



Human resource management in entrepreneurial firms: a literature review

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Abstract

Purpose – This paper seeks to review the literature on human resource management (HRM) in entrepreneurial firms. Given the importance of human resource management for entrepreneurship, the purpose of this paper is to determine how far this line of research has progressed and what areas are still pending study.

Design/methodology/approach – The paper has a three-part structure. First, the paper describes the published works. Second, it examines the topics dealt with in the literature. Third, the review identifies the limitations of the literature and outlines future lines of research for this field.

Findings – Most papers that deal with HRM and entrepreneurship together are empirical and have been published since 2000. Comprehensive and rigorous theoretical models that relate both areas do not exist.

Originality/value – The paper helps scholars orient their research in human resource management in entrepreneurial firms by providing them with a better understanding of the direction in which the field is going and what gaps remain.

Keywords Human resource management, Entrepreneurialism, Business formation

Paper type Literature review

1. Introduction

Despite the extensive literature on human resource management (HRM) and entrepreneurship, the two areas have seldom been examined together. In fact, few studies on HRM in entrepreneurial firms exist. HRM, however, is crucial to understanding the organisation of entrepreneurial firms. While innovation may be the product of one brilliant mind, the process of design, production and distribution

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depends on effectively managing the work, effort and commitment of people (Keating and Olivares, 2007).

In the 1980s, seminal works such as Galbraith (1985) pointed out the importance of studying the role of human resources in the development of entrepreneurial firms. Research on the role of HRM in the entrepreneurial process, however, is only now beginning to emerge. Current research literature on HRM in entrepreneurial firms, though, “appears to be rich in prescriptions, limited in sound descriptive surveys, and sparse in analytical research” (Heneman *et al.*, 2000, p. 20). Although the study of entrepreneurship requires a holistic approach (Keating and Olivares, 2007), previous comprehensive reviews of research on HRM and entrepreneurship are almost non-existent. One notable exception to this is Hayton’s (2005) review of empirical studies on human resources as drivers of corporate entrepreneurship; this study, however, does not include start-ups.

Given the importance of HRM for entrepreneurship, this paper analyses the literature relating these two areas. The overriding purpose of the paper is to determine how far this line of research has progressed and what areas are still pending study. More specifically, the work has three objectives. First, to describe the literature in general. Second, to analyse the topics studied in the papers. Third, to identify the limitations of these papers and look for future lines of research in this field. This paper, then, serves not only to assess the structure and evolution of the relationship between these two research areas, but also to present ideas for new work. The paper intends to help scholars orient future research by enabling them to understand better the direction in which the field is going and what gaps remain.

With these objectives in mind, the paper is divided into four sections. Section 2 includes the theoretical background on HRM and entrepreneurship, along with the relationship between the two. Section 3 describes the papers published to date on HRM in entrepreneurial firms. Section 4 analyses the topics covered in the papers, and the final section contains a discussion of the findings, with special reference to the limitations of the literature and to future lines of research.

2. Theoretical background

2.1 Human resource management (HRM)

Human capital is the knowledge, skills, and abilities of employees (Hayton, 2005), while human resource management (HRM) includes all activities related to the management of employment relationships in the firm (Lin *et al.*, 2008). Strategic HRM provides firms with the internal capacity to adapt and adjust to their competitive environments by aligning HRM policies and practices (De Saá Pérez and García Falcón, 2004; Kidwell and Fish, 2007). Examples of these policies and practices are recruitment and selection, training and development, and reward systems with business strategies (Leingnick-Hall and Leingnick-Hall, 1988; Delery and Doty, 1996; Svelik and Starrov-Costea, 2007; Petrescu and Simmons, 2008; Verano-Tacoronte and Melián-González, 2008). The firm’s ability to develop HRM practices aligned with business strategy is a source of sustainable competitive advantage (Dyer and Reeves, 1995; Huselid *et al.*, 1997; Barrett and Mayson, 2007; Andonova and Zuleta, 2007).

Strategic HRM has been studied from three perspectives (Delery and Doty, 1996; Twomey and Harris, 2000): universalistic, contingency and configurational. The universalistic (or “best practice”) studies look for the policies and practices that are

more effective and result in gains for all firms (Arthur, 1994; Huselid, 1995). Both the contingency and configurational perspectives are based on the idea that certain HRM practices will support a corporate strategy by shaping behaviours and outcomes. The contingency perspective links choices of practices within HRM systems to firm-level strategic positions (Gomez-Mejia and Balkin, 1992). Configurational theorists, meanwhile, take a more holistic approach, looking for ideal types and explicitly adopting a system assumption of equifinality (Wright and McMahan, 1992; Becker and Gerhart, 1996).

2.2 Entrepreneurship

Entrepreneurship is a difficult concept to pin down because it draws on various academic disciplines with differing perspectives. Entrepreneurship can be defined as “the process of creating value by bringing together a unique package of resources to exploit an opportunity” (Stevenson *et al.*, 1989). The process itself consists of the set of activities necessary to identify an opportunity, develop a business concept, assess and acquire the necessary resources, implement the concept and then manage and harvest the venture (Morris and Jones, 1993). The person that performs this set of activities is called the entrepreneur.

The concept of entrepreneurship first appears in the literature on entrepreneurs as individuals (Kirzner, 1973). For this reason the older and more traditional studies focus on the characteristics and behaviour of the entrepreneur, while also analysing the creation of new organisations – start-ups (e.g. Gartner, 1985; Aldrich, 1990). Entrepreneurial initiative, however, is more than just the opening of new firms, it is a firm-level phenomenon (Stevenson and Jarillo, 1990; Lim *et al.*, 2008). Thus, studies on corporate entrepreneurship also exist; these studies analyse entrepreneurial firms, which are identified as firms that display entrepreneurial behaviour (e.g. Zahra *et al.*, 2000).

Entrepreneurship is defined via three related components: innovativeness, risk taking and proactiveness (Covin and Slevin, 1989; Zahra, 1993). Innovativeness is the seeking of creative, unusual or novel solutions to problems and needs. These solutions may be novel technologies and processes, as well as new products and services. Risk taking is the willingness to commit significant resources to opportunities that have a reasonable chance of costly failure. These risks are typically manageable and calculated. Proactiveness is concerned with implementation, with doing whatever is necessary to bring an entrepreneurial concept to fruition. These three concepts result in the creation of new firms (start-ups) or corporate entrepreneurship (in established firms). Corporate entrepreneurship, for its part, includes three dimensions: innovation, venturing and strategic renewal activities (Guth and Ginsberg, 1990).

2.3 Human resource management and entrepreneurship

An entrepreneurial orientation is critical for organisational survival and growth in today’s business environment (Morris and Jones, 1993). Moreover, the current trend towards knowledge-intensive industries means that competitiveness increasingly depends on the management of the relational bases of members of organisations. Culture, attitudes, values and commitment to employees, then, are more important to the success of firms – big and small – than ever before (Snell *et al.*, 2002). HRM theory and practice can contribute to understanding issues faced by the entrepreneurial firm

(Altinay *et al.*, 2008). An example of this is human resource acquisition and deployment in start-ups and highly innovative ventures. Other examples are the contribution of HRM practices to the survival of new ventures, and the impact of resource acquisition, allocation and development on the speed and direction of growth in rapidly expanding firms (Heneman *et al.*, 2000; Katz *et al.*, 2000; Barrett and Mayson, 2007). Indeed, HRM would seem to be one of the more vital managerial decision areas affecting corporate entrepreneurship (Kuratko *et al.*, 2005).

Burgelman (1983) and Schuler (1986) – among others – suggest that a large number of HRM-related policies may influence corporate entrepreneurship. Schuler (1986) argues that consistent HRM practices can improve entrepreneurship. Schuler and Jackson (1987) detail the relationships between each of the HRM policies – planning, staffing, appraising, compensating, training and development, and labour-management relations – and entrepreneurship. Differences in human resource practices are likely to be associated with changes in the level of entrepreneurship observed across organisations, as is consistent with contingency theories of organisations (e.g. Minzberg, 1984). Employee characteristics are associated with successful entrepreneurial efforts: creative and innovative behaviour, risk taking, long-term orientation, focus on results, flexibility to change, co-operation, independent behaviour, tolerance of ambiguity and a preference to assume responsibility (Schuler, 1986).

Both entrepreneurship and HRM, however, have problems delimiting their fields of research. This is particularly true of entrepreneurship because of the great ambiguity that exists in its definition and dimensions. Historically, this is why entrepreneurship researchers have studied founding processes, entrepreneurs as individuals, and high-growth firms. For their part, HRM scholars have studied the management of employees, analysing both general and specific HRM issues in large firms. Little serious academic work, though, has been conducted on HRM practices in smaller firms. Human resources, however, are critical for new organisations in ways often unappreciated by researchers who study only established organisations (Katz *et al.*, 2000). In fact, entrepreneurship researchers have usually steered clear of HRM issues as they are seen by many to be a large company phenomenon (Heneman *et al.*, 2000). Managers define HRM as bureaucracy, policies, procedures, and paperwork. Moreover, human resource researchers have traditionally obtained much of their data from HRM departments. As small and medium-sized enterprises (SMEs), in particular start-ups, do not have HRM departments, this presents a dilemma for researchers trained in using traditional HRM paradigms. Despite this, though, several studies on HRM in start-ups have appeared in recent years (e.g. Quader, 2007).

In conclusion, then, a gap exists in both the entrepreneurship and human resources literature, and this gap should be addressed by studying the role of HRM in entrepreneurial firms (Keating and Olivares, 2007). Filling this gap is important because HRM plays a key role in entrepreneurial firms as the shaker and mover in firm development and growth, and because the literature has simply not researched this area in great enough depth. To kick-start this combined area of research, then, this paper reviews the current literature on HRM in entrepreneurial firms.

3. Methodology

The articles to be analysed were identified using the electronic databases ABI-Inform and Business Source Complete. These are the databases researchers in areas such as

economics, business, management and finance most commonly use. All the years available in these databases were included in the study. The search terms used were “entrepreneurship”, “start-up” and “entrepreneurial firm”; they were crossed with the search term “human resource management”. A total of 223 articles were identified in the search; 154 of these came from the search for “human resource management” and “entrepreneurship”; 50 resulted from the search for “human resource management” and “start-up”; and 19 came from the search for “human resource management” and “entrepreneurial firm”.

Screening the articles reduced the sample to 62 papers – 42 from the Abi-Inform database, and 20 from the Business Source Complete database. The papers were screened in the following way. Articles that appeared more than once were restricted to one entry, and those that did not deal with HRM and entrepreneurship together were eliminated. This is important because some works that mention both HRM and entrepreneurship (or similar terms) in the title or abstract do not in fact research either area (e.g., Bell *et al.*, 2003), or only examine one of them (e.g. McKendall and Margulis (1995) on HRM, and Sathe (1988) on entrepreneurship). More common still is the practice of automatically classifying research on small and medium-sized firms (SMEs) as referring to entrepreneurial firms. SMEs, however, are not by definition entrepreneurial (e.g. Klaas, 2003; Carraher and Carraher, 2006; Wagar and Rondeau, 2006). In addition, papers often use the literature on entrepreneurship to underpin theoretical analyses and hypotheses about entrepreneurial SMEs, but then base their empirical studies on samples of SMEs that may or may not be entrepreneurial.

Beyond this, some papers stress the role of human resources as a key variable for entrepreneurship, but do not then examine it in depth (e.g. Galbraith, 1985; Masakowski, 1998; Godkin *et al.*, 2000; Trulsson, 2002; Dayasindhu, 2003). And this despite Galbraith (1985) more than 20 years ago pointing out the value of linking both areas, and the general agreement that this combined area has not been much studied and deserves greater attention.

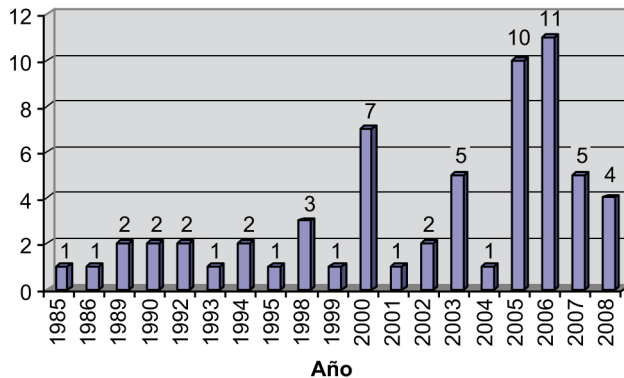
4. Results

This section contains the results of the descriptive and topic analyses of the literature in the sample.

4.1 Descriptive analysis

As Figure 1 shows, most papers on the combined area of HRM and entrepreneurship have been published since 2000, with 2000, 2005 and 2006 being peak years. Comparing the period from 1992 to 1999 with that from 2000 to 2008 reveals how much this dual area of research has grown in recent years: only ten articles were published in the first period, against 46 in the second.

Table I presents the journals in which the studies on HRM and entrepreneurship were published. The journals are divided into three categories: human resources (HR), entrepreneurship and general management (or related topics). The distribution of the articles among the three categories is fairly even, with 34 percent of the articles appearing in HR journals, 35 percent in entrepreneurship journals and 31 percent in other journals. Slightly more than 50 percent of the papers were published in journals included in the Social Science Citation Index (2007). This distribution of articles among the different journals shows the interest of both specialised and general publications in



Source: Authors' research

Figure 1.
Distribution of articles
over time

this area. The most prolific journals in the sample were *Entrepreneurship: Theory and Practice*, which published more than 11 percent of the articles, followed by *Human Resource Management* and the *International Journal of Human Resource Management*, both with 8 percent, and then the *International Journal of Manpower* with more than 6 percent.

The 62 papers selected were sorted by topic. The articles on entrepreneurship were broken down into three topic-groups (start-ups, corporate entrepreneurship or both together). Most of the articles on entrepreneurship – 58 percent – deal with corporate entrepreneurship, with the remaining 34 percent on start-ups, and only 8 percent on the combined viewpoint. Of the articles on HRM, 69 percent analyse human resources in general, while 31 percent focus on a specific aspect of the field (see Table II for references).

Most of the works selected – 77 percent (48 papers) – are empirical in nature; only 14 papers are theoretical (see Table II for references). The empirical works were analysed for the following information: geographical area, industry, methodology and information source, and analytical techniques.

Table III presents the information on geographical areas. The articles are divided into two groups: those that examine only one geographical area and those that analyse or compare various geographical areas (see Table II for references). Most of the studies – 68 percent – look at only one geographical area, with the bulk of the data coming from two countries: the USA with 24 percent (e.g. Caputo and Dolinsky, 1998), and China with 8 percent (e.g. Chen *et al.*, 2005).

Of the industries studied, 50 percent of the papers analyse firms in different industries (including both high-tech and medium- to low-tech sectors) and 35 percent focus solely on high-tech firms (see Table II for references).

The empirical works analysed tend to use several sources of information; approximately 35 percent use two sources, while 20 percent use three or more. Primary sources of information are the most common methodology in the empirical works, with 24 of these employing interviews and 18 questionnaires (see Table II for references). Of those that use secondary sources, nine opt for company reports, eight go for surveys and only 1 a database. Most of the papers – 83 percent – take the firm as the unit of analysis, with 13 percent taking the individual and only one using the group and 1 the industry sector. An equal percentage of the works perform a qualitative or quantitative

Topics	Journals	Frequency
Human resources	<i>Human Resource Management Review</i>	3
	<i>Human Resource Management</i>	5
	<i>Human Resource Planning</i>	2
	<i>International Journal of Manpower</i>	4
	<i>International Journal of Human Resource Management</i>	5
	<i>Employee Relations</i>	1
	<i>Journal of European Industrial Training</i>	1
Entrepreneurship	<i>Journal of Small Business and Enterprise Development</i>	1
	<i>Journal of Applied Management and Entrepreneurship</i>	1
	<i>Journal of Small Business Management</i>	2
	<i>Entrepreneurship Theory and Practice</i>	7
	<i>International Journal of Entrepreneurship and Innovation Management</i>	3
	<i>Journal of Development Entrepreneurship</i>	1
	<i>New England Journal of Entrepreneurship</i>	1
	<i>Small Business Economics</i>	1
	<i>Journal of Business Venturing</i>	2
	<i>Journal of Small Business and Entrepreneurship Development</i>	1
	<i>International Small Business Journal</i>	1
	<i>International Journal of Entrepreneurship and Innovation</i>	1
General/others	<i>International Journal of Technology Management</i>	1
	<i>Competitiveness Review: An International Business Journal</i>	1
	<i>Accounting, Organization and Society</i>	1
	<i>International Journal of Physical Distribution & Logistics Management</i>	1
	<i>International Journal of Management</i>	1
	<i>Knowledge Process and Management</i>	1
	<i>Irish Journal of Management</i>	1
	<i>R&D Management</i>	1
	<i>Journal of Management</i>	1
	<i>Organization Science</i>	1
	<i>Construction Innovation</i>	1
	<i>Journal of Service Research</i>	1
	<i>Urban Anthropology and Studies of Cultural Systems and World Economic Development</i>	1
	<i>Women in Management Review</i>	2
	<i>International Journal of Commerce and Management</i>	1
	<i>Journal of Organizational Change Management</i>	1
	<i>International Studies of Management and Organization</i>	1
<i>International Journal of Biotechnology</i>	1	
Total	62	

Table I.
Frequency of articles per
journal

Source: Authors' research

empirical analysis. Most of the papers are exploratory (42 percent) or explanatory (31 percent), followed by descriptive (15 percent), exploratory-comparative (10 percent) and finally comparative and descriptive-comparative (both 2 percent). The majority of the papers are also transversal (77 percent), only 23 percent are longitudinal.

Lastly, the most common analytical techniques used are case studies – 16 of the papers, 33 percent; followed by multiple lineal regression, logistical, hierarchical or others (see Table II for references) – 13 of the papers, 27 percent (see Figure 2). Case

Issues analysed in the papers	Some examples of references
<i>Topics</i>	
Corporate entrepreneurship	Chen <i>et al.</i> (2005); Cooke (2008)
Start-up	Galbraith (1985); King-King-Kauanui <i>et al.</i> (2006)
Corporate entrepreneurship and start-up	Cardon (2003)
Human resources in general	Keating and Olivares (2007); Quader (2007)
Specific aspect of human resources	Gunnigle (1992); Finegold and Frenkel (2006)
<i>Typology</i>	
Theoretical	Bianchi (1994); Balkin and Swift (2006)
Empirical	Dyasindhu (2003); Hayton and Kelley (2005)
<i>Geographical areas</i>	
Only one	Chandler and McEvoy (2000)
More than one	Finegold and Frenkel (2006); Buckley <i>et al.</i> (2008)
<i>Industries</i>	
Firms in different industries	Twomey and Harris (2000); Kaya (2006)
Only high-tech firms	Bamberger <i>et al.</i> (1989); Balkin and Swift (2006)
<i>Use of sources of information</i>	
Two sources	Morris and Jones (1993); Wang and Zang (2005)
Three or more	Gunnigle (1992); Smith-Hunter and Boyd (2004)
Primary sources of information	Godkin <i>et al.</i> (2000); Finegold and Frankel (2006)
<i>Analytical techniques</i>	
Case studies	Krackhardt (1995); Leung (2003)
Multiple lineal regression, logistical, hierarchical or others	Kim <i>et al.</i> (2006); Wang and Wang (2008)

Note: For further information about the references contact the author

Source: Authors' research

Table II.
List of references
according to different
characteristics

studies are commonly used in management studies (Grunow, 1995) – particularly in human resources – because they provide a deeper analysis than quantitative studies. Case studies require a thorough analysis of a series of examples and can be a highly useful way of generating ideas and suggesting hypotheses to test empirically (Ghauri *et al.*, 1995; Yin, 2003).

4.2 Analysis of topics

The topics of human resource management and entrepreneurship have been broken down into sub-categories. Human resource management has been sub-divided into general studies on HRM practice and policy, studies on specific HRM issues, and studies that do not belong to either of the two preceding groups. Entrepreneurship has also been sub-divided into start-ups and corporate entrepreneurship, with a further distinction in the latter being made between SMEs and large established firms.

This section analyses the topics of the papers in three groups. First, papers that link any aspect of entrepreneurship with general HRM issues. Second, papers that link any aspect of entrepreneurship with specific HRM issues. And third, papers that cannot be included in either of the two preceding groups.

4.2.1 Papers on entrepreneurship and general HRM issues. Some papers study human resources in entrepreneurial firms by identifying HRM as a key factor, though

Geographical area	Frequency
<i>Single geographical area</i>	
Africa	1
Australia	2
China	5
Denmark	1
Europe	1
India	1
Ireland	2
Israel	2
Japan	1
The Netherlands	1
New Zealand	1
Poland	1
Singapore	2
Spain	1
Sweden	1
Thailand	1
Turkey	1
USA	15
Wales	2
<i>Combined geographical area</i>	
Canada and Europe	1
China and Canada	1
Sweden and Germany	1
USA and Australia	1
USA and UK	1
USA, Japan, Canada, Korea, Mexico, China, Taiwan and Malaysia	1
Total	48

Table III.
Distribution of articles by geographical area

Source: Authors' research

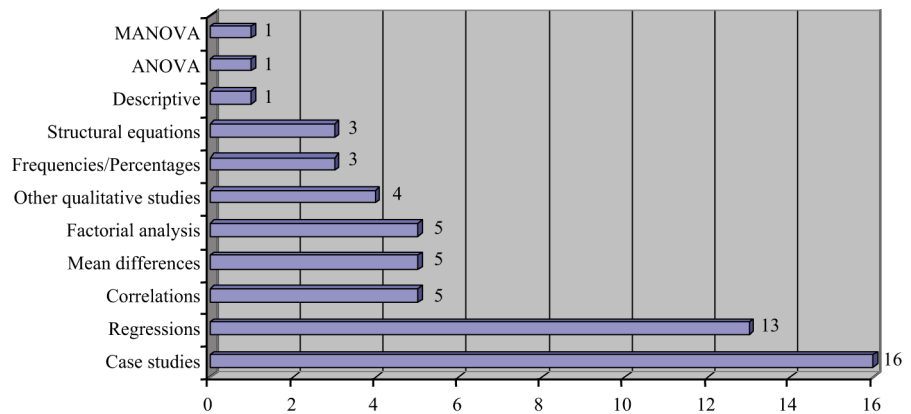


Figure 2.
Analytical techniques

Source: Authors' research

they do not go on to analyse it (see Table IV for references). Likewise, papers exist that attempt to determine what has been studied and what remains to be studied about HRM and entrepreneurship. Notable examples are Heneman *et al.* (2000) and Katz *et al.* (2000), who focus on growing SMEs, and Hayton (2005), who examines established entrepreneurial firms, both large and small.

As already pointed out, the topic of entrepreneurship can be broken down into studies of start-ups and of corporate entrepreneurship. Several studies analyse the impact of HRM on the creation of start-ups in different geographical areas (see Table IV for references). Others examine the degree of formalisation of HRM practices in start-ups (e.g. Keating and Olivares, 2007). Similarly, many other issues in start-ups have also been analysed: the role of HRM in different developmental stages (e.g. Galbraith, 1985); the role of incubators and resources – particularly human and financial – in success (e.g. Wiggins and Gibson, 2003); the role of HRM in creating entrepreneurial environments (e.g. Dayasindhu, 2003); and the importance of HRM in technology breakdown crises (e.g. Patzelt *et al.*, 2006). In addition, studies such as Bamberger *et al.* (1990) examine the HRM practices of start-ups, while Bamberger *et al.* (1989) consider the impact of HRM practices on firm performance.

Of the papers on corporate entrepreneurship, some concentrate on HRM in growing SMEs, while others look at already established firms (see Table IV for references). Some papers develop HRM models that identify success factors in established

Topics analysed in the papers	Some examples of references
<i>Entrepreneurship and general HRM</i>	
HRM and entrepreneurial firms	Krackhardt (1995); Chen <i>et al.</i> (2005)
HRM and the creation of start-ups in different geographical areas	Caputo and Dolinsky (1998) and Kim <i>et al.</i> (2006) in the US; Gunnigle (1992) in Ireland; Okamuro and Kobayashi (2006) in Japan; Quader (2007) in the US and UK; Smart (2003) in Canada, and Thakur (1998) in India
HRM in growing SMEs	Howard (2001); Marlow (2006)
HRM in established firms	Herron (1992); Morris and Jones (1993); Madsen and Ulhoi (2005)
HRM and success of corporate entrepreneurship	Sundbo (1999); Hayton and Kelley (2005); Manev <i>et al.</i> (2005); Guadamillas <i>et al.</i> (2008)
HRM practices and firm performance	Wang and Zang (2005); Wang and Wang (2008)
<i>Entrepreneurship and specific HRM issues</i>	
Recruitment policy and entrepreneurship	Perry and Wildman (1989); Cardon (2003); Leung (2003); Finegold and Frenkel (2006); Leung <i>et al.</i> (2006)
HRM training and compensation practice	Chandler and McEvoy (2000); Litz and Steward (2000); Balkin and Swift (2006); Buckley <i>et al.</i> (2008)
Others issues (HRM and entrepreneurship)	Davila (2005); Sambrook (2005); Marvel <i>et al.</i> (2006); Rutherford and Holt (2007); Lii and Wong (2008)

Note: For further information about the references contact the author

Source: Authors' research

Table IV.
List of references
according to the analysis
of topics

entrepreneurial firms (e.g. Cooke, 2008), and others analyse how HRM sub-systems promote entrepreneurial behaviour and improve firm performance (e.g. Twomey and Harris, 2000). Several studies go further and examine the impact of HRM on the success of corporate entrepreneurship (see Table IV for references).

The picture of HRM that emerges from these papers merits attention. Some authors adopt a negative point-of-view. Godkin *et al.* (2000), for example, see HRM as one of the difficulties managers of SMEs often encounter, and Trulsson (2002) identifies it as a problem to be solved before SMEs can grow. On the other hand, others see the issue in a more positive light and study the role of HRM in resolving firms' problems (e.g. Win, 2000). And still other papers on corporate entrepreneurship compare the degree of formalisation of HRM practices in growing SMEs to non-growing SMEs (e.g. Barrett and Mayson, 2007).

Papers on corporate entrepreneurship and HRM look at different issues. Packham *et al.* (2005) analyse HR practices in growing SMEs. Schuler (1986) studies the impact of HRM practices on corporate entrepreneurship. Some studies target the effect of HRM practices on firm performance (see Table IV for references) or on the success of firms that undertake corporate entrepreneurship (e.g. Hayton, 2005). Lastly, Kaya (2006) provides something different from the previous examples by examining the impact of HRM practices and corporate entrepreneurship on firm performance.

4.2.2 Papers on entrepreneurship and specific HRM issues. Most of the papers relate some standard HRM practices with entrepreneurship – with reference to either start-ups or established firms. On recruitment policy, some studies analyse hiring strategic HR professionals in biotech start-ups; the recruitment practices of entrepreneurial firms at different developmental phases; and the use of networks in HR acquisition (recruitment) for entrepreneurial firms. Other authors have focused on contingent labour as an enabler of entrepreneurial growth or have studied innovative programmes to help the unemployed who want to start up small businesses (see Table IV for references).

Chandler and McEvoy (2000) look at the moderating effect of HRM training and compensation practice on the relationship between strategy and SME performance. Other studies analyse the influence of training and trade-made franchises on the performance of small firms, or examine top management compensation strategies for rapidly growing new ventures (see Table IV for references). Similarly, Buckley *et al.* (2008) analyse the main concerns of HRM directors of established entrepreneurial firms, with special reference to performance measures and evaluation, appropriate compensation systems and the recruitment and retention of high-quality employees.

Other works analysing HRM-related issues can be included in this section. Some authors study management control systems in small growing firms; explore succession planning in small growing firms (corporate entrepreneurship); examine motivation in established entrepreneurial firms; look at the mediating effect of corporate entrepreneurship on desirable individual outcomes such as job satisfaction, turnover intent and affective commitment; or investigate the impact of corporate entrepreneurship, work role characteristics, emotional intelligence and locus of control on the adjustment and commitment of expatriates (see Table IV for references).

Papers on diversity – particularly related to women and ethnic minorities – are becoming increasingly common. Verheul *et al.* (2002) examine the entrepreneurship differences between men and women, especially those concerning HRM. Smith-Hunter

and Boyd (2004) compare how white women and women belonging to other minorities start businesses, concluding that one of the basic differences resides in the availability of human resources. And Siengthai and Leelakulthanit (1994) look at the role of Thai women as a potential human resource for starting businesses and their effect on the economic development of the country. Lastly, Pio (2006) explores the work experiences of ethnic-minority migrant Indian women and their reasons for entering entrepreneurship in post-colonial New Zealand.

4.2.3 Other papers on entrepreneurship and HRM. This last group contains studies that cannot be assigned to either of the two previous groups, but are included in the literature linking HR to entrepreneurship. One paper in this category is Masakowski (1998), which examines the link between a firm's resources and its most efficient organisational structure – with special reference to entrepreneurial resources. The author relates entrepreneurial results, organisational choices and competitive outcomes. Bianchi (1994) focuses on the promotion of entrepreneurship and the development of human capacities in national innovation systems. And lastly, Lendner and Dowling (2007) look at the organisational structure of university business incubators and its impact on the success of start-ups.

5. Discussion and conclusions

Although the fields of human resource management and entrepreneurship are well-developed and recognised disciplines by themselves, combining the study of the two has been a fairly recent phenomenon (Katz *et al.*, 2000). This paper analyses research that brings just such a dual approach to these two fields. Our goal has been three-fold. First, to describe the characteristics of the literature. Second, to analyse the topics covered in these papers. And third, to identify the limitations of this research and propose future lines of research. The preceding sections deal with the first two goals; this last section will now turn to our final goal.

Interest in this combined area of HRM and entrepreneurship has peaked since 2000. Indeed, the literature on this area has expanded greatly since this date, with the appearance of more rigorous empirical works with solid and diverse theoretical frameworks. A number of factors may explain why this field has only attracted attention over the last ten years or so. Among them are the difficulty of obtaining data on both HRM and entrepreneurship, along with the lack of a comprehensive and rigorous theoretical model relating both areas. The latter is in large part due to the great ambiguity that exists when defining the concept of entrepreneurship and its dimensions.

5.1 Characteristics

Most of the 62 papers in our analysis are empirical. Future research should attempt to define comprehensive theoretical models that integrate both research areas; this research should look to develop robust theories of HRM in organisations (Regnier, 1992). This approach would also pave the way for the development of further empirical research. Beyond this, previous research looks at corporate entrepreneurship and human resources in a general way. Future work should focus more on HRM and start-ups. It should also study entrepreneurship from a more holistic point of view, including both start-ups as well as the entrepreneurial behaviour of established firms. New studies on specific aspects of human resources would also be interesting.

5.2 Geographical/industry focus

A high percentage of the papers study US firms. It is common for the research to analyse various industries, with a special focus on high-tech sectors. The crucial role of competitive environment on the entrepreneurial behaviour of firms may lie behind this finding. There is a trend towards concentrating entrepreneurship studies on high-tech sectors, as the firms in these industries tend to be the most entrepreneurial (Covin and Slevin, 1989). Future work should extend this research to other industries and should perform comparative studies.

5.3 Methodology

Most of the empirical papers are exploratory, transversal and take the firm as the unit of analysis, thus revealing the current fledgling nature of this combined area of research. The majority of the studies also rely solely on primary sources of information – case studies and regression analyses are the most common. In principle, the case study approach of most of the empirical papers could limit their chances of publication. This has not happened, however, because of the increasing recognition that in-depth case studies play an important role in the study of effective human resource practice and entrepreneurship. Nevertheless, future studies should go one step further and use other analytical techniques to perform explanatory and longitudinal studies. As far as possible, they should also look to combine qualitative and quantitative information. Some papers take the position that qualitative and quantitative methods can be used in the same study (Ghauri *et al.*, 1995). Indeed, some scholars claim that the two approaches are complementary and cannot be used in isolation from one another (Jones, 1988). Studies that take the individual (i.e. the entrepreneur) – and not just the firm – as the unit of analysis could also further develop the entrepreneurship field. This individual perspective should be used to study the relationship between HRM and entrepreneurship. In addition, future studies could also adopt the group as the unit of analysis, as is common in HRM literature.

5.4 Topics

The papers can be divided into two main topic groups: those that study the aggregate impact of HRM on entrepreneurship or entrepreneurial firm performance, and those that analyse specific HRM practices separately. Our analysis of the two groups leads to the following conclusions. A wider and more rigorous analysis of the role of HRM in start-ups and in start-up performance would be useful. In addition, many authors of papers on corporate entrepreneurship and HRM are not rigorous when selecting their samples of firms. It is common to find papers that automatically equate SMEs with entrepreneurial firms. Future research, therefore, should take more care in identifying entrepreneurial firms to be included in the study.

The papers on specific HRM issues fail to cover all areas in detail, notable omissions being career development and position analysis. Future work, then, should look to analyse these areas and fill the gaps. In addition to this, no works exist on the combined and individual effects of HRM practices on entrepreneurship or its results. Studies that analyse whether a combined package of human resource practices has a differential impact on entrepreneurship than the sum of the impacts of the individual practices would be welcome.

Research should also continue on areas such as incubators and diversity. Although some work exists (e.g. Wiggins and Gibson, 2003; Lendner and Dowling, 2007), the current relevance of both topics makes further work in this direction advisable.

This review of the published literature is not free from limitations. Our choice of search terms to limit the areas of research covered in this paper may have resulted in omitting some works from our analysis that could have been included. Papers on specific dimensions of entrepreneurship or HRM procedures that do not include our search terms in the title or abstract may fall into this category. Future studies should increase the number of search terms. Search terms for HRM could include the different HRM procedures, while the search terms for entrepreneurship could capture the dimensions of corporate entrepreneurship: innovation, corporate venturing and strategic renewal.

Lastly, this review of the literature on HRM and entrepreneurship has practical implications as well as academic relevance. Because HRM is crucial for the success of entrepreneurship (Welbourne, 2006), HRM practices should focus as much on building relationships among employees as they do on matching individual employees to job situations (Larsen, 2001). Hayton (2005) observes that while the traditional model of HRM encourages matching employee contributions to organisational needs and inducements, a more relevant perspective to corporate entrepreneurship would encourage the building of relationships among employees, between employees and the organisation, and between employees and key organisational stakeholders. These inter-relationships are necessary because they represent essential channels for the flow of knowledge and information, which are the building blocks of innovation and entrepreneurial opportunities.

In conclusion, then, scholars face a great challenge to do more with this new field of study, with further research into HRM in entrepreneurial firms required.

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