

This article was downloaded by: [USP University of Sao Paulo]

On: 08 August 2011, At: 07:57

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



The International Journal of Human Resource Management

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rjih20>

The central role of human resource management in the search for sustainable organizations

Charbel José Chiappetta Jabbour ^a & Fernando César Almada Santos ^a

^a University of São Paulo (USP), Brazil

Available online: 11 Dec 2008

To cite this article: Charbel José Chiappetta Jabbour & Fernando César Almada Santos (2008): The central role of human resource management in the search for sustainable organizations, *The International Journal of Human Resource Management*, 19:12, 2133-2154

To link to this article: <http://dx.doi.org/10.1080/09585190802479389>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan, sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

The central role of human resource management in the search for sustainable organizations

Charbel José Chiappetta Jabbour* and Fernando César Almada Santos

University of São Paulo (USP), Brazil

The aim of this article is to present the main contributions of human resource management to develop sustainable organizations. The relationship between human resources and organizational sustainability, which is based on economical, social and environmental performance, involves some important aspects concerning management such as innovation, cultural diversity and the environment. The integration of items from the triple bottom line approach leads to developing a model based on a strategic and central posture of human resource management. Based on this model, propositions and recommendations for future research on this theme are presented.

Keywords: cultural diversity; environmental management; human resource management; innovation; sustainable development; sustainable organizations

Introduction

Debates regarding sustainability are ever present on the agenda of global problems. Issues such as environmental degradation, marginalization of significant social groups, radicalism and protests against capitalism, and the search for innovations in public and private sectors that deal with these dilemmas have increasingly become imperative nowadays.

A standard of development that equally favors economical, social and environmental aspects is now required. Moreover, its feasibility is linked, either partially, or on the whole, to activities carried out in an organizational context. Either public or private organizations are historically pointed out as responsible for initiating social and environmental changes in a vicious circle, stimulated by a reality of exclusion and marginalization of groups of individuals, as well as reinforcing environmental degradation, whereby global warming is one of the more drastic consequences.

The concepts related to sustainable development are broad and little has been presented in terms of concepts and practical implications to help organizations become sustainable. According to Bakker, Groenewegen and Hond (2005), from this puzzle of definitions, concepts and terminologies linked to organizational sustainability, the certainty companies may have is that they have to solve the equation which includes economical, social and environmental criteria in their operations.

The aim of this article is to present:

- a literature review on the importance of human resource management for the development of sustainable organizations (Sections 3, 4, 5, and 6);
- systematization of the main empirical evidence of the research previously developed in this theme (Section 7); and

*Corresponding author. Email: cjabbour@terra.com.br

- proposal of a multidimensional model where human resource management is at the centre of organizations which intend to operate in a sustainable way. Based on this model, propositions and recommendations for future research on this theme are presented (Section 8).

The choice of human resource management as a part of organizational sustainability is justified because: (a) human resource is a function which presents greater potential to include the postulates of sustainability in the organizational scope (Vickers 2005); (b) modern human resource management and sustainable organizations require a long-term focus and actions which extrapolate the search for an exclusively economical performance (Wilkinson, Hill and Gollan 2001); (c) stimulating organizational sustainability is the current paradigm of human resource management (Boudreau and Ramstad 2005); and (d) modern human resource management has to be effective in order to meet the needs of the multiple stakeholders of a company (Colakoglu, Lepak and Hong 2006).

In order to meet this objective, the main contributions of human resource management for economical, social and environmental performance of sustainable organizations are presented, as well as their respective limitations:

- economical performance is investigated based on the companies' capability to innovate, considering that innovation ensures a superior economical performance (Vickers and Bear 2006);
- social performance of a company is considered as its effectiveness to manage the diversity of its human resources; and
- environmental performance is considered as the performance of environmental management systems and development of environmentally friendly products.

After presenting the contributions of human resource management for organizations which intend to become sustainable, based on the previously mentioned features, the aspects of sustainability are integrated with synergy in a model by using activities and practices of human resource management. The objective of this model is to increase not only the emerging literature in sustainable organizations, but also scientific production in human resource management. Based on this model, propositions for future practical studies are suggested in order to advance this theme which is classified by Greenwood (2002) as a topic which is nowadays scarce in theoretical and practical perspectives.

Methodology

The development of this article followed the method presented in Figure 1. Based on the objectives of this research outlined in the introduction, a literature review was carried out in two ways: (a) identify the main pertinent concepts; and (b) systematize the main empirical evidence of selected articles that deal with the contributions of human resource management for innovation management, management of cultural diversity and environmental management in companies.

Considering that it was not possible to find studies that add empirical evidence directly linked to contributions of human resource management for the organizational sustainability terms used in the scope of this article, it is relevant to propose a conceptual model. This model is the basis for the propositions of future research which can be developed in this research area. In this article, the proposal of a model is considered fundamental for advances in a particular field of research (Rosenblueth and Wiener 1945) because they are simplified representations of a phenomena in the way that they are in an intermediate position between reality and a mental conception (Coll, France and Taylor 2005). Based on the proposed model, areas for future

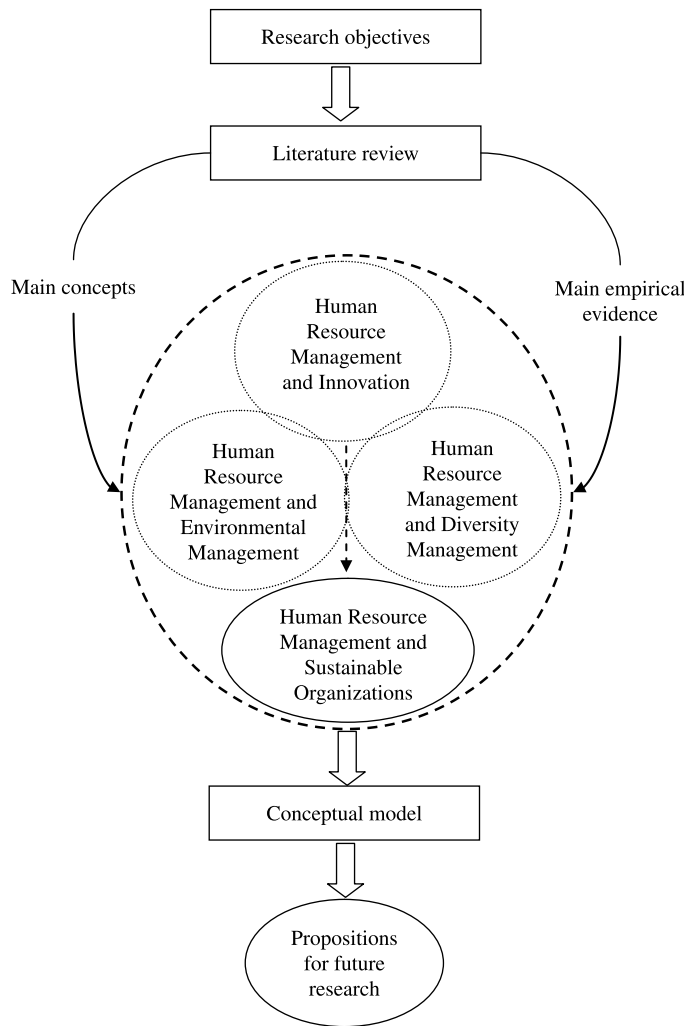


Figure 1. Methodological process of research development.

research are suggested in order to make empirical advances in the area of contributions of human resource management in the search for sustainable organizations.

Sustainable organizations: the role of human resource management

According to Wilkinson et al. (2001), two subjects are central in the debate regarding sustainability where organizations are concerned. The first one deals with changes that companies have to make in order to become agents of sustainable development, which is understood as the type of development which meets the needs of current generations without hindering future generations to meet their economical, social and environmental requirements. It can be observed that the range of variables involved in this definition obscures its implications for organizational dynamics in companies. The second theme in the core of the debate concerning sustainability is the search for a more ethical and strategic human resource

management which can stimulate and support staff development. Moreover, it should also help meet the sustainable objectives of a company.

Wilkinson et al. (2001) state that it is convenient to deal with these two issues in an integrated way because both require a holistic vision, a long-term perspective and a change in the standard of attempting to find immediate profits. Furthermore, human resource management and organizational sustainability involve changes in organizational structure, competitive priorities and the set of organizational values chosen by companies.

With regards to the definition of organizational sustainability, Hart and Milstein (2003, p. 66) propose that 'a sustainable company that contributes to sustainable development produces concurrently economical, social and environmental benefits – known as the three pillars of sustainability'. The definition of a sustainable company is symmetric to the concept of a socially responsible company, as it is consensual to accept that social corporate responsibility involves organizational obligations with aspects of economical, social and environmental performance, as observed by Bakker et al. (2005).

Along the same lines, Vuontisjärvi (2006) states that social corporate responsibility involves efforts and complexity of organizations whose aim is to complement the economical performance of a company with satisfactory levels of social and environmental performance. This idea was more appropriately dealt with by Elkington (1994), focusing on the concept of triple-bottom-line (TBL) which basically expresses the fact that organizations have to add value in economical, social and environmental aspects (Elkington 2006).

As a corollary, this article considers that organizational sustainability may be understood as the managerial practice that targets non-temporal organizational vitality by carrying out actions which favour economical, environmental and social performance criteria with equity. Furthermore, these actions have to be transparent and ethically plausible (Vickers 2005).

Hart and Milstein (2003) postulate that if the imperatives of sustainability are dealt with using only one focus, they tend to be understood by organizational leaders as a necessary evil. Nevertheless, sustainability has to be analysed as a plural object which demands investments at the same time they add value to companies, within a scope which stimulates a more sustainable world and value for shareholders. This proposal becomes clear when discussing the approach of increasing sustainable value presented by these authors. Value for shareholders is a multi-faceted model which has to consider short- and long-term activities which ensure that all interested people are included and that there is satisfactory economic performance of a company. At the same time it has to develop competencies needed for innovation, which are going to assure the future expansion of a company.

Although the importance of organizations having a more sustainable development seems to be clear, the way these organizations may create sustainable strategies is less clear. Since the formulation of sustainable strategies requires the involvement of diverse organizational functions, the crucial role that human resource management has to perform in this process should be highlighted. Various researchers have analysed sustainable organizations that are supported by human resource management.

Thus, while presenting the future of human resource management, Vickers (2005) states that sustainability is going to be imperative for this functional area. Human resource management, which is considered the organizational area that presents the greatest potential for the incorporation of these subjects of sustainability, has to develop particular strategies with this purpose. This perspective is reinforced by Eisenstat (1996) who states that the human resource function has a central role in organizations and can stimulate the inclusion of issues concerning sustainability in the scope of the various relationships that take place inside a company and with external organizations (see Figure 2).

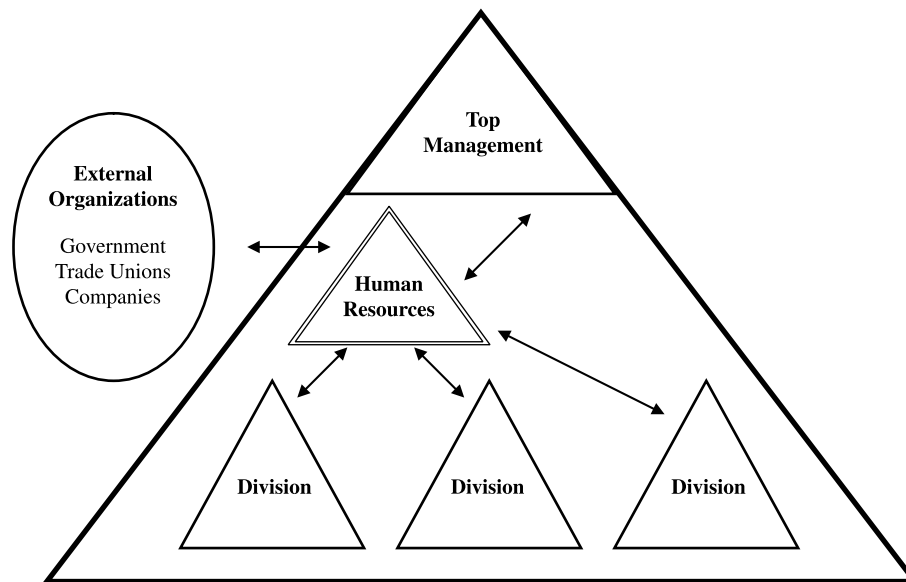


Figure 2. Organizational centrality of human resource function.
Source: Adapted from Eisenstat (1996, p. 8)

The importance of discussing organizational sustainability on the agenda of human resource management was analysed by Boudreau and Ramstad (2005) in pioneering work concerning the integration of human resource management with sustainability (Table 1). According to these authors, there are two main challenges for modern human resource management: (a) one is related to attracting, retaining and developing talents needed for the survival of a company in globalization and search for innovation; and (b) constructing human resource management which meets the objectives linked to economic, social and environmental sustainability by developing actions with a systemic and long-term approach.

In order to integrate human resource management with organizational sustainability, it is necessary to formulate human resource strategies that stimulate the economic, social and environmental strategies of the organization. Strategic human resource management is dealt with in this article as the use of a set of practices of this function to attain strategic objectives. Formulating a human resource strategy and adapting it to the strategy of a company has to be understood as an interactive and dynamic process and not as a flow in only one direction (Wright and Snell 1991).

Thus, strategic human resource management shows the set of activities developed by the human resource area in order to contribute to organizational effectiveness (Schuler and Jackson 2005). At the moment that organizational effectiveness begins to incorporate economic, social and environmental criteria, human resource management has to become effective in a sustainable way. Based on a systemic perspective, human resource management has to provide companies with complementary, diverse and innovative competencies which will be developed by stimulating sustainable individual behaviour. As a consequence, these competencies will favour a multidimensional organizational performance (see Figure 3).

Within the current academic debates, it is important to highlight that it is not usual to find studies that deal with aspects of social responsibility and ethical features of human resource management (Greenwood 2002). For this reason, the potentialities of this interface are analysed in the following sections.

Table 1. Environmental sustainability as a paradigm of human resource management.

		<i>Organizational paradigm</i>	
		<i>Traditional one: financial</i>	<i>Emerging one: sustainability</i>
Decisions of management of HR	Management of talents	Does human resource management ensure the appropriate management of talents needed to improve financial results?	Does human resource management make the best decisions about the management of talents which are critical for sustainability?
	Excellence of services	Are policies and practices of human resource efficient and do they ensure the return from their investment?	Are policies and practices of human resource coherent with assumptions of sustainable development?

Source: Boudreau and Ramstad (2005, p. 133).

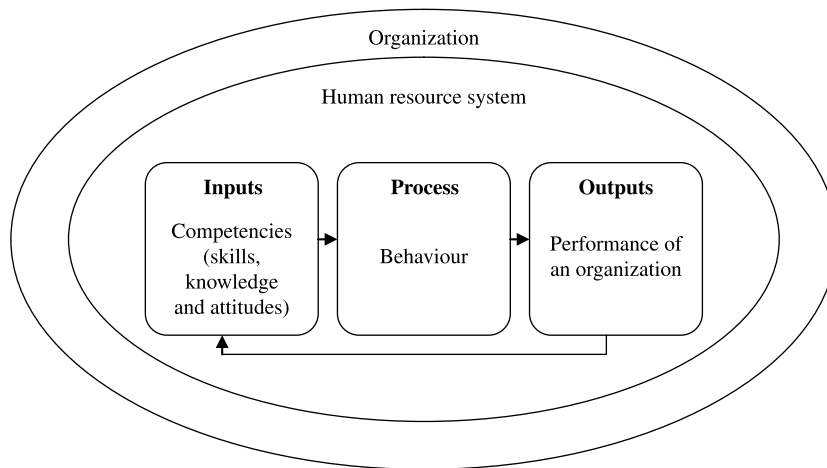


Figure 3. Human resource management based on a systemic perspective.
Source: Adapted from Wright and Snell (1991).

Human resource management and performance in innovation

Innovation is the term used to demonstrate how organizations increase value by developing either new knowledge or new processes for the use of knowledge already available. This term generally refers to either incremental or radical development of new products and processes, but it can also be used to characterize organizational changes. In all of these cases, innovative performance credits companies with superior economical performance (Vickers and Bear 2006). Without a focus on innovation, it is impossible for a company continuously to create products and services necessary to ensure the prosperity of its businesses (Hart and Milstein 2003). For this reason, economical performance is analysed based on the innovative potential of a company.

Concerning sustainability, researchers have started investigating the social and environmental impacts caused by continuous innovation in products and the processes needed to manufacture them (Wilkinson et al. 2001). An organizational effort is recommended for innovation processes that ensure the continuity of an organization on a solid economic basis. Moreover, human resource management plays a crucial role in stimulating innovation in sustainable organizations.

Literature on organizational features and innovative performance may be considered abundant, with various recognized studies published in these areas, such as Mintzberg (1983). However, Laursen and Foss (2003) observe that investigations that analyse how new practices of human resource management influence the innovative performance of companies are scarce. Chew and Sharma (2005) investigated the relationship between adopting human resource practices, organizational culture and economic performance from 120 companies from Singapore. They concluded that certain cultural features and human resource management practices were positively related to the best economic performance of the companies.

Laursen and Foss (2003) carried out a relevant survey in 1,900 Danish companies in order to analyse the hypothesis that modern practices of human resource management are positively related to companies' innovative performance. These authors concluded that seven out of the nine human resource practices used by manufacturing companies led to superior innovative performance, as well as innovative performance being positively influenced by internal training. In service industries, the more companies use external training, the more they innovate. In another study, Terziovski and Morgan (2006) concluded that the main factors that influenced

the process of innovation in the biotechnology industry depend, to a large extent, on the development of individual and organizational competencies, which require effective participation of human resource management practices. On the other hand, after investigating 367 Spanish industrial companies, Cano and Cano (2006) concluded that the human resource practices that stimulated innovation took place mainly in the area of remuneration and public recognition for achieved performance.

These results reinforce the statement that innovative companies are usually also known for the quality and originality applied in their human resource management because their economic performance is strongly linked to their innovative potential. As the main resources needed for this innovation are their staff and creativity, companies are being compelled to manage, motivate and reward them in order to enhance their competitive advantage (Gupta and Singhal 1993). The main human resource practices related to innovative organizations are presented in Figure 4.

Schuler and Jackson (1987) state that when the aim of human resource management is innovation, practices that stimulate employees to think, create and reflect in original ways are required. According to these authors, the employee behaviour characteristics that are needed for this type of organization are contained in the following innovation strategy:

- a high degree of creativity;
- a long-term focus;
- a high level of cooperative and interdependent behaviour;
- a moderate concern for the quantity and quality of the outputs of a company;
- a great degree of risk taking; and
- a high tolerance of ambiguity and unpredictability.

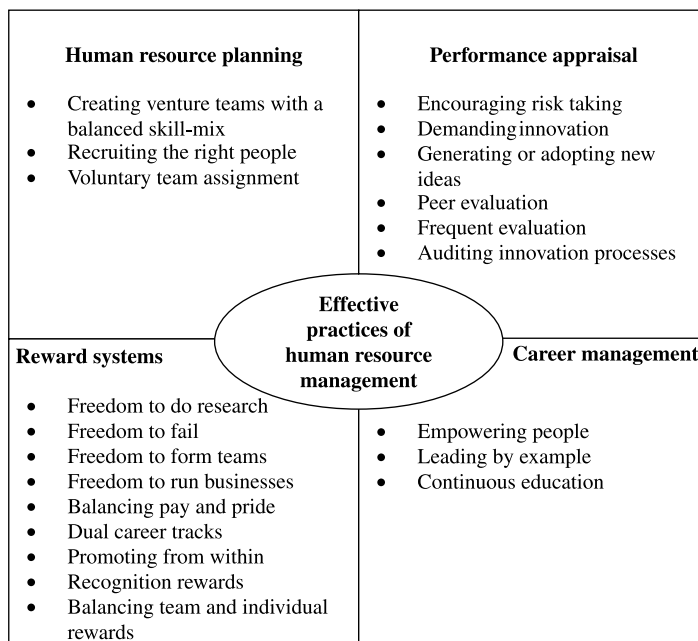


Figure 4. Practices of human resource management for effective innovation.
Source: Based on Gupta and Singhal (1993, p. 42).

As a consequence, the human resource management of organizations that adopt such an innovation strategy has to develop:

- (a) jobs that require close interaction and coordination among groups of individuals;
- (b) performance appraisals that are more likely to reflect long-term and group-based achievements;
- (c) jobs that enable employees to develop skills that can be used in other positions in the firm;
- (d) compensation systems that emphasize internal equity rather than external or market-based equity;
- (e) pay rates that tend to be low, but that enable employees to be stockholders and have more freedom to choose the mix of components (salary, bonus, stock options); and
- (f) broader career paths to develop a broad range of skills. These practices facilitate cooperation, interdependent behavior that is oriented towards the longer term, and foster an exchange of ideas and risk taking. (Schuler and Jackson 1987, p. 31)

Many of these precepts form an innovation culture (see Figure 5) as mentioned by Vickers and Bear (2006).

Human resource management and social performance

Traditional activities of human resource management, such as selection, training and diverse practices of individual learning have systemically escaped from the postulates for superior social performance. According to Greenwood (2002), socially appropriate human resource management has to: (a) create reward systems based on the concepts of equity, distributive justice, autonomy and respect; (b) ensure safety in the workplace in order to avoid accidents and respect employees’ health; (c) treat employees following the principles of respect, transparency, honesty and long-term nature of changes; and (d) respect employee’s privacy, and, as a consequence, to have respect, freedom and autonomy as organizational values.

Thus, it is clear that human resource management that supports recognized social performance is linked to diversity management inside organizations. Diversity management continues to be an area of significant interest for organizational researchers, industrial leaders and members of diverse governmental organs (Wimbush 2006). With regard to the construction of organizational theory, the theme of diversity management of human resources is highlighted as one of the most promising, but at the same time it is scarce (Pless and Maak 2004).

According to Wilcox (2006), diversity management implies the definition of a human resource policy for employees who belong to traditionally marginalized groups (Table 2).

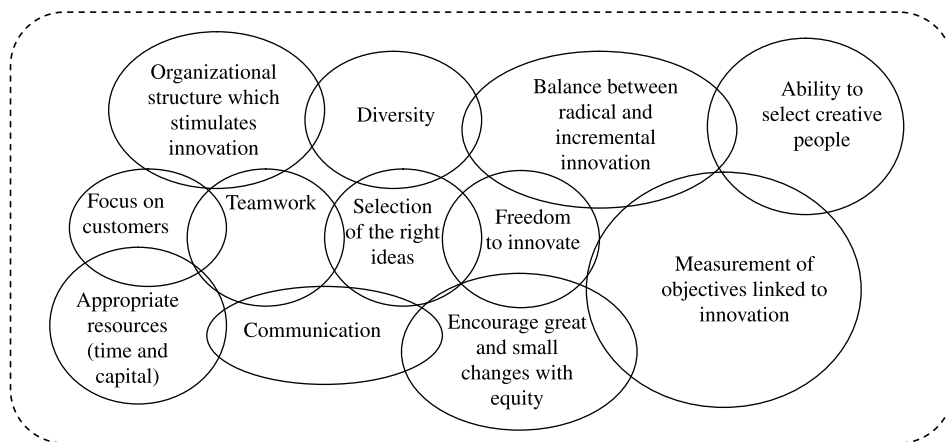


Figure 5. Components of an organizational culture that support innovation. Source: Based on Vickers and Bear (2006, p. 13).

Table 2. Potential responses from human resource management for social problems.

<i>Social issue</i>	<i>Responses of human resource policy</i>
Inexperienced employees with deficits of competencies who are vulnerable to layoffs	Re-design of junior jobs to enable these employees to be exposed to a variety of tasks that involve distinct levels of complexity
Differentiation of the skills that women, old people and minorities have	Programmes for equity and access and affirmative actions
Social exclusion of marginalized employees	Regular training and offer of continuous education for employees with deficit of competencies, such as young and old people and groups with high risks of social segregation
Inequity related to progression in careers and succession plans	Periodic review of the needs of training linked to the individual development plans and career paths and criteria for well defined and divulged progression

Source: Adapted from Wilcox (2006, p. 193).

In more detail, Pless and Maak (2004) state that these groups include members who are women, employees who are expatriates from developing countries and minorities of ethnic and/or religious nature.

Despite the fact that many organizations have initiated diversity management, organizational practice reveals that the results achieved are usually far from the initial plans. Organizations fail in most attempts because they cannot show how the results of their practices are linked to the increase in quality of life in the workplace and to building up an environment of inclusion. These deficiencies can be easily overcome with the consolidation of a culture of inclusion, which is defined as an organizational context that enables people with distinct experiences, mental models and ways of understanding the world to work together in order to achieve individual, collective and organizational growth (Pless and Maak 2004). The proposed phases for the consolidating a culture of inclusion are presented in Figure 6.

The human resource function can perform a central role when building up a more ethical organizational basis and it can also contribute to integrate aspects of social nature into its more traditional activities, such as performance evaluation, management of training needs and elaborating disciplinary processes (Weaver and Treviño 2001). The aspects of human resource management for diversity management are presented in Figure 7.

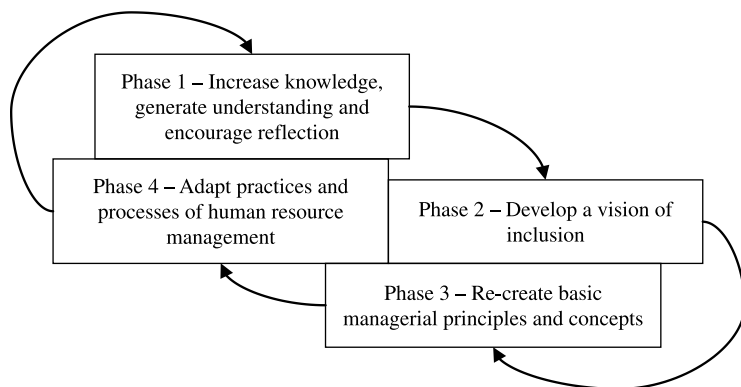


Figure 6. Change phases to build up a culture of inclusion.

Source: Adapted from Pless and Maak (2004, p. 136).

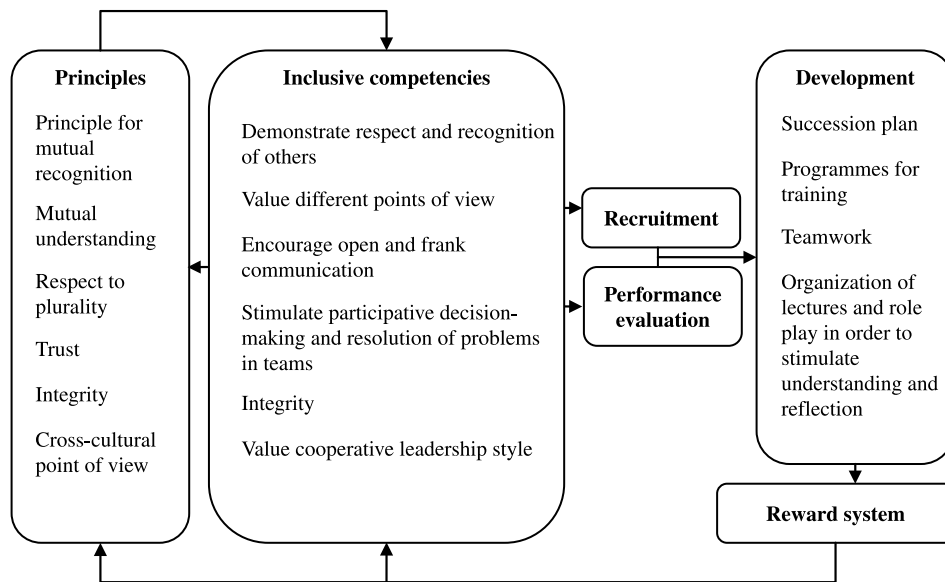


Figure 7. Role of human resource management to create a culture of inclusion.
Source: Adapted from Pless and Maak (2004, p. 140).

According to Fleury (1999), diversity management increases value to organizations because it: (a) attracts and retains the best employees from those who are seeking a position in the labour market; (b) provides access to a market share which was not previously explored; (c) stimulates creativity and innovation; (d) creates potential for the resolution of complex and multidimensional problems; and (e) increases organizational flexibility.

Diversity management contributes to the process of innovation because it requires human resources from an organization that have not only distinct personal features but also unique and diverse knowledge, skills and attitudes (Gupta and Singhal 1993).

Human resource management and environmental performance

Rosen (2001) states that the inclusion of environmental dimension in businesses should be considered as the greatest change that has taken place in the industrial and business worlds over the past years. The complexity and importance of environmental management can be observed when its definition is considered: environmental management involves a series of adjustments and planning of structure, systems and activities of a company in order to define a certain type of position related to the environmental variable (McCloskey and Maddock 1994).

Some of the various organizational benefits of a company targeting a superior environmental performance are:

- access to environmentally aware consumers by exploring environmental marketing strategies (Ginsberg and Bloom 2004);
- the possibility of exporting production to countries with stricter environmental legislation than the company's native country (Rosen 2001);
- valorization of the company's shares, as suggested by the Dow Jones Sustainability Group Index (Preston 2001);
- economic advantages obtained by promoting the environmentally correct institutional image of the company (Miles and Covin 2000);

- a direct reduction in the amount of economic resources spent on environmental fines (Hunt and Auster 1990); and
- innovation in products and processes that are a consequence of the increase in the environmental concern of the company (Porter and Linde 1995).

However, human resource management and environmental management rarely form an integrated subject of research (Fernández, Junquera and Ordiz 2003). In spite of admitting that effective environmental management requires contributions from human resource management, little is known about these recent organizational dynamics (Rothenberg 2003). This issue was raised by Daily and Huang (2001) in one of the few studies in this area. According to these authors, superior environmental performance requires human resource practices that support the whole implementation and maintenance of environmental management systems.

Recently, Govindarajulu and Daily (2004) suggested that not only environmental management systems have to be supported by particular practices of human resource management. Similarly, the environmental dimension should be included when developing new products and processes and, as a consequence, including the environmental dimension in these organizational activities is equally necessary. Following this line of thought, Stone (2000) states that the limitations analysed in the practices of environmental management in New Zealand have the aspect of 'people' as its greatest hindrance. These conclusions were made by this author in later studies (Stone 2006a, 2006b).

With regards to environmentally appropriate innovations, environmental issues are integrated either with the new product process and process development or with changes in existing products (Pujari, Wright and Peattie 2003). Nevertheless, the current assumptions of product development in manufacturing companies are predominantly based on current models in order to produce goods with low cost, high quality and profitability. As a consequence of this logic, the environmental dimension tends to be considered as an additional cost, which is included only when indispensable. Often, environmental criteria are thought of as secondary in product development processes (Kaebernick, Kara and Sun 2003).

The development of cleaner technologies requires human resource management to perform an active role. Being aware of the environmental strategy of a corporation, it has to provide the competencies needed for the continuous improvement of the environmental performance. Rothenberg (2003) states that employees are the main experts in the way environmental dimension can be included in the most fundamental organizational activities. Thus, motivating and encouraging employees to assume a proactive environmental posture becomes the new objective of the human resource strategy. The main contributions of human resource management for a superior environmental performance are presented in Table 3.

In accordance with the principles of Wehrmeyer (1996), Jabbour and Santos (2008) indicate that human resource management may contribute to environmental management in companies: They should: (a) recruit and select people committed to the environment; (b) train and evaluate employees' performance based on environmental criteria; (c) implement ways of rewarding individual and collective environmental performance in remunerated and non-remunerated ways; (d) stimulate continuous education in environmental management; (e) treat environmental aspects as values of a corporate culture; and (f) promote interaction between teams in order to deal with environmental problems and strive for continuous improvement of environmental management activities.

Empirical evidence from other studies

The specialized literature presents empirical evidence concerning the contributions of human resource management to areas which were dealt with in this article. In a general way, there are

Table 3. Role of human resource for environmental management in companies.

<i>Role of human resources</i>	<i>Activities</i>
Support to environmental management system	<ul style="list-style-type: none"> • Provide training • Guarantee effective communication • Motivate employees
Develop organizational change	<ul style="list-style-type: none"> • Incorporate environmental dimension in the values of a company • Develop competencies for environmental management • Stimulate ethics for environmental issues
Alignment of functional dimensions	<ul style="list-style-type: none"> • Recruit and select based on environmental criteria • Include environmental dimension in job description • Train for the environment • Evaluate performance and reward based on environmental strategy

Source: Adapted from Wehrmeyer (1996, p. 40).

various investigations that describe the positive contributions of human resource practices to innovation management in companies (Table 4). A smaller amount of empirical studies assert that there is a positive relationship between the management of the diversity of human resources and a company's performance (Table 5). In addition, there is a small number of empirical outcomes regarding the importance of human resource management for the performance of environmental management activities in companies (Table 6).

However, in spite of the relevance of this theme, empirical results of studies that focus on the investigation of contributions of human resource management simultaneously to innovation management, the consolidation of cultural diversity and the improvement of performance in environmental management were not found. Thus, the next section deals with a multi-dimensional model concerning the contributions of human resource management to the development of sustainable organizations.

Proposal of a multidimensional model based on human resource management

Taking into consideration that the construction of sustainable organizations requires a holistic and multidimensional vision that encourages superior performance in economic, social and environmental aspects, a model that stimulates organizational sustainability using human resource management is presented in Figure 8. Based on this model, a set of propositions, which can be a reference for empirical research and contributes to the development of this field of research, is presented.

In this model, human resource management is aligned with the objectives of a company, which are linked to innovation management, cultural diversity management and continuous improvement of environmental management. Moreover, all human resource practices are expected to be balanced in order to support organizational sustainability because the objective of innovation management, cultural diversity and environmental management cannot be contradictory. Thus:

Proposition 1: The strategy of human resource management in sustainable companies supports innovation management, cultural diversity and environmental management with the same degree of importance.

Table 4. Human resource management and innovation management: empirical evidence of other investigations' results.

<i>Investigation</i>	<i>Empirical evidence</i>
Walsworth and Verma (2007)	This study shows that, for international workplaces, training is good for innovation while variable pay and employee involvement have less impact. In other words, each component of high performance work practices – HPWP – should be analysed separately for their effects on innovation in the context of ‘internationalized’ workplaces.
Koc (2007)	The investigation in 91 large and medium companies in the software sector in Turkey reveals that ‘idea generation’ and ‘human resource factors’ have made a positive impact on innovation capacity.
Tsai (2006)	The results of the statistical analysis demonstrated that the effective use of employee empowerment practices is positively related to creating innovations in the high-tech sector of the semiconductor design industry in Taiwan.
Katou and Budhwar (2006)	This research not only supports that human resource management systems have a positive impact on organizational and innovation performance, but it also explains the mechanisms through which human resource management systems improve organizational performance.
Mazzanti, Pini and Tortia (2006)	Companies of the Emilia-Romagna food sector in Italy were investigated. The good quality of industrial relations within the firm, characterized by a management policy favouring the involvement of both employees and worker representatives in work organization practices, constitutes a relevant factor to stimulate organizational innovation.
Kontoghiorghes, Awbrey and Feurig (2005)	Human resource management has a crucial role in promoting the features of a learning organization, which improve the creation of innovations in processes in four companies where 805 employees were interviewed.
Elenkov and Manev (2005)	This study indicates a positive correlation between the leadership practiced by the top management and the creation of innovations in work organization, products and processes. The data were collected from 270 companies of 12 European countries.
Shipton et al. (2005)	Based on the analysis of 35 UK manufacturing companies, this research concludes that effective human resource management systems, which incorporate sophisticated approaches to recruitment and selection, appraisal and training, predict organizational innovation in products and production technology.
Jiménez-Jiménez and Sanz-Valle (2005)	A study carried out in 180 Spanish firms shows evidence that the choice of an innovation strategy implies the use of incentive-based compensation, the encouragement of employee participation, the use of appraisal systems and the use of broad internal career opportunities.
Chan, Shaffer and Snape (2004)	1,442 Hong-Kong companies were investigated. This investigation shows that the dimensions of organizational culture have positive influences on organizational and market performance.
Lau and Ngo (2004)	Empirical findings from a survey of 332 firms in Hong Kong confirmed that organizational culture acted as a mediator between a firm’s human resource system and product innovation.

Table 4 – continued

<i>Investigation</i>	<i>Empirical evidence</i>
Laursen and Foss (2003)	The method of survey was applied in 1,900 companies in Denmark. It was concluded that the human resource system stimulates innovation, however, this influence is different for manufacturing and service sectors.
Hailey (2001)	This study in a European company shows that the support of human resource management for innovation is carried out in order to promote: the introduction of a new vision and values; the refining of the performance management system; the development of a new leadership talent; and the restructuring of the human resource department.
Ichniowski, Shaw and Prensushi (1997)	36 steel production lines were investigated. Lines using a set of innovative work practices, such as incentive pay, team work, flexible job assignments, employment security and training, achieve higher levels of productivity than lines with the more traditional approach.

Table 5. Human resource management and diversity management: empirical evidence of other investigations' results.

<i>Investigation</i>	<i>Empirical evidence</i>
Wu and Chiang (2007)	Investigation carried out in 18 Asian companies shows that there are cultural differences between the Taiwanese and the Chinese and employees. Each group has different perspectives on their careers and, as a consequence, human resource practices have to contribute to the satisfactory management of this diversity.
Devine, Baum, Hearn and Devine (2007)	This study shows that the cultural diversity of workers in the hospitality industry of Northern Ireland is increasing. The management of this diversity can be improved by aligning human resource practices, such as career development and promotion opportunities. Therefore, the role of multicultural training for all employees is important.
Subeliani and Tsogas (2005)	The analysis of a financial institution from Holland reveals that diversity management has been used primarily to attract ethnic consumers to the bank.
Ng and Burke (2005)	This research examined job-choice decisions among women and minorities when presented with offers from organizations with and without diversity practices. In the search for talent, the results clearly indicate that women and minorities considered organizational diversity practices to be important when accepting employment.
Erhardt, Werbel and Shrader (2003)	Investigation carried out in 127 large US companies shows evidence that the diversity in the board of directors is positively associated with financial performance indicators of these companies, and it has implications for human resource strategy.
Benschop (2001)	The findings indicate that an organization's strategy for managing diversity influences both the process of meaning formation regarding diversity and the perception of performance effects. Diversity affects both daily interactions and the functioning of diverse groups. Human resource strategies and activities mediate the performance effects of diversity.

Table 5 – continued

<i>Investigation</i>	<i>Empirical evidence</i>
Wentling and Palma-Rivas (2000)	This study show evidence that eight multinational companies investigated are not only expanding their actions of managing cultural diversity in their headquarters but are also internationalizing these practices. This reality is supported by various practices of people management, such as recruitment, selection, performance evaluation and career planning. The authors highlight that it is essential for human resource professionals to acquire the necessary knowledge and skills to deal with diversity at the international level as well.
Richard (2000)	A study in US banks shows that cultural diversity is managed by aligning practices of human resource management. Racial diversity interacted with business strategy in determining firm performance measured in three different ways: productivity, return on equity and market performance.
Fleury (1999)	Case studies in Brazilian companies reveal that management of the cultural diversity is carried out by transforming the practices of human resource management: recruitment and selection; training and communication. Although the cultural diversity programmes have been stimulated by the parent company, there was the need to develop a local approach, adapted to the Brazilian reality.
Ng and Tung (1998)	The investigation of a Canadian bank shows that the management of the ethno-cultural diversity experienced lower levels of absenteeism and achieved higher productivity and financial profitability. Negative aspects which are pointed out have to be managed effectively by the people management area.
Wright, Ferris, Hiller and Kroll (1995)	This study reveals that the impact of the US Department of Labor awards for exemplary affirmative actions through management of diversity may be associated with competitive advantage and that discrimination-related announcements may be associated with the inability to achieve such an advantage.

Proposition 2: The set of practices of human resource management has to be balanced in order to support innovation management, cultural diversity and environmental management in an equal way.

Proposition 3: The experts who are responsible for people management in sustainable companies have to participate actively when objectives are being defined in order to support them satisfactorily.

In this model, the performance in managing innovation successfully is influenced by the ability of a company to manage the diversity of its human resources. Analogously, the increase of concern for environmental issues tends to create new opportunities of innovation for a company. For instance, the contributions of human resource management to diversity management tend to create a high level of performance in innovation. In addition, the high innovative performance of a company will ensure a superior economic performance for a company and create conditions for a high social and environmental performance as well. Thus, organizations create an internal context which focuses on sustainability. Therefore it is proposed that:

Proposition 4: In sustainable companies, a significant part of innovations is related to the management of the diversity of human resources.

Table 6. Human resource management and environmental management: empirical evidence of other investigations' results.

<i>Investigation</i>	<i>Empirical evidence</i>
Brío, Fernández and Junquera (2007)	Based on an investigation in 110 Spanish companies with ISO 14001 certification, the authors conclude that top management's involvement, the strategic integration of the environmental dimension, as well as employees' motivation and participation, have a strong influence on companies' environmental performance.
Perron, Côte and Duffy (2006)	Based on research involving employees from two different companies, the authors check that, besides providing environmental training, organizations have to assess its efficacy, because it was noticed that there was no significant difference in the level of environmental knowledge between the group which received environmental training and the other which did not.
Sammalisto and Brorson (2008)	The authors reinforce the importance of environmental training and communication during the process of certification ISO 14001 in the University of Gävle, Sweden.
Triana and Ortolano (2005)	The relation between organizational learning and the performance of environmental management programs is analysed. Three different types of organizational learning in a company which implemented programmes to improve water quality were identified.
Wee and Quazi (2005)	Based on an investigation in 186 companies, practices of human resource management were considered crucial factors for environmental management in companies.
Zutshi and Sohal (2004)	This practical analysis indicates the dimensions of human resource management as the main group of critical factors for the success of the implementation and maintenance of environmental management systems.
Rothenberg (2003)	The main instruments and organizational mechanisms which favour employees' participation in projects related to the improvement of environmental performance in automobile assembly plants are analysed.
Ramus (2002)	A survey, involving employees from companies of 12 countries, shows the importance of human resource dimensions, such as reward systems, performance evaluation and organizational culture management, to create environmental innovation suggested by employees.
Ramus (2001)	An investigation in companies of 12 countries concluded that an organization's ability to produce environmental innovation depends on the organizational support and the human resource management that employees notice.
Kitazawa and Sarkis (2000)	A study in three companies reveals that there is a relation between the continuous reduction of pollution and the participation of employees who were trained in activities of environmental management in companies.

Proposition 5: In sustainable companies, most of the suggested innovations are a consequence of employees' environmental awareness.

Proposition 6: Human resource management practices have to be a moderator between cultural diversity and environmental management in order to improve the innovative performance of a company.

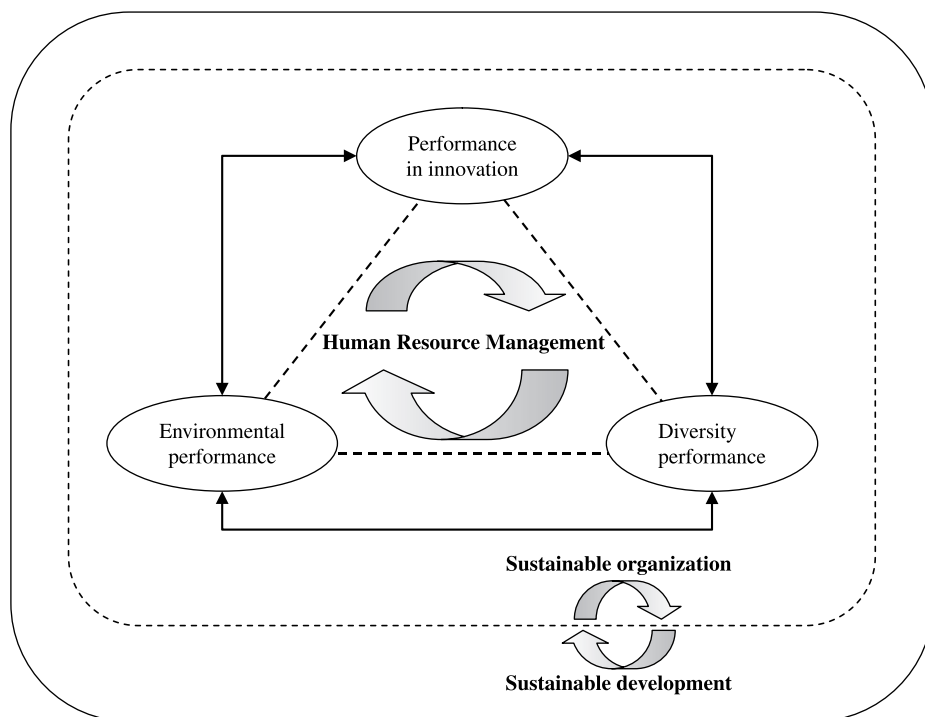


Figure 8. Centrality of human resource in sustainability.

Proposition 7: Companies with a high innovative performance have a greater ability to invest in practices of human resources that aim at improving the performance of a company in social and environmental areas.

Considering that companies' sustainable activities are increasingly recognized by customers and shareholders, they gain a reputation that will ensure a better economic performance, and they start a new cycle centred on human resource management needed for the improvement of environmental and social performance. Globally speaking, organizations contribute to a more sustainable development. Thus:

Proposition 8: Companies which start to operate in a more sustainable way with the support of human resource management improve their reputation with their consumers and shareholders.

Proposition 9: Sustainable companies begin to attract investments from various investors in the world and have an easier access to the sources of resources that can finance their projects with a concurrently innovative, social and environmental scope.

Proposition 10: The greater the population's awareness of the need of sustainable organizations is, the more competitive advantages the pioneering companies of this process are going to gain.

Due to the complexity of the studied theme and considering the multiple concepts, research propositions and complexity related to the relationship between human resource management and sustainable organizations, investigations in this area are recommended to combine the research methods of survey and fieldwork (Sieber 1973) in order to obtain more robust and reliable results. Moreover, propositions of research should include an analysis of the influence

of a company's size, the industry where it operates and the country of its headquarters, because these factors directly influence innovation management, management of cultural diversity and concern for the environment.

Acknowledgement

The authors would like to acknowledge the helpful comments of anonymous referees in an earlier version of this paper.

References

- Bakker, F.G.A., Groenewegen, P., and Hond, F. (2005), 'A Bibliometric Analysis of 30 Years of Research and Theory on Corporate Social Responsibility and Corporate Social Performance,' *Business & Society*, 44, 3, 283–317.
- Benschop, Y. (2001), 'Pride, Prejudice and Performance: Relations between HRM, Diversity and Performance,' *International Journal of Human Resource Management*, 12, 7, 1166–1181.
- Boudreau, J.W., and Ramstad, P.M. (2005), 'Talentship, Talent Segmentation and Sustainability: A New HR Decision Science Paradigm for a New Strategy Definition,' *Human Resource Management*, 44, 2, 129–136.
- Brío, J.A., Fernández, E., and Junquera, B. (2007), 'Management and Employee Involvement in Achieving an Environmental Action-Based Competitive Advantage: An Empirical Study,' *International Journal of Human Resource Management*, 18, 4, 491–522.
- Cano, C.P., and Cano, P.Q. (2006), 'Human Resources Management and its Impact on Innovation Performance in Companies,' *International Journal of Technology Management*, 35, 11–28.
- Chan, L.L.M., Shaffer, M.A., and Snape, E. (2004), 'In Search of Sustained Competitive Advantage: The Impact of Culture, Competitive Strategy and Human Resource Management Practices on Firm Performance,' *International Journal of Human Resource Management*, 15, 1, 17–35.
- Chew, I.K.H., and Sharma, B. (2005), 'The Effects of Culture and HRM Practices on Firm Performance: Empirical Evidence from Singapore,' *International Journal of Manpower*, 26, 6, 560–581.
- Colakoglu, S., Lepak, D.P., and Hong, Y. (2006), 'Measuring, HRM Effectiveness: Considering Multiples Stakeholders in a Global Context,' *Human Resource Management Review*, 16, 209–218.
- Coll, R.K., France, B., and Taylor, I. (2005), 'The Role of Models/and Analogies in Science Education: Implications from Research,' *International Journal of Science Education*, 27, 2, 183–198.
- Daily, B.F., and Huang, S. (2001), 'Achieving Sustainability Through Attention to Human Resource Factors in Environmental Management,' *International Journal of Operations & Production Management*, 21, 12, 1539–1552.
- Devine, F., Baum, T., Hearn, N., and Devine, A. (2007), 'Cultural Diversity in Hospitality Work: The Northern Ireland Experience,' *International Journal of Human Resource Management*, 18, 2, 333–349.
- Eisenstat, R. (1996), 'What Corporate Human Resources Brings to the Picnic: Four Models for Functional Management,' *Organizational Dynamics*, 25, 2, 7–22.
- Elenkov, D.S., and Manev, I.M. (2005), 'Top Management Leadership and Influence on Innovation: The Role of Sociocultural Context,' *Journal of Management*, 31, 381–402.
- Elkington, J. (1994), 'Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development,' *California Management Review*, 36, 2, 90–100.
- Elkington, J. (2006), 'Governance for Sustainability,' *Corporate Governance*, 14, 6, 522–529.
- Erhardt, N.L., Werbel, J.D., and Shrader, C.B. (2003), 'Board of Director Diversity and Firm Financial Performance,' *Corporate Governance*, 11, 2, 103–111.
- Fernández, E., Junquera, B., and Ordiz, M. (2003), 'Organizational Culture and Human Resources in the Environmental Issue: A Review of the Literature,' *International Journal of Human Resource Management*, 14, 4, 634–656.
- Fleury, M.T.L. (1999), 'The Management of Culture Diversity: Lessons from Brazilian Companies,' *Industrial Management & Data Systems*, 99, 3, 109–114.
- Ginsberg, J.M., and Bloom, P.N. (2004), 'Choosing the Right Green Marketing Strategy,' *MIT Sloan Management Review*, 48, 1, 79–85.
- Govindarajulu, N., and Daily, B.F. (2004), 'Motivating Employees for Environmental Improvement,' *Industrial Management & Data Systems*, 104, 4, 364–372.

- Greenwood, M.R. (2002), 'Ethics and HRM: A Review and Conceptual Analysis,' *Journal of Business Ethics*, 36, 261–278.
- Gupta, A.K., and Singhal, A. (1993), 'Managing Human Resources for Innovation and Creativity,' *Research Technology Management*, 36, 3, 41–48.
- Hailey, V.H. (2001), 'Breaking the Mould? Innovation as a Strategy for Corporate Renewal,' *International Journal of Human Resource Management*, 12, 7, 1126–1140.
- Hart, S.L., and Milstein, M.B. (2003), 'Creating Sustainable Value,' *Academy of Management Executive*, 17, 2, 56–69.
- Hunt, C.B., and Auster, E.R. (1990), 'Proactive Environmental Management: Avoiding the Toxic Trap,' *MIT Sloan Management Review*, 31, 2, 7–18.
- Ichniowski, C., Shaw, K., and Prennushi, G. (1997), 'The Effects of Human Resource Management Practices on Productivity: A Study of Steel Finishing Lines,' *The American Economic Review*, 87, 3, 291–313.
- Jabbour, C.J.C., and Santos, F.C.A. (2008), 'Relationships Between Human Resource Dimensions and Environmental Management in Companies: Proposal of a Model,' *Journal of Cleaner Production*, 16, 1, 51–58.
- Jiménez-Jiménez, D., and Sanz-Valle, R. (2005), 'Innovation and Human Resource Management Fit: An Empirical Study,' *International Journal of Manpower*, 26, 4, 364–381.
- Kaebnick, H., Kara, S., and Sun, M. (2003), 'Sustainable Product Development and Manufacturing by Considering Environmental Requirements,' *Robotics and Computer Integrated Manufacturing*, 19, 461–468.
- Katou, A.A., and Budhwar, P.S. (2006), 'Human Resource Management Systems and Organizational Performance: A Test of Mediating Model in the Greek Manufacturing Context,' *International Journal of Human Resource Management*, 17, 7, 1223–1253.
- Kitazawa, S., and Sarkis, J. (2000), 'The Relationship Between ISO 14001 and Continuous Source Reduction Programs,' *International Journal of Operations & Production Management*, 20, 2, 225–248.
- Koc, T. (2007), 'Organizational Determinants of Innovation Capacity in Software Companies,' *Computers & Industrial Engineering*, 53, 3, 373–385.
- Kontoghiorghes, C., Awbrey, S.M., and Feurig, P.L. (2005), 'Characteristics and Change Adaptation, Innovation and Organizational Performance,' *Human Resource Development Quarterly*, 16, 2, 165–211.
- Lau, C., and Ngo, H. (2004), 'The HR System, Organizational Culture, and Product Innovation,' *International Business Review*, 13, 685–703.
- Laursen, K., and Foss, N.J. (2003), 'New Human Resource Management Practices, Complementarities and the Impact on Innovation Performance,' *Cambridge Journal of Economics*, 27, 243–263.
- Mazzanti, M., Pini, P., and Tortia, E. (2006), 'Organizational Innovations, Human Resources and Firm Performance: The Emilia-Romagna Food Sector,' *The Journal of Socio-Economics*, 35, 123–141.
- McCloskey, J., and Maddock, S. (1994), 'Environmental Management: Its Role in Corporate Strategy,' *Management Decision*, 32, 1, 27–32.
- Miles, M.P., and Covin, J.G. (2000), 'Environmental Marketing: A Source of Reputational, Competitive and Financial Advantage,' *Journal of Business Ethics*, 23, 3, 299–311.
- Mintzberg, H. (1983), *Structure in Fives: Designing Effective Organizations*, Englewood Cliffs, NJ: Prentice Hall.
- Ng, E.S.W., and Burke, R.J. (2005), 'Person-Organization Fit and the War for Talent: Does Diversity Management Make a Difference?,' *International Journal of Human Resource Management*, 16, 7, 1195–1210.
- Ng, E.S.W., and Tung, R.L. (1998), 'Ethno-Cultural Diversity and Organizational Effectiveness: A Field Study,' *International Journal of Human Resource Management*, 9, 6, 980–995.
- Perron, G.M., Côte, R.P., and Duffy, J.F. (2006), 'Improving Environmental Awareness Training in Business,' *Journal of Cleaner Production*, 14, 6–7, 551–562.
- Pless, N.M., and Maak, T. (2004), 'Building an Inclusive Diversity Culture: Principles, Processes and Practice,' *Journal of Business Ethics*, 54, 2, 129–147.
- Porter, M.E., and Linde, C.V.D. (1995), 'Green and Competitive: Ending the Stalemate,' *Harvard Business Review*, 73, 5, 120–134.
- Preston, L. (2001), 'Sustainability at Hewlett-Packard: From Theory to Practice,' *California Management Review*, 43, 3, 26–37.

- Pujari, D., Wright, G., and Peattie, K. (2003), 'Green and Competitive: Influences on Environmental New Product Development Performance,' *Journal of Business Research*, 56, 657–671.
- Ramus, C.A. (2001), 'Organizational Support for Employees: Encouraging Creative Ideas for Environmental Sustainability,' *California Management Review*, 43, 3, 85–105.
- Ramus, C.A. (2002), 'Encouraging Innovative Environmental Actions: What Companies and Managers Must Do,' *Journal of World Business*, 37, 151–164.
- Richard, O. (2000), 'Racial Diversity, Business Strategy, and Firm Performance: a Resource-based View,' *Academy of Management Journal*, 43, 2, 164–177.
- Rosen, C.M. (2001), 'Environmental Strategy and Competitive Advantage: An Introduction,' *California Management Review*, 43, 3, 9–16.
- Rosenblueth, A., and Wiener, N. (1945), 'The Role of Models in Science,' *Philosophy of Science*, 12, 4, 316–321.
- Rothenberg, S. (2003), 'Knowledge Content and Worker Participation in Environmental Management at NUMMI,' *Journal of Management Studies*, 40, 7, 1783–1802.
- Sammalisto, K., and Brorson, T. (2008), 'Training and Communication in the Implementation of Environmental Management Systems (ISO 14.001), A Case Study at the University of Gävle, Sweden,' *Journal of Cleaner Production*, 15, 3, 299–309.
- Schuler, R.S., and Jackson, S.E. (1987), 'Linking Competitive Strategies with Human Resource Management,' *Academy of Management Executive*, 1, 3, 207–210.
- Schuler, R.S., and Jackson, S.E. (2005), 'A Quarter-Century Review of Human Resource Management in the US: The Growth in Importance of the International Perspective,' *Management Review*, 16, 1, 1–25.
- Shipton, H., Fay, D., West, M., Patterson, M., and Birdi, K. (2005), 'Managing People to Promote Innovation,' *Creativity and Innovation Management*, 14, 2, 118–128.
- Sieber, S.D. (1973), 'The Integration of Survey Research and Field Work: Contributions to Data Collection,' *American Journal of Sociology*, 78, 6, 1335–1359.
- Stone, L.J. (2000), 'When Case Studies are Not Enough: The Influence of Corporate Culture and Employee Attitudes on the Success of Cleaner Production Initiatives,' *Journal of Cleaner Production*, 8, 353–359.
- Stone, L.J. (2006a), 'Limitations of Cleaner Production Programmes as Organizational Change Agents. I. Achieving Commitment and On-Going Improvement,' *Journal Of Cleaner Production*, 14, 1–14.
- Stone, L.J. (2006b), 'Limitations of Cleaner Production Programmes as Organizational Change Agents. II. Leadership, Support, Communication, Involvement and Program Design,' *Journal of Cleaner Production*, 14, 15–30.
- Subeliani, D., and Tsogas, G. (2005), 'Managing Diversity in the Netherlands: A Case Study of Rabobank,' *International Journal of Human Resource Management*, 16, 5, 831–851.
- Terziovski, M., and Morgan, J.P. (2006), 'Management Practices and Strategies to Accelerate the Innovation Cycle in the Biotechnology Industry,' *Technovation*, 26, 545–552.
- Tingstrom, J., and Karlson, R. (2006), 'The Relationship Between Environmental Analyses and the Dialogue Process in Product Development,' *Journal of Cleaner Production*, 14, 15/16, 1409–1419.
- Triana, E.S., and Ortolano, L. (2005), 'Influence of Organizational Learning on Water Pollution Control in Colombia's Cauca Valley,' *Water Resources Development*, 21, 3, 493–508.
- Tsai, C. (2006), 'High Performance Work Systems and Organizational Performance: An Empirical Study of Taiwan's Semiconductor Design Firms,' *International Journal of Human Resource Management*, 17, 9, 1512–1530.
- Vickers, M.R. (2005), 'Business Ethics and the HR Role: Past, Present, and Future,' *Human Resource Planning*, 28, 1, 26–32.
- Vickers, M.R., and Bear, D. (2006), 'Building and Sustaining a Culture that Supports Innovation,' *Human Resource Planning*, 29, 3, 9–19.
- Vuontisjärvi, T. (2006), 'Corporate Social Reporting in the European Context and Human Resource Disclosures: An Analysis of Finnish Companies,' *Journal of Business Ethics*, 69, 331–354.
- Walsworth, S., and Verma, A. (2007), 'Globalization, Human Resource Practices and Innovation: Recent Evidence from the Canadian Workplace and Employee Survey,' *Industrial Relations*, 46, 2, 222–240.
- Weaver, G.R., and Treviño, L.K. (2001), 'The Role of Human Resources in Ethics/Compliance Management: A Fairness Perspective,' *Human Resource Management Review*, 11, 113–134.
- Wee, Y.S., and Quazi, H.A. (2005), 'Development and Validation of Critical Factors of Environmental Management,' *Industrial Management & Data Systems*, 105, 1, 96–114.
- Wehrmeyer, W. (1996), *Greening People: Human Resource and Environmental Management*, New York: Greenleaf.

- Wentling, R.M., and Palma-Rivas, N. (2000), 'Current Status of Diversity Initiatives in Selected Multinational Corporations,' *Human Resource Development Quarterly*, 11, 1, 35–60.
- Wilcox, T. (2006), 'Human Resource Development as an Element of Corporate Social Responsibility,' *Asia Pacific Journal of Human Resources*, 44, 2, 184–196.
- Wilkinson, A., Hill, M., and Gollan, P. (2001), 'The Sustainability Debate,' *International Journal of Operations & Production Management*, 21, 12, 1492–1502.
- Wimbush, J.C. (2006), 'Spotlight on Human Resource Management,' *Business Horizons*, 49, 433–436.
- Wright, P., Ferris, S., Hiller, J., and Kroll, M. (1995), 'Competitiveness Through Management of Diversity: Effects on Stock Price Valuation,' *Academy of Management Journal*, 38, 1, 272–287.
- Wright, P.M., and Snell, S.A. (1991), 'Toward an Integrative View of Strategic Human Resource Management,' *Human Resource Management Review*, 1, 3, 204–224.
- Wu, C., and Chiang, Y. (2007), 'The Impact on the Cultural Diversity to Employees' Job Satisfaction between Mainland China and Taiwan: A Comparison of Taiwanese Invested Companies,' *International Journal of Human Resource Management*, 18, 4, 623–641.
- Zutshi, A., and Sohal, A. (2004), 'Adoption and Maintenance of Environmental Management Systems: Critical Success Factors,' *Management of Environmental Quality: An International Journal*, 15, 4, 399–419.