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An Employee-Level Study of the Effects of Human Resource Management on Environmental Performance

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Abstract

This research looked at how strategic human resource management affects environmental performance, as well as how internal environmental concern, organizational citizenship behavior, and environmental performance are connected. The novel contribution of this study was to establish a connection between HRM and EM in China. Data comprised of 151 matching question- naires from senior management team members, chief executive officers, and frontline workers. The primary findings show that internal environmental concern moderates the effect of strategic human resource management on organizational citizenship behavior for the environment, and that corporate citizenship behavior for the environment mediates the relationship between strategic HRM and environmental performance.

Introduction

Contemporary firms are faced with many pressures from stakeholders and shareholders to develop environmentally responsible activities (Molina-Azor´ın et al. 2009). Envi- ronmental performance reflects an output demonstrating the degree to which firms are committed to protecting the natural environment (hereafter, ''environment''). Environ- mental performance can be evaluated by a set of indicators such as low environmental releases, pollution prevention, waste minimization, and recycling activity (Lober 1996), and it may be increased by the implementation of envi- ronmental management system (EMS), such as ISO 14001 certification, a tool requiring high interactions between human resource management (HRM) and environmental management (EM) (del Br´ıo et al. 2007). Some recent papers illustrate the cross-fertilization between EM andHRM for the achievement of environmental performance. For example, Jabbour and Santos (2008a, b) and Jabbouret al. (2008) examined four organizations all holding the ISO 14001 certification, and reported that the best results interms of environmental performance were observed in the organization (among the four studied) where employees were the most stimulated by the use of appropriate HRM practices at each stage of the manufacturing processes.

By establishing the important role played by HRM in environmental performance issues, findings obtained by Jabbour and his colleagues reflect the efforts that have been made in this area since the middle of the 1990s. Over the last 15 years, scholars specialized in EM have directed their attention to HRM and have highlighted the impor- tance of individual green initiatives in the workplace (e.g., Branzei et al. 2004; Daily et al. 2012; Fernández et al. 2003; Florida 1996; Hart 1995; Jabbour and Santos 2008a; b; Jabbour et al., in press; Jiang and Bansal 2003; King andLenox 2001; Kitazawa and Sarkis 2000; Walley and Stubbs 2000). More recently, some HRM scholars have proposed a better integration of environmental issues (Jackson et al. 2011; Jackson and Seo 2010; Renwick et al.2013; Wagner 2012). Despite calls for more research into the linkage between HRM and EM (Muller-Camen et al. 2010; Renwick et al. 2012), recent special issues on the relationship between human aspects and environmental management in Brazilian organizations published in the *International Journal of Environment and Sustainable Development* (2012) and on the HRM's role in sustain- ability in *Human Resource Management* (2012), a recent edited collective book (Jackson et al. 2012), and someexisting studies showing how firms diminish their envi- ronmental influence when employees take initiatives intheir job in favor of the environment (Ramus and Steger 2000), to date, few empirical works have explicitly addressed the extent to which strategic HRM (SHRM) stimulates frontline employees' friendly environmental behaviors, enabling firms to improve their environmental performance.

The purpose of this research is to examine the link between HRM and EM by highlighting how employeesare involved at their own level in helping their companies become greener. The paper reports an investigation con- ducted in China. As the world's largest emerging country, China represents a critical area to which researchers should pay more attention (Peng 2004; Chow and Chen 2012). As environmental issues have become an urgent problem worldwide, Chinese firms today are facing more challenges than their Western counterparts on many issues of EM. For instance, environmental pollution in China is much more serious than in any other countries with advanced economies. To deal with such pollution,the Chinese government has implemented various legis- lative regulations. Thus, conducting a study for environ- mental protection should provide useful knowledge for

firms to do better in EM. In so doing, the present study makes three main contributions. First, as stated above, there is a need to link EM and HRM in order to better understand how firms are able to achieve environmental performance. Jackson and Seo (2010) have noted that ''the topic of environmental sustainability is not reflected in the research agendas of most areas of management scholarship. The field of [HRM] is one of the minimally engaged areas of specialization'' (p. 278). By providing original data, the present study helps to fill this gap. Second, although environmental literature acknowledgesthe role played by frontline employees in preventing the negative impact of their actions toward the environmentin their job (Hanna et al. 2000), or in supporting the implementation of environmental system (Ramus and Steger 2000), the specific relationship with environmental performance remains unclear. The present study extends prior research by examining the extent to which pro-environmental behaviors at work act as a key explanatory mechanism in the relationship between SHRM practices and environmental performance. Third, whereas previous findings have highlighted that the lack of managers' tendency to support environmental issues may be a seri-ous source of disruption (Govindarajulu and Daily 2004; Ramus 2001), very little has been said about the influence of managers who are convinced of the necessity to act in favor of the environment. In this study, it is assumed that managers can play an active role. In particular, we focuson internal environmental concern as a possible moderating variable in the relationship between SHRM and pro- environmental behavior at work.The present paper begins with a brief review of theliterature, followed by a presentation of the method and results. The findings are discussed in light of the relevant literature.

Theoretical Background and Hypotheses Development

This paper proposes to test a research model (see Fig. 1) in which SHRM, organizational citizenship behaviors for the environment, and internal environmental orientation areidentified as important antecedent variables for achieving environmental performance.Current literature on EM recognizes that in order toachieve environmental sustainability objectives, organiza- tions can use appropriate HRM practices to stimulate their employees. To this end, great efforts have been made to explore what drives employees to engage in pro-environ- mental behaviors that help their organization to become greener. Fifteen years ago, Wehrmeyer (1996) edited oneof the first books attempting to connect the two fields of EM and HRM. Wehrmeyer (1996) indicated that the lackof integration between EM and HRM:demonstrates the somewhat na¨ıve belief that current managerial approaches and uses of technology to solve environmental problems are doing enough to address the issue of environmental protection. This approach reinforces, and is a product of, a techno- logical optimism that may assist organisations in their economic performance, but does not create a path
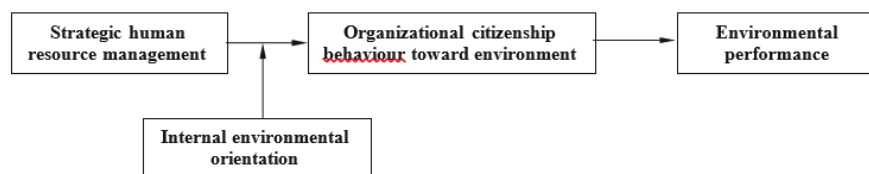

Fig. 1 The conceptual model of the study

towards sustainable development as it does not address ethical and attitudinal change. This lack of integration is, curiously, also detrimental to the eco- nomic success of organisations, as it negates the opportunities that can be gained from a more ethical and participative approach to environmental and staffmanagement. The greatest benefits—namely, higher staff motivation, lower turnover, a greater degree of job satisfaction, more innovations and improved customer services—are due not to improved tech-nology but people. (p. 28). This paragraph by Wehrmeyer (1996) sounds like a call to better integrate EM and HRM and highlights some possible issues that could be investigated by futureresearch. What has been done since the publication of this handbook? While theoretical answers to this question may be found in two recent papers that propose a research agenda (Jackson and Seo 2010; Renwick et al. 2013), somepreliminary data have been reported recently (Jabbour and Santos 2008b; Wagner 2012). Wagner (2012) suggested elevating environmental management considerations to a strategic HR level.

Although early studies in the field of SHRM can be localized in the 1920s (Lengnick-Hall et al. 2009),reflecting a long tradition of research, Jackson and Seo (2010) indicate that the contribution of SHRM to the field of environmental sustainability is a new topic. SHRM places the highest priority on linking HRM with the stra- tegic goals and objectives of a firm in order to achieve its success (Truss and Gratton 1994). In this way, SHRMregards employees as a source of competitive advantage (Huselid 1995; Lengnick-Hall et al. 2009; Swailes 2002). Even so, attempting to connect SHRM and EM reflects a somewhat new topic; previous works can be found that have focused on the implementation of practices to help theworkforce to become greener by adopting appropriate actions in their job (Daily and Huang 2001; Milliman and Clair 1996; Wood 1993).

Milliman and Clair (1996) were among the first to propose an exploration of the role of HRM in environmental management. They built a ''Model of Environ- mental HRM practices'' involving four main steps. First, a firm needs an environmental vision as a guideline for shaping its strategy. Second, employees must be trained to understand the firm's philosophy of environmental vision through its goals and strategy. Third, employee environ- mental performance needs to be evaluated using an appropriate appraisal system in line with these goals. Four, reward programs should be defined, recognizing pro-envi- ronmental activities carried out in the workplace. Millimanand Clair's (1996) model of environmental HRM practices points to the importance of human resources in enablingthe implementation of a firm-specific strategy toward the environment.

Training, appraisal, and rewards contribute to develop employees' motivation to endorse the firm's environmental concerns, enabling it to be more competitive and to reach environmental standards (Govindarajulu and Daily 2004). Training, appraisal, and rewards are often reused in sub- sequent works (e.g., Daily and Huang 2001; Jabbour et al. 2012; Jabbour 2011; Teixeira et al. 2012). Over the years, several other HRM practices have been progressively added. A recent literature review by Renwick et al. (2013) provides valuable insight into the evolution of this field. Renwick et al. (2013) summarized three core components of the HR aspects of EM. The first core component is related to the development of green abilities and implies practices such as selecting, recruiting, training and devel- oping environmental knowledge, and encouraging EM leadership. The second core component is related to the motivation of green employees and implies appraisal and rewards. The third core component is related to the stim- ulation of employee involvement and implies valorizing tacit knowledge, empowering employees, and creating a green organizational culture. Neglected by Renwick et al. (2013), further works have examined teamwork (Hannaet al. 2000; Jabbour et al., in press; May and Flannery 1995) and work–life balance (Muster and Schrader 2011)as two interesting additional practices for achieving sus- tainability. Teamwork presents several advantages. It can promote friendly competition among members, as well as sharing of tacit knowledge (Boiral 2002). In addition, Hanna et al. (2000) argued that ''worker concern for the environment is often a factor in employee morale and can be highlighted by participation in team projects that have environmental goals'' (p. 154). Finally, Muster andSchrader (2011) have called attention to the potential of work–life balance as HRM practices. Their main argument is that ''it is important to acknowledge that environmen- tally relevant attitudes and behavior are not learned exclusively at the workplace, but also in private life'' (p. 141). Taking account of green work–life balance offers a set of advantages for firms. From our point of view, amongother advantages (see the developments on pages 148–152), by transferring their environmental concerns from the private domain to the organizational domain, people are more prone to develop pro-environmental behavior in the workplace. As reported earlier, since Mil- liman and Clair (1996), HRM practices dedicated to environmental issues have been refined. However, it issurprising to note the scarcity of research attempting to linkHRM practices to environmental issues.

In short, it is often postulated that HRM contributes to the creation of an organizational setting that supports environmental performance. Unfortunately, despite the studies mentioned above, data that support this contention remain scarce. Our review of pertinent literature provides some useful insights. Firms concerned with the protection of the natural environment cannot act without the support of their staff. According to Wright et al. (2001), the SHRMfinality is, first, to manage competence in terms of knowledge, skills, and abilities, among others things, and second, to direct behaviors by encouraging certain desir- able behaviors on the job. In addition, each gesture, how- ever insignificant in appearance (e.g., turning off the light before leaving a room), each individual on-the-job decisioncontributes to the achievement of environmental perfor- mance. Often, these decisions concern discretionary behaviors outside the control of the HRM system. It has been argued that pro-environmental behaviors (i.e., OCBE)may be stimulated by employers using SHRM practices (Jabbour and Santos 2008a; Jackson and Seo 2010), and that these behaviors lead to environmental performance(Daily et al. 2009). The above propositions have not yet been empirically tested. Thus, we put forward the follow- ing hypotheses:

Hypothesis 1 SHRM has a positive impact on OCBE.

Hypothesis 2 OCBE has a positive impact on environ- mental performance.

Hypothesis 3 OCBE mediates the relationship between SHRM and environmental performance.

The foregoing discussion concerning H1 suggests that SHRM positively influences OCBE. On the basis of our research model, we further propose environmental orien- tation as a moderator of the relationship between SHRM and employees' pro-environmental behaviors. Environ- mental orientation reflects the degree to which firms are committed to protecting the natural environment, and derives from their willingness to recognize and to integrate environmental concerns into the business strategy(Banerjee et al. 2003). Based on empirical work, Banerjee (2002) reported that environmental orientation may be focused internally or externally. Whereas external envi- ronmental orientation reflects how external community such as customers, commercial partners, or citizens can be affected by a firm's decisions; internal environmental ori- entation reflects the degree of importance given by the firmto environmental issues, as evidenced by the firm defininga clear policy statement, shaping values about the impor- tance of preserving the environment, or efforts made by managerial staff toward employees to help them to protect the environment. Banerjee et al. (2003) found that internal environmental orientation and external environmental orientation are related only to environmental corporate

Table 1 Descriptive statistics

Variables	1	2	3	4	5	6	7	8
1. SHRM	0.85							
2. OCBE	0.28**	0.81						
3. Internal environmental orientation	0.48**	0.37**	0.85					
4. Environmental performance	0.23**	0.32**	0.06	0.92				
5. Firm age	−0.07	−0.01	−0.08	0.04	–			
6. Firm size[a]	0.11	−0.07	0.16	0.05	0.05	–		
7. Ownership structure[b]	0.07	−0.12	−0.08	−0.03	0.23**	0.14	–	
8. Internationalization[c]	0.08	0.18*	0.22**	−0.06	−0.18*	−0.18*	0.01	–
Mean	3.93	3.84	3.82	3.88	8.58	1.70	0.64	0.47
SD	0.63	0.33	0.60	0.64	4.98	0.69	0.48	0.50

Diagonal elements are the square roots of average variance extracted

[a] Coding: ''small-sized'' = 1; ''medium-sized'' = 2; ''large-sized'' = 3

[b] Coding: ''state owned'' = 1; ''non-state owned'' = 0

[c] Coding: ''Internationalization'' = 1; ''Non-Internationalization'' = 0

** p B 0.01; * p B 0.05 (two-tailed)

strategy and to environmental marketing strategy, respec- tively. Given that the purpose of the present paper focuses on corporate strategy rather than on marketing strategy, we will only look at internal environmental orientation.

Research suggests that top management develops con- cern about the environment when they perceive market pressures to do so (Buil-Carrasco et al. 2008). Adopting an environmental orientation is an appropriate way of dealing with these pressures. For example, it has been found that internal environmental orientation drives firm performance via both environmental corporate strategy practices and environmental marketing strategy practices (Chan 2010). Less attention has been paid to how HRM practices may be influenced by internal environmental orientation. Managers' beliefs about environmental issues seem to be crucial in the process of implementing HRM practices. Since they hold the discretionary authority allowing them to act with great autonomy, managers are able to push (or not) HRM practices to improve employee efficiency (Paillé et al. 2011). Empirical evidence supports this contention (Jackson et al. 2011). Banerjee (2002) suggested that environmental orientation is viewed as a strategic issue only when the managerial staff believe that the business strategy should take into account environ-mental concerns.

Methods

A wide range of methods has been used for examining the relationship between HRM and EM. While some research has employed case studies (e.g., Teixeira et al. 2012), others have conducted correlational or predictive research (e.g., Jabbour et al., in press-a; Paillé et al., in press; Wagner 2012). In accordance with the recent call by Renwick et al. (2013) to conduct quantitative research in nature (see Table 2 in their paper), the present study uses mediation and moderation techniques to test its hypotheses.

Conclusions

In this employee-level study, we developed a conceptual model to understand the relationship between SHRM and environmental performance. Analysis of the results con- firmed that OCBE mediates the process through which SHRM has an impact on environmental performance. This leads to a need to focus more on selecting, training, and rewarding employees for their environmental friendly practices in the workplace in order to generate an envi- ronmental protection culture beneficial to a firm's envi- ronmental performance. In addition, there is a need to undertake trainings about the environment related to rele- vant topics that enable the overall staff (top, senior, and middle managers, and workforce) to carry out integration between HRM and EM. Universities are also important stakeholders that could offer sustainability teaching cour- ses or programs (see de Castro and Jabbour, in press). Finally, by examining the effect of internal environmental orientation, this study was able to show that environmental orientation influences the relationship between SHRM and OCBE. This points to the critical effect of strategic ori- entation in directing and affecting the implementation of a firm's SHRM.

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