital and trust, and the presence of discretionary behaviors.

Second, a consistent theme throughout the literature is the need to promote individual autonomy and discretion. Technological innovation tends to be a bottom-up process (Ibarra, 1993) and most technological knowledge resides in the lower levels of an organizational hierarchy. Furthermore, the uncertainty of the innovation process requires coordination by mutual adjustment (Kanter, 1983), therefore job designs must allow high levels of individual autonomy (e.g., Hill & Hlavacek, 1972; Jones et al., 1995; Laursen, 2002; Laursen & Foss, 2003; Luchsinger & Bagby, 1987). Greater autonomy broadens the scope for discretionary behaviors which has a positive influence on the formation of trust and social capital (e.g., Bolino et al., 2002; Malhotra & Murnighan, 2002; Nahapiet & Ghoshal, 1998; Perrone et al., 2003).

Third, the design of organizational structure should promote high levels of communication and cross-functional integration in order to facilitate tacit knowledge exchange and organizational learning. This is often achieved by organizing with cross-functional teams (Hill & Hlavacek, 1972; Hornsby et al., 1999; Kanter, 1985; Laursen, 2002; Laursen & Foss, 2003). By increasing cross functional interaction, the general level of social capital in an organization is enhanced as well as increasing formal interactions and

resource exchanges more directly. Such an arrangement is supported by the use of incentive pay based upon group or organizational level rewards in addition to individual rewards (e.g., Jones et al., 1995).

Fourth, the high uncertainty associated with innovative activities requires a willingness on the part of organizational members to take on risk. Agency theory suggests that individual agents may be risk averse relative to principals as a result of their inability to diversify personal risk (e.g., Eisenhardt, 1989). There is a lack of consensus as to the degree of risk that organizational entrepreneurs must assume, although it is considered lower than that assumed by entrepreneurs acting independently. However, there is agreement that entrepreneurial organizations require a greater degree of risk acceptance on the part of their employees (e.g., Block & MacMillan, 1993). This is expected to be reflected in their compensation design. Research supports this proposition with respect to research scientists, engineers and CEOs of innovative corporations (e.g., Balkin et al., 2000). Furthermore, there is some evidence that incentive pay systems are associated with CE (e.g., Chandler et al., 2000; Laursen, 2002).

A final aspect of the organizational environment that is important for CE is the presence of a high degree of perceived management support for entrepreneurial activities (e.g., Chandler et al., 2000; Hornsby et al., 1999). These perceptions are linked to the availability of needed resources and the presence of appropriate rewards. Perceived organizational support (e.g., Shore & Wayne, 1993; Wayne, Shore, & Liden, 1997) has been found to be related to the development of a social exchange relationship between an individual and the organization. When an employer makes investments in employees and recognizes employee contributions, it is perceived as supportive and the social exchange relationship between the employee and employer is strengthened. As a result, employees are more willing to engage in extra-role behaviors that serve the interests of the organization (e.g., Maurer, Pierce, & Shore, 2002). Such autonomous, cooperative behaviors form the basis for entrepreneurial action in organizations (Burgelman, 1983).

In addition to these areas of agreement, the literature review highlights some interesting contradictions and challenges that need to be addressed. First, there is a frequent observation that entrepreneurial organizations are interested in performance outcomes rather than the means used to produce these outcomes. This is noted by Jones et al. (1995) in the context of performance appraisals. However, as noted by researchers examining compensation and CE (e.g., Balkin et al., 2000; Block & Ormati, 1987; Sykes, 1992) in the context of innovation and venturing activities outcomes are uncertain, and may take many years to be achieved. As a result, there is some consensus regarding the need to reward upon the basis of inputs and/or the achievement of significant milestones rather than some overall performance metric. This paradox between freedom to pursue a commonly understood goal, and the need to reward for assuming risk needs to be further examined.

Second, and closely related to the first issue is the proposition that broad, undefined jobs help avoid constraining employee creative contributions, encourage cross functional communication (Kanter, 1985) and enhance autonomy and discretion. However, given the need to monitor performance and reward for contribution of innovative solutions, assumption of risk, and contribution to the work group (Jones et al., 1995), some prior definition of expectations is implied. This challenge for HRM is to be able to specify expected behaviors or inputs without unduly constraining individuals to predetermined routines which would inhibit a creative contribution by reducing goal autonomy (McGrath, 2001).

Third, there is disagreement over the relative value of intrinsic and extrinsic rewards from the perspective of encouraging entrepreneurial behaviors. Some have argued that the challenge, autonomy, responsibility and status associated with engaging in a successful venture should be sufficient reward in itself and that such intrinsic factors will outweigh the need for any extrinsic rewards (Sykes, 1992). On

the other hand, there is evidence that extrinsic rewards for some positions are indeed associated with greater innovativeness (e.g., Balkin et al., 2000). The limited research to date has found few patterns in compensation designs for new ventures (e.g., Block & Ornati, 1987), yet agency theory suggests that we should find some clear relationships among compensation and risk acceptance and therefore CE.

A final challenge that may subsume each of the forgoing issues is the potential for conflict between the economic and social exchange aspects of the employment relationship. An economic exchange framework implies the need for risk sharing between the principal and agent, driven primarily by variable compensation based upon either inputs or outcomes, which requires close monitoring of behaviors or results in order to provide those incentives or rewards. However, a social exchange framework suggests that such a tightly defined contractual relationship will have a negative influence on trust and the formation of social capital and a positive social exchange relationship between employer and employees as well as among employees (e.g., Malhotra & Murnighan, 2002). Therefore, even the most ‘efficient contract’ from an economic exchange perspective, will create its own frictions with respect to knowledge exchange and organizational learning (e.g., Sundaramurthy & Lewis, 2003). A key challenge for researchers trying to determine how HRM can influence CE is to understand this paradox.

The work of Baron and colleagues on employment models adopted by high technology start-ups is revealing in this regard (Baron, Hannan, & Burton, 1999; 2001). These authors find evidence for several distinct ‘organizing logics’ or sets of employment practices that are internally consistent in high tech firms. The three primary dimensions of these organizing logics are the basis for attachment of employees (interesting work, affective attachment to the organization, or money), the basis for selection of employees (technical skills, future potential, or value fit) and the basis for coordination and control (peers and cultural control, professional control, formal control, or direct control). From these three dimensions, five dominant logics were identified as prevailing in northern California’s ‘Silicon Valley’. These were labeled ‘engineering,’ ‘star,’ ‘commitment,’ ‘bureaucracy,’ and ‘autocracy’ by the authors. What is interesting, however, is that these five are quite clearly differentiated on the basis of their emphasis on economic exchange principles (bureaucracy and autocracy) versus social exchange principles (engineering, star and commitment). An important question that needs to be addressed is whether these models have equifinality with respect to the outcome of CE, or whether a particular organizing logic is advantageous for firms committed to sustained regeneration through innovation and venturing activities.

#### *4.2. Emergent themes: risk and discretionary behaviors*

There are two issues that any examination of the HRM–CE relationship must address: the nurturing of informal entrepreneurial behaviors; and the acceptance of risk by organizational members. HRM practices influence CE by creating conditions for the development of informal cooperative relationships. Organizational learning theory would appear to be the appropriate model for understanding how HRM can support CE. Organizational learning occurs when individual participants are willing and able to form informal networks where they voluntarily exchange information, tacit knowledge and create shared perspectives. The process involves discretionary behaviors that go beyond formal job descriptions. As a result of engaging in helping behaviors that support the organization and other organizational members, social exchange relationships are reinforced, trust is enhanced, and social capital is developed. Therefore, this perspective suggests that a social exchange model could be effectively employed to explain the emergence of entrepreneurial networks within organizations. However, this is only a partial

explanation. Future research will need to consider how the social exchange and economic exchange models complement or contradict one another in supporting both organizational learning and individual risk taking in the pursuit of CE.

The issue of risk acceptance has been present in the literature on all aspects of the HRM–CE relationship. CE is defined in terms of the acceptance of risk (Miller, 1983) and yet to date, it has been dealt with in somewhat superficial terms. However, this review has identified a number of important contingencies relevant to the issue of risk acceptance by employees in the pursuit of CE: organizational life cycle stage; environmental conditions; and individual characteristics. Each of these needs to be accounted for as we seek to explain how HRM will influence CE.

In general, the risk of organizational failure is inversely related to the age of an organization. Incentive structures are expected to be based upon different time frames and performance metrics as firms mature. As firms mature, there is a greater need to structure incentives to promote innovation, and at the same time, there should be more resources available for incentive pay based upon short-term inputs as opposed to long-run financial performance or other outcome. The influence of life-cycle stage upon perceptions of risk is also likely to be related to firm strategy and environmental conditions in a complex way.

With respect to organizational environments, in high technology industries the uncertainty surrounding the success of innovations is greater than in low technology industries. This is due to higher rates of change, faster pace of change and less certainty over technological trajectories. Different levels of environmental uncertainty are expected to influence the need for, and structure of, incentives offered for risk acceptance.

Finally, individuals are expected to differ in their tolerance for risk or ambiguity, and over the duration of a career life-time they can be expected to become decreasingly tolerant of personal risk that might result in unemployment or financial loss. Similarly, as individuals progress in their careers the range of alternatives becomes smaller and more restricted, effectively reducing the ability to diversify career risk. Therefore, incentives to encourage risk acceptance are likely to be different at different career stages and possibly for different populations of individuals (e.g., skilled versus semi-skilled). Examinations of risk acceptance need to explicitly consider all of these moderating factors in seeking an explanation for firm HR practices.

One theoretical perspective that is applicable to the issue of risk is agency theory (e.g., Eisenhardt, 1989). Agency theory seeks to explain how contracts are constructed that will align the interests of risk seeking principals and risk averse agents. This perspective has been successfully employed in studies of CEO compensation and corporate governance that seek to explain risk acceptance (e.g., Zahra et al., 2004). This framework is particularly applicable to the influence of compensation and performance management where the main line of enquiry is the alignment of interests and monitoring of behavior. However, the agency perspective may be limited in its power for explaining processes underlying organizational learning as these are highly dependent on social exchange. Therefore it can only represent one part of the picture of the HRM–CE relationship.

An alternative theoretical perspective that is not inconsistent with an agency view, but also allows for a social exchange relationship between employer and employee is the stewardship theory of management (e.g., Davis, Schoorman, & Donaldson, 1997). Consistent with agency theory, the stewardship perspective is a theory of organizational governance which focuses on the problems of managing the discretionary contribution of employees (agents). However, while agency theory assumes that employees are opportunistic individualists motivated by extrinsic rewards, the stewardship perspective assumes that employees are collectivistic, cooperative and motivated by intrinsic rewards



(e.g., Sundaramurthy & Lewis, 2003). Most importantly, while an agency view assumes goal conflict and a risk differential between principal and agent, the stewardship perspective assumes goal alignment and firm identification. Thus, essentially the stewardship perspective assumes that no ‘agency problem’ exists. Under a stewardship model, the role of compensation shifts from an economic exchange for risk acceptance to a mechanism for signaling firm values and promoting identification with firm goals. Stewardship theory therefore offers an opportunity for bridging the gap between the economic and social exchange models in this context.

## 5. Conclusion

As organizational environments become increasingly complex and dynamic, CE is expected to become more and more important for achieving and sustaining competitive advantage. The importance of HRM in encouraging CE has long been argued. The strength of assertions has not been reflected by empirical or conceptual research however. This review has highlighted several areas in which a consensus is emerging regarding which aspects of HRM are influential upon CE.

### 5.1. *Implications for theory and research*

We have suggested that in combination, theories of economic and social exchange can be expected to contribute to an integrated perspective on the HRM–CE relationship. To date, no single theoretical explanation has addressed both the formal and informal aspects of CE. Yet, as this review suggests, HRM practices simultaneously influence both of these aspects.

On the informal side, HRM practices need to encourage internal and external knowledge acquisition and integration. It is often the serendipitous linking of previously independent knowledge assets that leads to the identification of new combinations of assets which contribute to the “gales of creative destruction”. Yet it is not possible to formally prescribe the relationships that lead to this knowledge sharing. This review suggests that HRM will influence these informal, spontaneous, autonomous behaviors by contributing to the formation of cooperative, trusting relationships in which knowledge and other resources are shared in the interests of the collective, rather than hoarded in the interests of the individual. On the formal side, this review suggests that the only certain thing about behavior leading to CE is the need on the part of the individual to accept risk and uncertainty.

This review has also indicated that although the formal and informal aspects of CE are distinct, they are not entirely independent. We have suggested that future research needs to consider three challenges or contradictions in the literature. First, there is the question of how to monitor performance in an entrepreneurial setting. The difficulty arises from the inherent uncertainty and dynamism of the innovation process and the need to encourage risk taking and acceptance of failure. There appear to be some contradictions over how this can be achieved. The argument for monitoring outcomes is the uncertainty over which behaviors can achieve the desired ends (e.g., Kanter, 1983). In contrast, the argument for monitoring inputs is the uncertainty over outcomes, the difficulty of measuring them, and the relatively low probability of success. Recent literature (Balkin et al., 2000) finds support for the need to focus upon innovative inputs rather than attempting to reward on the basis of outcomes. However, further study of performance management in entrepreneurial settings should consider the trade-offs between encouraging risk acceptance and monitoring behaviors.

Second, research needs to address how entrepreneurial firms design jobs loosely while maintaining the ability to monitor and reward performance. Given that we have argued that performance related pay based upon innovative contributions will promote entrepreneurship, how can such an incentive system work while job definitions are loose and emphasize autonomy?

Third, a key question that should be subject to further empirical scrutiny: what is the relationship between intrinsic and extrinsic rewards and entrepreneurial contributions? It has been observed that extrinsic rewards can inhibit creativity by limiting the benefit of its intrinsic rewards. Yet it appears that some form of reward must be offered to encourage the acceptance of greater than normal risk by corporate entrepreneurs. Much research is needed to better understand the relationship among job rewards, broadly defined, and entrepreneurial contributions.

### 5.2. *Practical implications*

This review highlights the complexities of managing HR with the aim of promoting CE. HR practitioners must focus upon the dual goals of encouraging risk acceptance and collaboration. One important implication that we draw from the extant literature is that HRM practices should be as focused upon building relationships among employees as they are upon matching individual employees to the job situation (Hayton, 2004). Although the traditional model of HRM encourages the matching of employee contributions to organizational needs and inducements, a perspective that is more relevant to CE would encourage the building of relationships among employees, between employees and the organization, and between employees and key organizational stakeholders. These intra- and inter-organizational relationships represent essential channels for the flow of knowledge and information, the building blocks of innovation and entrepreneurial opportunities.

Such a relational view is also dependent upon the ability to build a positive social exchange climate. This depends not on matching employee contributions to rewards, but rather on signaling the values of the organization through recognition. The distinction appears to be a subtle one. On the one hand, an organization promises rewards when specific contractual obligations are met. The alternative is signaling that contributions to the well-being of the collective are valued. The former reflects an economic exchange in which it is assumed that desired behaviors can be specified *ex ante* and performance measured *post hoc*. The latter makes no such assumption, and also recognizes that by holding individuals to strict contractual obligations we reduce their ability to engage in discretionary behavior. From a practical perspective, this review suggests that HR practices and policies may be able to better promote CE by being ‘loose’ rather than ‘tight’.

Clearly, CE is a highly complex process involving multiple influences inside and outside of organizations. Equally clear is the important role that HRM practice can play in promoting CE. To date the literature has been somewhat limited by the lack of a conceptual framework for linking HR practices to CE. By identifying the most important practices and connecting them in this paper, we hope to stimulate further debate and empirical research.

## References

- Abraham, R. (1997). The relationship of vertical and horizontal individualism and collectivism to intrapreneurship and organizational commitment. *Leadership and Organization Development Journal*, 18(4), 179.

- Adler, P. S., & Kwon, S. W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, 27(1), 17–40.
- Antoncic, B., & Hisrich, R. D. (2001). Intrapreneurship: Construct refinement and cross-cultural validation. *Journal of Business Venturing*, 16, 495–527.
- Balkin, D. B., & Bannister, B. D. (1993). Explaining pay forms for strategic employee groups in organizations: A resource dependence perspective. *Journal of Occupational and Organizational Psychology*, 66(2), 139–151.
- Balkin, D. B., & Gomez-Mejia, L. R. (1984). Determinants of R&D compensation strategies in the high tech industry. *Personnel Psychology*, 37(4), 635–640.
- Balkin, D. B., & Gomez-Mejia, L. R. (1987). Toward a contingency theory of compensation strategy. *Strategic Management Journal*, 8(2), 169–182.
- Balkin, D. B., Markman, G. D., & Gomez-Mejia, L. R. (2000). Is CEO pay in high technology firms related to innovation? *Academy of Management Journal*, 43(6), 1118–1129.
- Barney, J. B. (1986). Organizational culture: Can it be a source of sustained competitive advantage? *Academy of Management Review*, 11(3), 656–665.
- Baron, J. N., Hannan, M. T., & Burton, M. D. (1999). Building the iron cage: Determinants of managerial intensity in the early years of organizations. *American Sociological Review*, 64, 527–547.
- Baron, J. N., Hannan, M. T., & Burton, M. D. (2001). Labor pains: Change in organizational models and employee turnover in young, high-tech firms. *American Journal of Sociology*, 106(4), 960–1012.
- Becker, B. E., Huselid, M. A., & Ulrich, D. (2001). *The HR scorecard: Linking people strategy and performance*. Boston, MA: Harvard Business School Press.
- Block, Z., & Ornati, O. A. (1987). Compensating corporate venture managers. *Journal of Business Venturing*, 2, 41–51.
- Block, Z., & MacMillan, I. (1993). *Corporate venturing*. Cambridge, MA: Harvard Business School Press.
- Bolino, M. C., Turnley, W. H., & Bloodgood, J. M. (2002). Citizenship behavior and the creation of social capital in organizations. *Academy of Management Review*, 27(4), 505–522.
- Burgelman, R. A. (1983). A process model of internal corporate venturing in the diversified major firm. *Administrative Science Quarterly*, 28(2), 223–245.
- Busenitz, L. W., & Barney, J. B. (1997). Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision making. *Journal of Business Venturing*, 12(1), 9–30.
- Chandler, G. N., Keller, C., & Lyon, D. W. (2000). Unraveling the determinants and consequences of an innovation supportive culture. *Entrepreneurship Theory and Practice*, 25(1), 59–76.
- Covin, J. G., & Miles, M. P. (1999). Corporate entrepreneurship and the pursuit of competitive advantage. *Entrepreneurship Theory and Practice*, 23(3), 47–63.
- Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, 22(1), 20–47.
- Deal, T. E., & Kennedy, A. A. (1983). Culture: A new look through old lenses. *The Journal of Applied Behavioral Science*, 19(4), 498–505.
- Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Test of universalistic, contingency and configurational performance patterns. *Academy of Management Journal*, 39, 802–825.
- DeNisi, A. S., Hitt, M. A., & Jackson, S. E. (2003). The knowledge-based approach to sustainable competitive advantage. In S. E. Jackson, M. A. Hitt, & A. S. DeNisi (Eds.), *Managing knowledge for sustained competitive advantage: Designing strategies for effective human resource management*. San Francisco: Jossey Bass.
- Eisenhardt, K. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14(1), 57–74.
- Floyd, S. W., & Wooldridge, B. (1999). Knowledge creation and social networks in corporate entrepreneurship: The renewal of organizational capability. *Entrepreneurship Theory and Practice*, 23(3), 123–144.
- Guth, W. D., & Ginsberg, A. (1990). Guest editors' introduction: Corporate entrepreneurship. *Strategic Management Journal*, 11, 5–15.
- Hayton, J. C. (2004). Strategic human capital management in SMEs: An empirical study of entrepreneurial performance. *Human Resource Management Journal*, 42(4), 375–391.
- Hayton, J. C., George, G., & Zahra, S. A. (2002). National culture and entrepreneurship: A review of behavioral research. *Entrepreneurship Theory and Practice*, 26(4), 33–52.
- Heneman, R. L., & Tansky, J. W. (2002). Human resource management models for entrepreneurial opportunity: Existing knowledge and new directions. In Katz, & Welbourne (Eds.), *Managing people in entrepreneurial organizations: Learning from the merger of entrepreneurship and human resource management*. JAI Press.

- Hill, R. M., & Hlavacek, J. D. (1972). The venture team: A new concept in marketing organization. *Journal of Marketing*, 36(July), 44–50.
- Hornsby, J. S., Kuratko, D. F., & Montagno, R. V. (1999). Perception of internal factors for corporate entrepreneurship: A comparison of Canadian and U.S. managers. *Entrepreneurship Theory and Practice*, 24(2), 9–24.
- Hornsby, J. S., Naffziger, D. W., Kuratko, D. F., & Montagno, R. V. (1993). An interactive model of the corporate entrepreneurship process. *Entrepreneurship Theory and Practice*, 17(2), 29–37.
- Huselid, M. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38, 635–672.
- Ibarra, H. (1993). Network centrality, power, and innovation involvement: Determinants of technical and administrative roles. *Academy of Management Journal*, 36(3), 471–500.
- Jackson, S., Schuler, R. S., & Rivero, J. C. (1989). Organizational characteristics as predictors of personnel practices. *Personnel Psychology*, 46, 569–592.
- Jones, F. F., Morris, M. H., & Rockmore, W. (1995, May). HR practices that promote entrepreneurship. *HRMagazine*, 86–91.
- Kanter, R. M. (1983). *The change masters: Innovation and entrepreneurship in the American corporation*. New York: Simon & Schuster.
- Kanter, R. M. (1985). Supporting innovation and venture development in established companies. *Journal of Business Venturing*, 1(1), 47–61.
- Klein, K. J., & Koslowski, S. W. J. (2000). *Multilevel theory, research, and methods in organizations*. San Francisco: Jossey Bass.
- Kuratko, D. F., Montagno, R. V., & Hornsby, J. S. (1990). Developing an entrepreneurial assessment instrument for an effective corporate entrepreneurial environment. *Strategic Management Journal*, 11, 49–58.
- Laursen, K. (2002). The importance of sectoral differences in the application of complementary HRM practices for innovation performance. *International Journal of the Economics of Business*, 9(1), 139–156.
- Laursen, K., & Foss, N. J. (2003). New HRM practices, complementarities, and the impact on innovative performance. *Cambridge Journal of Economics*, 27(2), 243–263.
- Leana, C. R., & Van Buren, H. J. (1999). Organizational social capital and employment practices. *Academy of Management Journal*, 24(3), 538–555.
- Lööf, H., & Heshmati, A. (2002). Knowledge capital and performance heterogeneity: A firm level innovation study. *International Journal of Production Economics*, 76, 61–85.
- Luchsinger, V., & Bagby, D. R. (1987). Entrepreneurship and intrapreneurship: Behaviors, comparisons and contrasts. *SAM Advanced Management Journal*, 10–13.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1), 135–173.
- MacMillan, I. C. (1987). New business development: A challenge for transformational leadership. *Human Resource Management*, 26(4), 439–454.
- Malhotra, D., & Murnighan, J. K. (2002). The effects of contracts on interpersonal trust. *Administrative Science Quarterly*, 47, 534–559.
- Maurer, T. J., Pierce, H. R., & Shore, L. M. (2002). Perceived beneficiary of employee development activity: A three-dimensional social exchange model. *Academy of Management Review*, 27(3), 432–446.
- McGrath, R. (2001). Exploratory learning, innovative capacity, and managerial oversight. *Academy of Management Journal*, 44(1), 118–131.
- Meyer, G. D., & Heppard, K. A. (2000). *Entrepreneurship as strategy: Competing on the entrepreneurial edge*. Thousand Oaks, CA: Sage Publications.
- Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29(7), 770–792.
- Morris, M. H., Davis, D. L., & Allen, J. W. (1994). Fostering corporate entrepreneurship: Cross-cultural comparisons of the importance of individualism versus collectivism. *Journal of International Business Studies*, 25(1), 65–89.
- Morris, M. H., & Jones, F. F. (1993). Human resource management practices and corporate entrepreneurship: An empirical assessment from the USA. *International Journal of Human Resource Management*, 4(4), 873–896.
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and organizational advantage. *Academy of Management Review*, 23, 242–266.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14–37.

- Perry-Smith, J. E., & Shalley, C. E. (2003). The social side of creativity: A static and dynamic social network perspective. *Academy of Management Review*, 28(1), 89–106.
- Perrone, V., Zaheer, A., & McEvily, B. (2003). Free to be trusted? Organizational constraints on trust in boundary spanners. *Organization Science*, 14(4), 422–439.
- Quinn, J. B. (1979). Technological innovation, entrepreneurship and strategy. *Sloan Management Review*, 19–30.
- Schein, E. (1992). *Organizational culture and leadership* (2nd edition). San Francisco: Jossey-Bass.
- Schuler, R. S., & Jackson, S. E. (1987). Linking competitive strategies with human resource practices. *Academy of Management Executive*, 1, 207–220.
- Schumpeter, J. A. (1934). *Theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*. New York: Oxford University Press.
- Shore, L. M., & Wayne, S. J. (1993). Commitment and employee behavior: Comparison of affective commitment and continuance commitment with perceived organizational support. *Journal of Applied Psychology*, 78(5), 774–780.
- Souder, W. E. (1981, May). Encouraging entrepreneurship in large corporations. *Research Management*, 18–22.
- Soutaris, V. (2002). Firm-specific competencies determining technological innovation: A survey in Greece. *R & D Management*, 32(1), 61–77.
- Steele, B., & Baker, R. (1986). Creating entrepreneurial pay systems for internal venture units. *Topics in Total Compensation*, 1(1), 37–55.
- Stevenson, H. H., & Jarillo, J. C. (1990). A paradigm of entrepreneurship: Entrepreneurial management. *Strategic Management Journal*, 11, 17–27.
- Sundaramurthy, C., & Lewis, M. (2003). Control and collaboration: Paradoxes of governance. *Academy of Management Review*, 28(3), 397–415.
- Sykes, H. B. (1992). Incentive compensation for corporate venture personnel. *Journal of Business Venturing*, 7, 253–265.
- Twomey, D. F., & Harris, D. L. (2000). From strategy to corporate outcomes: Aligning human resource management systems with entrepreneurial intent. *International Journal of Competitiveness*, 10(3 and 4), 43–55.
- Von Hippel, E. (1977). Successful and failing internal corporate ventures: An empirical analysis. *Industrial Marketing Management*, 6, 163–174.
- Wayne, S. J., Shore, L. M., & Liden, R. C. (1997). Perceived organizational support and leader–member exchange: A social exchange perspective. *Academy of Management Journal*, 40(1), 82–111.
- Zahra, S. A. (1996). Governance, ownership, and corporate entrepreneurship: The moderating impact of industry technological opportunities. *Academy of Management Journal*, 39(6), 1713–1735.
- Zahra, S. A., & Covin, J. G. (1995). Contextual influences on the corporate entrepreneurship–performance relationship: A longitudinal analysis. *Journal of Business Venturing*, 10(1), 43–58.
- Zahra, S. A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185–203.
- Zahra, S., & Nielsen, A. P. (2002). Sources of capabilities, integration and technology commercialization. *Strategic Management Journal*, 23, 377–398.
- Zahra, S. A., Jennings, D. F., & Kuratko, D. F. (1999). The antecedents and consequences of firm level entrepreneurship: The state of the field. *Entrepreneurship Theory and Practice*, 24(2), 45–63.
- Zahra, S. A., Nielsen, A. P., & Bogner, W. C. (1999). Corporate entrepreneurship, knowledge, and competence development. *Entrepreneurship Theory and Practice*, 23(3), 169–189.
- Zahra, S. A., Hayton, J. C., & Salvato, C. (2004). Entrepreneurship in family vs. non-family firms: A resource-based analysis of the effect of organizational culture. *Entrepreneurship Theory and Practice*, 28(4), 363–381.