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Title

TRANSFORMING HUMAN RESOURCE MANAGEMENT INTO A STRATEGIC PARTNER

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1. Introduction

1.1 Thesis objectives, structure, and findings

The main objective of this thesis is to examine the effects of HRM systems and practices on various outcomes at different levels within organizations. The existing research continuously emphasizes the strategic role of human resource management (HRM) in accomplishing business objectives and organizations' survival and success in the current turbulent business environment. Hence, this thesis, in particular, includes three distinct qualitative and quantitative studies that examined different forms of HRM such as high-performance work practices and HR systems on various outcomes across levels within organizations. For example, corporate entrepreneurship and employee retention at the organizational level and employee creativity at the individual level. These studies were carried out using diverse research methods that encompass systematic literature review (1st study), fuzzy-set Qualitative Comparative Analysis (2nd study), and mixed method (3rd study) (e.g., questionnaire survey and multiple-case studies). All of these methods yielded valuable theoretical insights that advance our understanding of the topics covered. Further, practical implications were offered to help managers and practitioners to achieve success and competitive advantage.

The first research paper "The Human Resource Management-Corporate Entrepreneurship Nexus: A Systematic Quantitative Literature review" came as a response to the increasing calls to open the black box to understand what is happening in between HRM and corporate entrepreneurship. More specifically, we aimed at exploring the mediating mechanisms that underlie this relationship and boundary conditions that moderate this link, which warranted the benefits of systematically reviewing the relevant literature that examined the HRM-CE nexus. To do so, a systematic quantitative literature review (Pickering & Byrne, 2014) has been undertaken to achieve the paper goal. This methodology was intentionally chosen to conduct the literature review for many reasons. First, it is suitable for emergent research areas and for early career researchers. Second, it is preferred as a method to recap the diffusion of existing literature and spotting potential research gaps, as it is reliable, reproducible, comprehensive, structured, and provides a clear structure for the literature selection process (Tranfield, Denyer, & Smart, 2003).

Third, it quantifies and measures the amount (number of papers) of research within different components of a chosen field.

This review revealed several insightful findings and themes relevant to the HRM-corporate entrepreneurship nexus. Firstly, it provided a more precise view of the most influential HRM practices for corporate entrepreneurship. It identified four HRM practices that were widely reported as the best practices; selective staffing, intensive training and development, extensive compensation and rewards, and employee empowerment and participation that are mostly offered in high-performance HR practices or high-commitment work systems for boosting CE in companies. Second, it unveiled that resource-based and social exchange theories are dominant frameworks when studying the intersection between HRM and CE. The third contribution is the suggestion of an integrated moderated mediation model that depicts the mediating mechanisms and moderating factors of HRM-corporate entrepreneurship relationship.

The second research paper "Configurational paths of High-performance Work Practices to employee retention through Fuzzy-set Qualitative Comparative Analysis" discussed a long-standing issue that frequently put challenges for organizations and HR departments; employee retention. It, particularly, speaks about the role of high-performance work practices in retaining valuable and talented employees. It is widely recognized that corporate entrepreneurial activities such as innovation, venturing, and strategic renewal take a long time to show results (Guth & Ginsberg, 1990). Besides that, the success of these entrepreneurial initiatives partially hinges on individuals since they carry out an organization's mission and strategy through their behaviors (Collins & Smith, 2006). Companies thus are highly recommended to retain their high-caliber employees to successfully achieve their objectives. This study primarily sought to explore meaningful configurations of high-performance work practices that can be harnessed for employee retention. We deliberately chose the high-performance work practices as they generated a considerable attention for their hypothesized role in enhancing organizational performance.

This research was a collaborative effort with my supervisor Prof. Francesca Visintin, Prof. Daniel Pittino, and Prof. Dietmar Sternard from Carinthia University of

Applied Sciences, Austria. It is noteworthy that it is under review in Personnel Management and we received minor revision comments from the first round. To obtain the preset intended goal, the configurational approach (Delery & Doty, 1996) was employed and operationalized by the fuzzy-set qualitative comparative analysis (fsQCA) (Fiss, 2007, 2011; Ragin, 2008) as they correspond to each other. Currently, the configurational approach along with fsQCA are trending in Europe and America for their effectiveness in handling the causal complexity that surrounds social phenomena. Grounded on data from 232 top managers (managing directors and members of executive boards) of manufacturing companies from Austria and Hungary, five equifinal configurations of different high-performing skill, motivation, and opportunity-enhancing practices that help to retain employees effectively were identified. All of the resultant configurations corroborated our derived propositions.

The findings suggested that there are multiple complex configurations of HPWPs may lead to high employee retention (equifinality) as shown by all configurations. Also, they confirmed that there is no single HR practice necessary or sufficient by itself to achieve employee retention as none of the practices shows to be neither necessary nor sufficient to achieve retention. Another interesting finding showed by the configurations 2-5 is that any skill-enhancing practice needs to be configured with one or two of motivation-enhancing practices for effective employee retention (conjunctural causation). Furthermore, the resultant configurations confirmed the principle of asymmetric causation which explains that the same HR practice may have a positive or negative influence on employee retention contingent to the other practices in the configuration (Both the presence or the absence of practices may lead to retention).

Besides that, all of those configurations were discussed to explain how companies can utilize high-performance work practices to retain their employees based on their distinctive organizational approaches to HR strategies and policies. For example, we found that *configuration 1* suits firms that invest in democratic/ participative elements such as promoting voice, perceptions of fairness and mechanisms for the resolution of conflicts to achieve retention. *Configuration 2* is well suited for companies that rely on the external labor market to recruit talented employees. Where employees are motivated

mainly by extensive compensation and career development, thus, low intention to leave which in turn could affect retention rates. For firms that privilege the internal labor market and adopt intensive training practices, configuration 3 could be appropriate and effective. Those companies aimed at developing human capital related to their organizational needs and committed staff. Therefore, career development, compensation, performance appraisal, and participation need to be jointly adopted to avoid the loss of the internally grown human capital. Lastly, the configurations 4 and 5 fit organizations who prioritize the congruence and cultural dimensions with significant levels of knowledge and value sharing and a primary role of identity and cohesion. Participation complements community models (e.g. joint decision making).

As for the third-year research paper "The effects of cross-level interactions between HR systems and relational climates in predicting employee creativity: A multi-method study", it was carried out through my research exchange period abroad at the faculty of Economics at the University of Ljubljana 2017/2018. Again it is a collaborative effort with my co-supervisor at the University of Ljubljana Prof. Matej Černe and Prof. Saša Batistic from Tilburg University in the Netherlands. This study developed a multilevel model to examine the cross-level effects of interactions between HR systems and relational climates in predicting contexts for employee creativity.

We employed a mixed-method design and obtained data from survey questionnaires 282 employees nested in 69 teams in European companies located in the Netherlands and we complemented our study with two exploratory case studies within Slovenian companies. We selected employee creativity as the outcome of our study since it is deemed as the seeds for innovation which is one of the most important corporate entrepreneurial activities. We also emphasized the organizational context influential role and synthesized literature of creativity, HR systems, and relational climates. To examine our model the Hierarchical Linear Modeling (random coefficient modeling) (Raudenbush, Bryk, & Congdon, 2011) to test three particular aspects of our model (Hox, 2010). First, the existence of a multilevel structure. Second, the cross-level effects of relational climates and HR systems on individual creativity, and lastly, the interaction effects between relational climates, HR systems and individual creativity.

Our findings suggest noteworthy insights that the interactions effect between commitment-HR and communal-sharing climate are non-significant for employee creativity. Likewise, the interaction between compliance-HR and market-pricing climate. However, only a commitment-based HR system has been shown to be important to boost employee creativity. Nonetheless, based on the case studies findings, it is not sufficient by itself, instead, the relational climate that permeates the workplace is also vital for creative ideas generation. From a practical standpoint, this study should assist companies to model and structure the optimum context settings to streamline employee creative idea generation that ultimately enables to channel those ideas into actual processes or products.

2.1 Main contribution of the thesis

The three research studies have been carried out to better understand the influential role of HRM systems and practices on different performance outcomes within organizations starting from corporate entrepreneurship and employee retention at the organizational/ unit level to employee creativity at the individual level. Anchoring on different approaches and diverse methods to achieve the objectives of thesis papers suggested theoretical insights that can advance our understanding of the topics discussed and studied. Further, the papers are likely to provide managers and executives with practical insights to develop their companies.

To illustrate, in the first paper, a systematic quantitative literature review was employed as the link between HRM-corporate entrepreneurship is still growing. This method also allowed us to define what, when, and where the existing research of HRM and corporate entrepreneurship was carried out. Consequently, helps to determine where future research is needed. For the second paper, even though employee retention is a well-addressed topic in the relevant literature, we offered it from a configurational lens which of course resulted in theoretical and practical implications. The third-year paper performed the Hierarchical Linear Modeling to best examine the theoretical model proposed. Whereas the interviews within the case-study approach were analyzed in a descriptive manner.

In conclusion, HRM is important for companies who seek to advance their corporate entrepreneurial activities, retain talented and high-caliber employees and enhance their creativity. Evidence showed that transforming HRM function into a strategic partner help organizations in managing their workforce effectively. In other words, organizations and HR departments are recommended and encouraged to align HRM with their strategic objectives to survive and sustain a competitive advantage (Barney & Wright, 1998). This is likely to be achieved through adoption of strong HR systems (Bowen & Ostroff, 2004) that include bundles and configurations of HR practices, more specifically, high-performance work practices which clearly communicate signals and messages to individuals within firms about organizational goals and expected behaviors and attitudes.

For example, in the case of the second paper, we explained how the alignment of each configuration with company-level approaches to HRM lead to high levels of employee retention. Likewise, in the third paper which confirmed the effectiveness of designing high-commitment work practices to further enhance employee creativity. We therefore, conclude that high-performance or commitment-based HRM as a designed strategic partner is likely to produce desired outcomes for contemporary firms. More contributions are further detailed in the next sections of the thesis.

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THE HUMAN RESOURCE MANAGEMENT-CORPORATE ENTREPRENEURSHIP NEXUS: A SYSTEMATIC QUANTITATIVE LITERATURE REVIEW

Abstract

This review analyzes empirical studies that explicitly examined the role of human resources management in fostering corporate entrepreneurship to determine the most effective HRM practices that enhance firms' entrepreneurship with an emphasis on the underlying mediating mechanisms and boundary conditions that moderate this relationship. A total number of 27 empirical research papers were identified in English peer-reviewed. Review analysis unfolded four high-performance work practices; selective staffing, extensive training, intensive compensation and rewards, and employee empowerment and participation. These practices were widely reported to have the strongest effects on encouraging corporate entrepreneurship. Furthermore, based on the extant empirical evidence, we suggested a theoretical moderated mediation model that explains the relationships between HRM, corporate entrepreneurship, organizational learning capability, and represents the entrepreneurial culture as a boundary condition. Theoretical contributions and implications along with future research paths are discussed.

Keywords

High-performance work practices, corporate entrepreneurship, systematic quantitative literature review, organizational learning capability, entrepreneurial culture

1. Introduction

Over the last four decades, corporate entrepreneurship (CE) has been introduced as a critical success path for firms operating in hyper-competitive markets that ruled by uncertainty and rapid technological evolutions (Ireland, Covin, & Kuratko, 2009; Kuratko, Hornsby, & Hayton, 2015). Prior research argued that CE could provide organizations with enduring outcomes, like rejuvenating performance, improving profitability and financial outcomes, and ultimately maintaining competitive advantage (Barney, 1995; Corbett et al., 2013; Schmelter, Mauer, Börsch, & Brettel, 2010). Guth & Ginsberg (1990) discussed that CE, basically, implies continuous development through a set of three organizational activities that are; 1) Innovation, "the birth of new businesses" within existing organizations (e.g. product, service or process); 2) Venturing, the creation of a new business either internal (e.g., business unit) or external (e.g., joint ventures, spinoffs). Nonetheless, the new business may not necessarily lead to form a new autonomous business unit (Narayanan, Yang, & Zahra, 2009), and 3) Strategic Renewal, the corporate entrepreneurial activity which transforms and reshapes organizations through the reconfiguration of strategies, structures or business models to alter how they compete with their competitors (Hayton, 2005; Hayton & Kelley, 2006).

Hence, identifying factors that drive CE activities continues to be a pressing necessity due to the constant demand for organizations to renew and differentiate their products and services (Hornsby, Kuratko, Holt, & Wales, 2013). Hayton (2005) declared that CE processes fundamentally depend on organizations' capability to learn through exploring new knowledge, exploiting existing knowledge, and integrating them together. Premised on that organizational success is partially determined by individuals since they carry out an organization's mission and strategy through their behaviors (Collins & Smith, 2006), HRM practices, particularly, those so-called "high-performance work practices" (HPWPs) generated a considerable attention for their hypothesized role in enhancing CE through forming human and social capital (Amberg & McGaughey, 2016; Castrogiovanni, Urbano, & Loras, 2011). Therefore, examining the HRM-CE linkage has evolved into a lively field of investigation.

Although research findings varied a bit in terms of effect size of HRM practices, most of articles generally shared convergent conclusions that HRM practices positively correlate to CE elements irrespective of which HR practices are implemented. For example, several authors documented that training and development have shown to be the most influential HR practice in boosting CE (Schmelter et al., 2010; Twomey & Harris, 2000; Ziyae, 2016). However, several authors argued that the relationship between HRM and CE does not follow a cause-effect path, rather there are potential mediating mechanisms and boundary conditions that might underlie this link (Hayton, 2005). Notwithstanding the heightened research interest in CE, the existing literature did not offer sufficient knowledge about the exact nature of the mentioned relationship or what underlies it. Thus, what happens in-between remains unknown.

This lack of research therefore, warrants the benefit of systematically reviewing the relevant literature that examined the HRM-CE nexus. Hence, this review primarily aims at analyzing the possible factors that mediate the given link. To do so, we perform a systematic quantitative literature review (SQLR) (Pickering & Byrne, 2014). This method fits review's objectives in analyzing thoroughly related articles on HRM-CE and helps determining where future research is needed. In particular, SQLR explains a suitable literature review method for emergent research areas and for early career researchers. It is also preferred as a method to recap the diffusion of existing literature and spotting potential research gaps, as it is reliable, reproducible, comprehensive, structured, and provides a clear structure for the literature selection process (Tranfield et al., 2003). Pickering & Byrne (2014) stated that in addition to measuring the amount (number of papers) of research within different components of a chosen field "the review is quantitative because it quantifies where there is research, but also where there are gaps". Further, the quantitative review assesses the types of methods and research designs employed and the geographical spread of existing literature.

This review is expected to contribute to HRM-CE literature in several ways. Firstly, although prior research has already offered insights about the positive role of HRM in nurturing CE, it provides a more precise view about the most influential HRM practices for entrepreneurship. Secondly, this review clarifies the possible mechanisms

that underlie this link and boundary conditions the weaken or strengthen it. Thus, better understanding and more holistic depiction of the relationship. Third, performing SQLR helps quantifying the limits and the extent of the findings by defining what, when, and where the existing research of HRM and corporate entrepreneurship has been undertaken. This should support the conclusion of different research propositions relevant to HRM-CE nexus. Practically, investment on HRM practices is likely to be costly, specifically, for Small and medium-sized enterprises (SMEs) that, most often, have limited resources. Therefore, reporting effective HRM practices along with the mediating factors and boundary conditions is likely to offer suggestions that could assist practitioners and increase the awareness of how to optimize HRM influence on CE.

2. Methodology

Researchers used several methods to carry out literature reviews in diverse fields. These methods can be mainly classified into (1) narrative reviews, (2) meta-analyses, and (3) quantitative reviews. Each type of these reviews fits certain settings and has its own advantages and critiques (for further details see Pickering & Byrne, 2014). To meet review's objectives, SQLR was conducted following the steps illustrated in *Fig.1*.

Figure 1 – SQLR steps (Source: Pickering & Byrne, 2014)
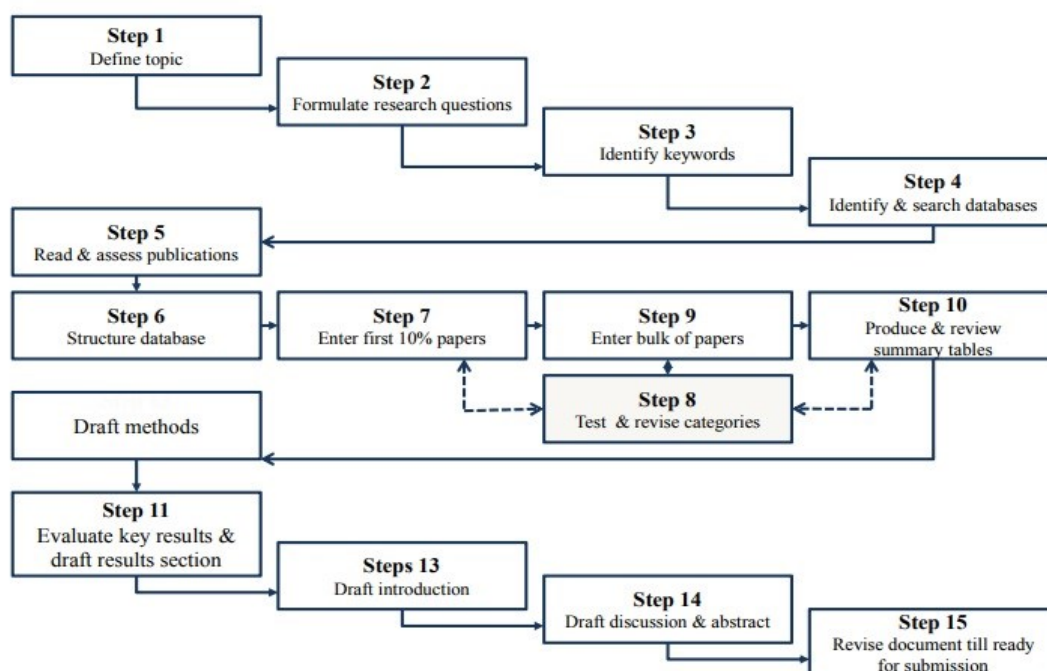
Pickering & Byrne (2014) outlined that SQLR has various benefits over traditional reviews and meta-analyses. For example, it assists authors to review, synthesize and map the literature systematically. However, the possible biases in seeking for pertinent literature is the main limitation of this method.

2.1 Data collection

Despite that extant literature includes theoretical articles, book chapters, and other non-refereed publications (e.g., conference papers, white papers, … etc.) that were highly cited and have a strong impact within HRM- CE fields, the scope of our review is limited to original empirical articles published, exclusively, in English academic journals. To ensure comprehensiveness and accuracy, articles were obtained using mix databases; Scopus, Web of Science, and Google Scholar. This enables cross-check, thus better results. To be more rigorous, search process involved browsing references lists in reviewed papers to locate publications that were not identified through journals scanning (Pickering & Byrne, 2014). Using key Boolean search terms "AND", "OR" with keywords like, "Human resource management", "HR Practices", and "high-performance work practices" were cross-referenced with "Corporate Entrepreneurship", and "Entrepreneurship" in databases internal engines for identifying relevant papers. Scopus database was the starting point to obtain studies since it is well-known for being the optimal database for citing and scanning accessible literature.

2.2 Papers selection and data extraction

Prisma flow chart *Fig.2* displays the process of articles selection (Moher, Liberati, Tetzlaff, & Altman, 2009). An initial sample of 97 articles that are potentially relevant was identified. Then, checking for duplicates process was performed which shortlisted 74 studies. Subsequently, discarding grey literature eliminated 13 papers. Reviewed against inclusion criteria; excluding non-English written papers and non-empirical articles decreased the sample to 34 papers. Eventually, removing papers that did not include the already mentioned search terms, neither in the title nor in the abstract resulted in a further reduction to a total of 27 research papers that link HRM to CE.

Figure 2 – Prisma flow chart/ Papers selection
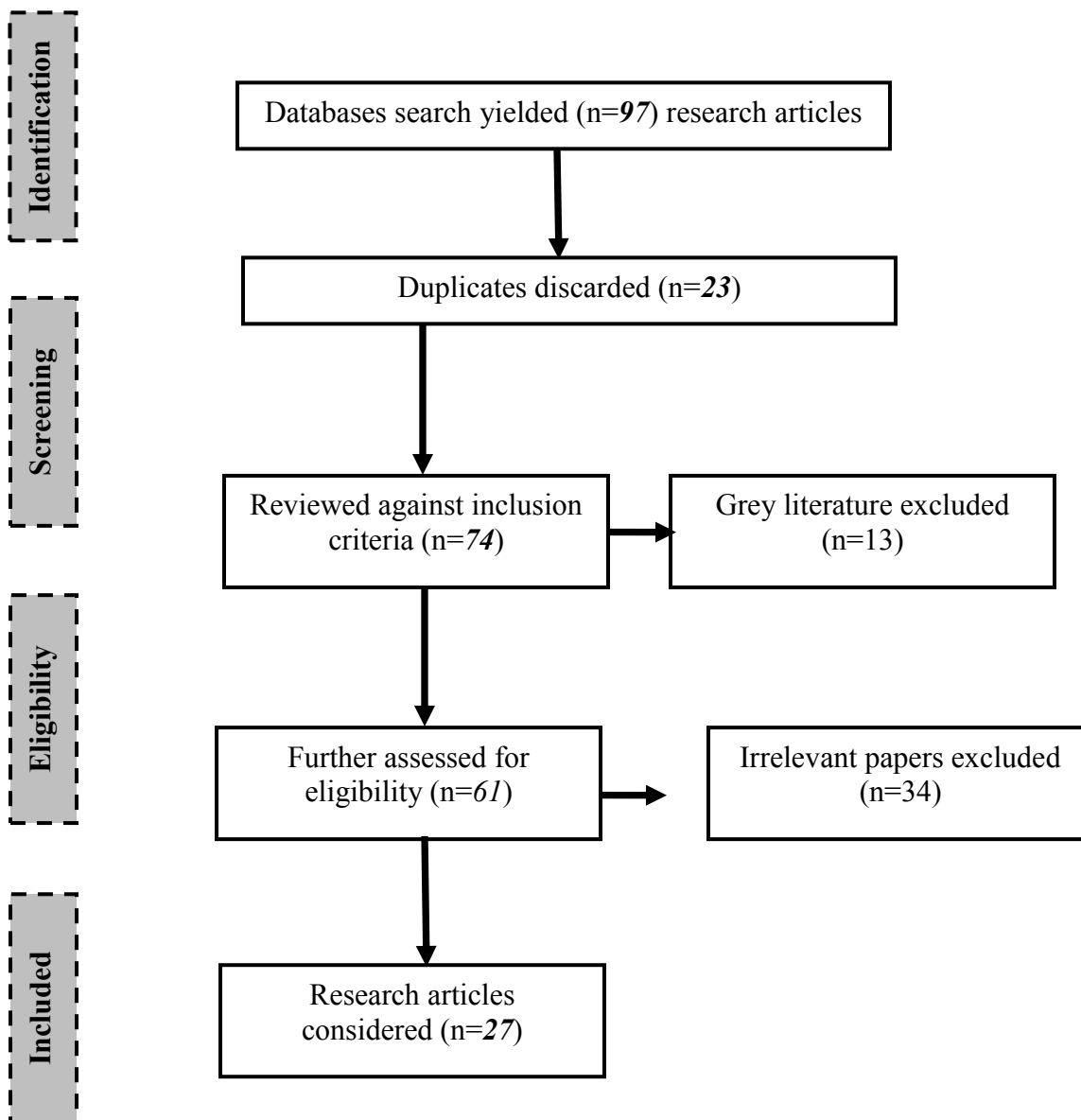
2.3 Data analysis

The analytical process involved reading, re-reading and analysis. First, reading the abstracts, and if it is still not clear, skimming through them to gain a general understanding. For instance, inadequate abstracts in some articles made it difficult to identify the aims, methodology, results or conclusions of the studies. Therefore, introductions and/or conclusions of studies were analyzed. For each study, the key information; year of publication, author(s), journal title, sample, methodology, and

findings were inserted into a database (*see appendix 1*). This step enabled quantifying results. For example, *Table 1* shows journals where selected papers were published.

Table 1 – Source of Papers

Journal	Papers n
Academy of Management Journal	*2*
Human Resource Management Journal	*3*
Journal of Business research	*1*
International Journal of Human Resource Management	*4*
Journal of Business Venturing	*1*
International Journal of Manpower	*1*
International Business Management	*1*
International Journal of Commerce and Management	*1*
Entrepreneurship Research Journal	*1*
German Journal of Human Resource Management	*1*
Asian Academy of Management Journal	*1*
International Entrepreneurship and Management Journal	*1*
Business Management and Strategy	*1*
International Journal of Humanities and Cultural Studies	*1*
Life Science Journal	*1*
Australian Journal of Basic and Applied Sciences0	*1*
Business and Economics Review	*1*
Journal of High Technology Management Research	*1*
Research Journal of Applied Sciences, Engineering and Technology	*1*
International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering	*1*
World Journal of Entrepreneurship, Management and Sustainable Development	*1*
Total	*27*

A sum of 8 papers out of 27 were published in Human Resource Management Journal, the International Journal of Human Resource, and German Journal of Human Resource Management. This highlights that HRM scholars are devoting attention to the intersection between HRM and CE more than researchers from other research backgrounds (Barrett & Mayson, 2006). The remaining papers were mainly found on other management and business journals.

3. Results

Table 2 summarizes papers based on research design; qualitative, quantitative or mixed methods. Most of the papers (n=19) adopted quantitative methodologies using questionnaires survey to collect data. Whereas a number of 6 papers (e.g., Amberg & McGaughey, 2016; Castrogiovanni et al., 2011; Kaya, 2006; Kühn, Eymann, Urbach, & Schweizer, 2016; Lee, Peris-Ortiz, & Fernández-Guerrero, 2011) adopted a qualitative research design using case studies and interviews. Two papers only followed a mixed method and gathered qualitative and quantitative data using tools of questionnaires, case studies, interviews and archival data (e.g., Llego, 2015; Ruiz & Coduras, 2015). Individual members like HR managers, directors, CEOs, R&D professionals were the key informants.

Of the 27 studies included in this review, 13 articles included a multi-industries sample of diverse fields like electronics; communications technology; food and drink; mechanical and electrical machinery; chemicals; and motorized vehicles. Other studies samples included knowledge-intensive firms (e.g., Schmelter et al., 2010), consulting companies (law, accounting) (Kühn et al., 2016), universities and education institutes (e.g., Mustafa, Lundmark, & Ramos, 2016; Mustafa, Richards, & Ramos, 2013), telecommunication (e.g., Ahmed, 2016), pharmaceutical firms (Z. Zhang & Jia, 2010; Z. Zhang, Wan, & Jia, 2008). Keating & Olivares (2007) mentioned that the pharmaceutical, electronics, and telecommunication industries could benefit much from investment in entrepreneurial initiatives. 4 studies, however, did not offer sufficient information about sample characteristics. A number of 20 studies were published recently between (2010-2016). For example, 6 papers were published in 2016, four articles in 2015, and two in 2013. Moreover, 6 papers were published in 2010 and 2011. This probably underscores

the fact that there is an increasing interest and a growing realization of the significance and the ubiquity of HRM-CE research topic.

Table 2 – Resultant studies relevant to HRM-CE

		Number
Method	*Quantitative (Survey questionnaires)*	*19*
	Qualitative (Case Studies/ Interviews)	*6*
	Mix Method	*2*
Total		**27**
Firm size	*Large*	*5*
	SMEs	*8*
	Medium and large	*3*
	N/A	*11*
Total		**27**
Industry/Sector	*Different Industries*	*13*
	Knowledge-intensive	*1*
	Pharmaceutical	*2*
	Education/ universities and institutes	*3*
	Consulting (accounting, law)	*2*
	Telecommunication	*1*
	Car Dealers	*1*
	N/A	*4*
Total		**27**
Country	*USA (and Canada)*	*5*
	Germany	*2*
	Spain	*3*
	Turkey	*2*
	China	*4*
	Malaysia	*2*
	Thailand	*1*
	Philippine	*1*
	Iran	*5*
	Saudi Arabia KSA	*1*
	Multinationalities	*1*
Total		**27**

Interestingly, the geographical scope of papers was also international. As such, studies were conducted in several countries like U.S.A, Spain, Turkey, Iran, and other countries (see *Table 2*). This diversity could raise the likelihood of developing a multi-cultural understanding of HRM-CE topic and may facilitate cross-national comparisons. Accounting for firm size, five studies were undertaken in large companies (e.g., Amberg & McGaughey, 2016; Edralin, 2010; Twomey & Harris, 2000) and another three studies were conducted in medium and large companies as in Özdemirci & Behram (2014) and Kühn et al. (2016). Even though scholars tended to study HRM in large companies as they believe that they are likely to have formal HR departments (Hayton, 2004). Given their significance for the national economy, authors shifted their attention towards studying HRM-CE in SMEs (n=8) which changed the prevalent premise that HRM and CE are often associated with large companies. Unfortunately, 11 studies did not mention adequate details about the size of sampled companies.

4. Discussion

The 27 obtained articles were subjected to further detailed analysis which revealed distinct research propositions. The reviewed studies confirmed the positive role of HRM as a catalyst for CE regardless of which HR practices are employed (Zhang et al., 2008). Findings showed that most of those studies followed a universalistic approach (see Delery & Doty, 1996) and have examined five specific HR practices; staffing, training and development, rewards and incentives, performance appraisals, and employee participation (e.g, Amberg & McGaughey, 2016; Castrogiovanni et al., 2011; Hayton, 2004; Kühn et al., 2016; Lee et al., 2011; Llego, 2015; Madmoli, 2016; Morris & Jones, 1993; Rong, Liu, & Ko, 2015; Ruiz & Coduras, 2015; Schmelter et al., 2010; Tang, Wei, Snape, & Ng, 2015; Ziyae, 2016).

In addition to these practices, other researchers investigated extra HR practices like teamwork (Kaya, 2006; Soleimani & Shahnazari, 2013), worker mobility, job security, job design (Atashi & Kharabi, 2012; Soleimani & Shahnazari, 2013), employee relations (Castrogiovanni et al., 2011; Edralin, 2010). Schmelter et al. (2010) for example, examined the practice of special assignment, however, was not relevant to CE

in SMEs. Twomey & Harris (2000) on the other side, studied CE in large American companies suggested to treat CE as a part of corporate strategy. Such perspective assumed the necessity to align HRM with CE as a strategic objective. They also recommended to adopt a configuration of entrepreneurial-oriented HRM practices; staffing, training, career development, reward, recognition, and performance appraisal to stimulate employees intrapreneurial behaviors like risk-taking, proactivity, and innovativeness that subsequently boost CE (Rong et al., 2015).

Another group of authors chose to examine a set of high-performance work practices (e.g., Ahmed, 2016; Atashi & Kharabi, 2012; Dizgah, Gilaninia, Alipour, & Asgari, 2011; Mustafa et al., 2013; Özdemirci & Behram, 2014; Zhang & Jia, 2010; Zhang et al., 2008). Macky & Boxall (2007) explained HPWPs as "high involvement or high commitment work systems, seek to increase worker satisfaction and improve organizational performance through investment in human capital" (p. 1461). HPWPs encompass practices of selective staffing, intensive training, performance appraisals, extensive compensation, and employee participation (Huselid, 1995; Lepak, Liao, Chung, & Harden, 2006). Authors who investigated HPWPs and CE duality consensually agreed that practices of selective recruitment, entrepreneurial-oriented training and development, regular-basis performance appraisals, long-term rewards and incentives, and employee empowerment and participation (Schmelter et al., 2010) are powerful for enhancing entrepreneurship within companies. Özdemirci & Behram (2014) for example, in their study of HRM-CE link in medium and large Turkish firms found that internal mobility and clear job description in addition to selective staffing are vital for CE, particularly, for venturing and strategic renewal. Findings altogether suggested that this type of practices could fuel CE performance through stimulating employees' commitment, thus encourage them to reciprocate by desirable discretionary and extra-role behaviors (e.g., knowledge sharing, innovative behavior).

Although research findings of the 27 studies agreed on that HRM practices are positively associated with CE, they varied a bit with regard to the effect size of certain HRM practices on instigating companies CE. Our analysis revealed four HRM practices that were frequently reported to have a positive strong influence on CE. In reference to

Lepak et al. (2006) classifications of HPWPs, two skill-enhancing practices; selective staffing and extensive training and development, one motivation-enhancing practice; intensive rewards and compensation, and one opportunity-enhancing practice; employee participation and empowerment. Many authors (Edralin, 2010; Schmelter et al., 2010; Twomey & Harris, 2000; Ziyae, 2016) shared a consensus that extensive training and development has the strongest effect on CE among other HR practices (Ziyae, 2016). For example, studying HRM-CE duality in Turkish firms, Kaya (2006) emphasized that training on specific job skills across multiple functions would foster entrepreneurial performance.

Morris & Jones (1993) highlighted the importance of group-oriented training that encourages cooperative behaviors. Also in a study of German knowledge-intensive SMEs, Schmelter et al. (2010) suggested that training and development could encourage entrepreneurial behavior. Likewise, Kühn et al., (2016) based on multiple case studies of German service companies also emphasized the effectiveness of training and staffing for CE. From a social exchange perspective (Blau, 1964), when companies invest more in developing employees' entrepreneurial capabilities and training them to acquire new competencies is likely to enhance their perceived organizational support and increase their commitment so that they reciprocate with discretionary and extra-role behaviors.

Rewards and incentives were reported as the second strongest HR practice in affecting CE aspects (Hornsby, Kuratko, & Zahra, 2002; Kaya, 2006; Kuratko, Ireland, & Hornsby, 2001; Morris & Jones, 1993; Schmelter et al., 2010). Employees are likely to perceive incentives (e.g., monetary, promotion, fringe benefits), especially when they are long-term, signal job security, and entrepreneurial performance-based as examples of organizational support for different entrepreneurial aspects, like innovation (Hornsby et al., 2002; Kaya, 2006; Schmelter et al., 2010). In a case study of a Spanish car provider company, Lee et al. (2011) established that "collective/ non-monetary goal-oriented rewards" promote cooperation and knowledge exchange thus, foster CE. In this vein, Hayton (2004) asserted that incentives that encourage knowledge exchange and organizational learning should significantly promote entrepreneurial behaviors and actions in SMEs as they are critical parameters for CE. Further, Kuratko et al. (2001)

based on their case study of an American large insurance and financial services company, emphasized the importance of combining different types of compensation (e.g., money, benefits, recognition) to boost corporate entrepreneurial actions.

Scholars moreover, consider selective hiring as the third strongest HRM practice in affecting CE (Edralin, 2010; Morris & Jones, 1993; Schmelter et al., 2010). That is, in the very beginning when organizations concentrate on entrepreneurial insights and abilities of prospective employees during the selection process, they make sure that they match CE dimensions rather than specific job requirements (Kaya, 2006). For instance, concentrating on creativity attitudes, proactiveness to react quickly to unexpected opportunities and teamwork spirit since entrepreneurial activities are inherently team-oriented (Kaya, 2006; Soleimani & Shahnazari, 2013).

As for employee empowerment and participation, Hayton (2004) explained that it positively nurtures CE processes through formal suggestion schemes and programs which, in turn, stimulates extra-role entrepreneurial behaviors. Empowering employees through offering greater autonomy, decentralizing decision-making, and delegating authority are likely to encourage risk-taking and knowledge exploration and exploitation that are essential for entrepreneurship actions (Soleimani & Shahnazari, 2013; Tang et al., 2015). Hence, we propose the following,

Proposition 1. *High-performance work practices, particularly, selective staffing, extensive training, intensive compensation and rewards, and employee empowerment and participation, strongly influence corporate entrepreneurship more than other HR practices.*

However, a number of 12 empirical studies in this reviewed confirmed that HRM-CE link is not a direct cause-effect relationship. Instead, there are several mediating and moderating mechanisms. For example, Ahmed (2016) addressed the mediating role of organizational commitment in enhancing HPWPs-entrepreneurial performance link in Saudi telecommunication companies. He reported that commitment partially mediates HRM-CE association. As employees are more committed, they tend to involve in entrepreneurial tasks that contribute to organizational success. HPWPs are put forward to manage the employment-organization relationship through diverse integrated practices,

like training and development programs, and strong compensation systems. Such practices communicate messages that organizations are committed to develop long-term trusting relationships with employees and also care about their well-being which meets and satisfies employees' expectations (Allen, Shore, & Griffeth, 2003; Bowen & Ostroff, 2004; Sun, Aryee, & Law, 2007). It also stimulates their motivation to exchange with desired behaviors (e.g., knowledge sharing, innovative behavior) and boost their willingness to engage in various organizational entrepreneurial initiatives (e.g., strategic renewal, venturing). Committed employees are likely to effectively recognize organizational support therefore, show high levels of organizational citizenship behavior (Moorman, Blakely, & Niehoff, 1998). Consequently,

Proposition 2. *Organizational commitment mediates the relationship between HRM and corporate entrepreneurship.*

Zhang & Jia (2010) and Özdemirci & Behram (2014), by the same token, unveiled the mediating role of employee's perceived organizational support (POS) in HPWPs-CE association. The concept of POS is defined as employees' perceptions and beliefs about the degree to which their organizations committed to them, care about their well-being, and value their contributions (Rhoades & Eisenberger, 2002). It was discussed that employees who have high levels of POS feel more committed to reciprocate with favorable attitudes and behaviors for their organizations' welfare (Coyle-Shapiro & Conway, 2004; Zhang & Jia, 2010). By offering HPWPs, firms target their employees' commitment (Combs, Liu, Hall, & Ketchen, 2006). This would elicit staff to develop positive interpretations that their organizational workplace is supportive and appreciate their contributions (Bowen & Ostroff, 2004). As such, they tend to show discretionary attitudes and behaviors to repay the perceived support (Özdemirci & Behram, 2014; Zhang & Jia, 2010). POS also enhances feelings of trust and psychological safety (Ring, 2010) which induces employees' motivation, proactiveness, and risk-taking. Consequently, enhances entrepreneurial activities at different functions (Gould-Williams & Davies, 2005; Twomey & Harris, 2000). Thus,

Proposition 3. *Employee's perceived organizational support mediates the relationship between HRM and corporate entrepreneurship.*

In studying HPWPs-CE linkage in Chinese biotechnology enterprises, Zhang et al. (2008) showed that employees' organizational citizenship behavior (OCB) exerts a crucial mediating effect on this relationship. Organ (1988) introduced OCB as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (p. 4). They argued that HPWPs create encouraging workplace that promotes trust, commitment, and cooperation that are manifestations of OCB. Such situational cues enhance employees' perceptions about the preferred extra-roles in their organizations and boost their motivation to exhibit breakthrough intrapreneurial attitudes and behaviors. So, employees incline to collaborate with other fellows which would affect the achievement of corporate entrepreneurial actions (Allen, Shore, & Griffeth, 2003; Podsakoff & MacKenzie, 1997). On the contrary, if employees show low levels of OCB they will not respond effectively to HPWPs messages, thus will inversely affect CE (Zhang et al., 2008).

Besides OCB, Dizgah and co-authors (2011) and Atashi & Kharabi (2012) highlighted the mediating influence of procedural justice on HRM-CE link. Procedural justice reflects the employees' evaluations about the fairness of managerial judgments or compensation (DeConinck & Stilwell, 2004; Folger & Cropanzano, 1998). Scholars advocated the importance of procedural justice for various attitudes and behaviors such as employee satisfaction and organizational commitment (Meyer & Smith, 2000). That is, when an employee recognizes that he/she is being treated equally to others he/she resorts to show high organizational commitment towards an organization and acts to accomplish its goals (Fields, Pang, & Chiu, 2000; Moorman et al., 1998). However, findings suggested that although HPWPs are touted as essential factors for gaining employees' commitment their influence found to be mediated by procedural justice and employees' interpretations about organizational support (Meyer & Smith, 2000; Paré & Tremblay, 2007).

In relation to HRM-CE, Dizgah et al (2011) on one hand, asserted the positive effects of different HPWPs on CE processes. On the other hand, they reported that HRM-CE relationship was intensified by the mediating influences of OCB and procedural

justice, particularly for training and rewards practices. Put differently, when employees receive the same training and development opportunities conjointly with fair compensation, their sense of procedural justice is positively enhanced (Atashi & Kharabi, 2012; Edralin, 2010). At the same time, perceptions and interpretations concerning organizational support are influenced (Allen et al., 2003; Kehoe & Wright, 2013) which prompts individuals to manifest OCB and reciprocate with extra-role behaviors and discretionary attitudes, like being innovative and proactive (Rhoades, Eisenberger, & Armeli, 2001) which contributes positively to corporate entrepreneurial performance (Dizgah et al., 2011; Moorman et al., 1998; Z. Zhang et al., 2008). That is,

Proposition 4. *Employees' organizational citizenship behavior and perceived procedural Justice mediate the relationship between HRM and corporate entrepreneurship.*

In a Malaysian context, Mustafa and colleagues (2016) disentangled the relationship between HRM and CE in universities and educational institutes. They provided that knowledge sharing of middle managers is an important mediator in this duality (Hayton, 2004). Likewise, Madmoli (2016) confirmed the mediating effect of middle managers' knowledge sharing. Previous literature proved that knowledge sharing can be highly encouraged through different HRM practices (Camelo-Ordaz et al., 2011) which creates an interactive workplace that encourages communication and facilitates collaboration. For example, practices of selective staffing, extensive training, and mobility could increase the likelihood of middle managers involvement in knowledge sharing behavior by developing their existing skills and equipping them with new relevant capabilities (Wu, Hsu, & Yeh, 2007).

Researchers, recently, started to concentrate on middle managers for two main reasons. First, middle managers are more involved in CE than other organizational members, especially in established firms (Hornsby, Kuratko, Shepherd, & Bott, 2009; Kuratko, Ireland, Covin, & Hornsby, 2005). Second, middle-managers' organizational position allows them to share knowledge across organizational levels and integrate it in different ways like "provision of task information and know-how to help others and to collaborate with others to solve problems, develop new ideas, or implement policies or procedures" (Wang & Noe, 2010, p. 117). By doing so, middle-managers facilitate

knowledge transformation into novel processes or products or actual business venturing (Amberg & McGaughey, 2016; Floyd & Wooldridge, 1999; Nonaka & Takeuchi, 1995).

In a similar study of 292 Malaysian middle-managers, Mustafa et al. (2013) investigated the mediating effects of two aspects of knowledge sharing; knowledge collection and knowledge donation. They proposed that when a middle manager donates knowledge to other fellows, collective learning as a vital process for CE advancement will be reinforced. Also, knowledge collecting provides middle managers with the chance to integrate existing knowledge with the new one which might produce innovative and entrepreneurial initiatives or projects (Hansen, 1999; Yli-Renko, Autio, & Sapienza, 2001). However, their results showed that only knowledge donating was found to partially mediate HRM-CE relation. Therefore,

Proposition 5. *Middle-managers' knowledge sharing and knowledge donating behavior mediate the relationship between HRM and corporate entrepreneurship.*

The last reported mediating factor; devolved management was suggested by Tang and colleagues (2015) in a study of 201 manufacturing companies in China. It was argued that CE aspects such as innovation, strategic renewal, and venturing could be advanced by empowering employees and encouraging their participation by offering more autonomy, decentralization, and delegation of authority. These practices are clearly manifested in devolved management style (Castrogiovanni et al., 2011; Tang et al., 2015). However, unless employees are skilled and capable to accomplish organizational goals, empowerment might not influence performance. Thus, companies need to develop employees' skills and capabilities. Hence, HPWPs are suitable to attain such objective as they could offer planned training and development programs. This could augment employees' perceptions of job meaningfulness (Kirkman & Rosen, 1999). Consequently, employees' motivation increases to accept further delegated tasks and get involved in discretionary and entrepreneurial processes to accomplish tasks (Hakimi, Van Knippenberg, & Giessner, 2010; Srivastava, Bartol, & Locke, 2006; Srivastava & Agrawal, 2010; Tzafrir, Baruch, & Dolan, 2003). Thus,

Proposition 6. *The devolved management style mediates the relationship between HRM and corporate entrepreneurship.*

Having analyzed the established mediating factors, we argue that they resemble the dimensions of organizational learning capability (OLC) as demonstrated by several authors. Jerez-Gómez et al. (2005) explained that OLC involves four core aspects that are managerial commitment, systems perspective, openness and experimentation, and knowledge transfer and integration. Similarly, Alegre & Chiva (2008), Chiva et al., (2007), and Goh (2003) suggested the same dimensions of OLC, but they added another dimension; teamwork and group problem solving. Hayton (2004) underlined that CE implementation in organizations is driven by their capability to learn. That said, learning by integrating new and extant knowledge through experimenting, risk-taking, and decentralization of decision-making is important for innovation, venturing, and renewal (Hayton, 2005; Hayton, Hornsby, & Bloodgood, 2013; Hayton & Kelley, 2006). Hence, we propose that including organizational learning capability as a mediating mechanism in the HRM-CE linkage is expected to provide a more nuanced and integrated understanding of this nexus.

The managerial commitment and leadership empowerment dimension explains that when organizations recognize the significance of learning as a fundamental prerequisite for entrepreneurial initiatives and organizational outcomes they are likely to develop strategies to foster it (Alegre & Chiva, 2008; Hayton, 2005; Nonaka & Takeuchi, 1995). Concerning CE, firms that offer a supportive workplace for organizational learning through HPWPs where knowledge sharing and information exchange are facilitated might have greater entrepreneurial outcomes (Castrogiovanni et al., 2011; Hayton, 2004; Kaya, 2006; Zhang & Jia, 2010). Hence, firms who promote learning by adopting HRM practices that encourage knowledge exploration and integration across organizational departments could advance organizational entrepreneurship performance.

The second OLC aspect is systems perspective that requires synthesizing organizational members perceptions into a common clear interpretation of desired behaviors and organizational goals (Goh, 2003; Jerez-Gómez et al., 2005). This entails implementing well-designed HRM practices that communicate obvious messages to all employees about organizational expectations which could enhance the collective learning since all employees' perceptions are almost similar and consistent. CE activities are

almost achieved within teamwork settings; meaning that there is a shared goal, common language, and consistent beliefs which maximize HRM effects on CE. Jerez-Gómez et al. (2005) presented openness and experimentation as the third dimension of OLC. They discussed that openness to ideas and knowledge could support employees' learning effort through experimentations. However, experimenting new entrepreneurial ideas involves risk-taking, therefore the existence of supportive HRM practices that promote trust and safety increase the inclination to take risks that is core to involve in CE actions of innovation, venturing, and strategic renewal.

The last OLC dimension involves knowledge transfer and integration. It speaks about two connected knowledge management processes that take place simultaneously and reinforce organizational learning (Alegre & Chiva, 2008; Chiva et al., 2007; Jerez-Gómez et al., 2005). Knowledge transfer implies the process in which knowledge is disseminated through formal and informal communication and interaction whereas knowledge integration involves bringing together the existing knowledge with the newly acquired one to come up with a new knowledge. Knowledge transfer therefore, explains one of CE dynamics as earlier noted by many researchers.

Jerez-Gómez et al. (2005) found that those four dimensions are closely connected and complement each other (Goh, 2003). He demonstrated that effective knowledge transfer requires openness to new ideas and viewpoints Alegre & Chiva (2008). Also, to effectively integrate knowledge, employees need to accept risk and experiment with those ideas to produce a knowledge that contributes to entrepreneurial activities. Additionally, the presence of a systems perspective along with shared goals and beliefs drive the collective learning that could result in successful entrepreneurial initiatives. Based on a multiple case studies approach, Castrogiovanni et al. (2011) couducted four case studies in different innovative SEMs in Spain to deeply investigate HRM effects on entrepreneurship. They reported a positive association between training and compensation practices and CE. Besides, they implicitly suggested the mediating role of OLC dimensions in reinforcing this link. They found that work environment where management supports their staff to learn and promotes communication between managers and their employees and among employees themselves to share knowledge resulted from

openness and experimentation would encourage entrepreneurial efforts in SMEs. They proposed that such conditions could be achieved by investing more in high-performance or commitment-based HRM practices. Therefore,

Proposition 7. Organizational learning capability mediates the relationship between HRM and corporate entrepreneurship.

This review also uncovered the influential role of organizational culture, specifically, entrepreneurial culture in advancing the impact of HRM on CE. Also, it justifies why the corporate entrepreneurial outcomes vary across companies. Numerous studies included in this analysis (e.g., Amberg & McGaughey, 2016; Castrogiovanni et al., 2011; Edralin, 2010; Hayton, 2004; Kühn et al., 2016; Schmelter et al., 2010; Soleimani & Shahnazari, 2013; Tang et al., 2015; Ziyae, 2016) theoretically advocated that having a culture that promotes values of trust, continuous learning, knowledge-sharing, autonomy empowerment, failure tolerance, and open communication and encourages attitudes and behaviors of creativity, proactivity, and risk-taking is likely to boost companies' entrepreneurial performance (Castrogiovanni et al., 2011; Hayton, 2004). That is, it communicates clear messages and functions as a proxy of CE's significance within companies (Kühn et al., 2016; Schmelter et al., 2010). Therefore, they suggested that organizations should embark on forming and cultivating a strong entrepreneurial culture through their HR policies and practices, which helps in establishing a sustainable competitive advantage (Amberg & McGaughey, 2016; Barney, 1986; Edralin, 2010; Kuratko et al., 2001; Tang et al., 2015).

Proposition 8. Entrepreneurial culture moderates the HRM-corporate entrepreneurship relationship that is mediated by the organizational learning capability.

5. Conclusion

Our review, particularly, concentrated on determining HR practices that are deemed effective for CE based on empirical findings. Also, we focused on analyzing the underlying mediating and moderating factors by which HRM further affect CE. Despite the given importance of HRM-CE research topic, we revealed that a scant scholarly attention was afforded to investigate the duality of HRM-CE, albeit started to grow

recently. This is clear from the relatively small number of studies (n=27) that empirically examined this association. Our review findings allowed us to suggest the following theoretic moderated mediation model in Fig. 3.

Figure 3 – The proposed moderated mediation model
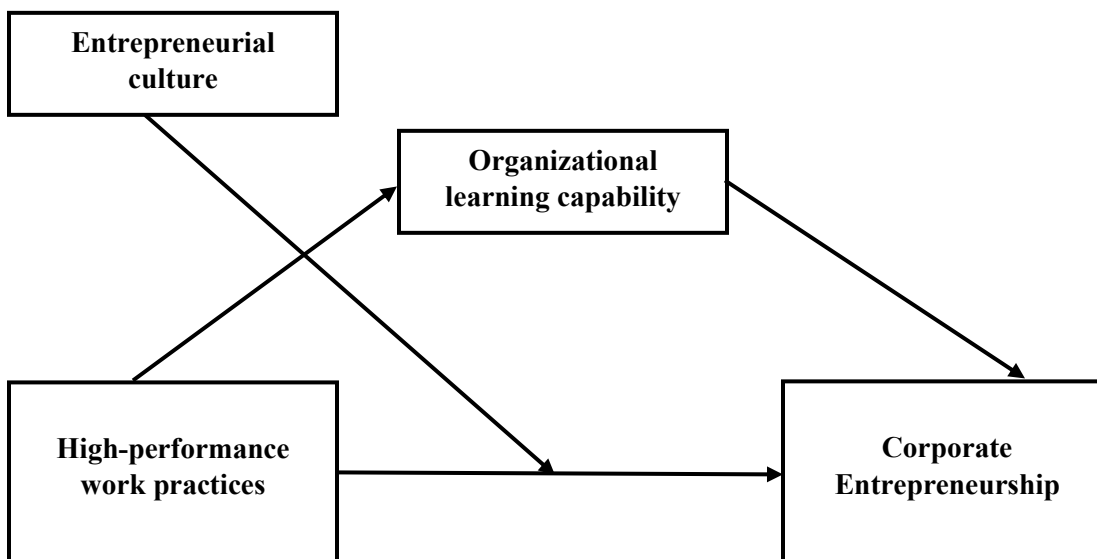
5.1 Implications for theory and research

Our review contributes to the germane literature in various ways. First, we identified four HRM practices that were widely reported as the best practices for boosting CE in companies. Those practices are; selective staffing, intensive training and development, extensive compensation and rewards, and employee empowerment and participation that are mostly offered in HPWPs or high-commitment work systems (HCWSs). This confirms the validity of available conclusions that HCWSs are crucial for promoting CE dimensions (e.g., innovation in Zhou, Hong, & Liu, 2013). Second, we unveiled that resource-based and social exchange theories are dominant frameworks when studying the intersection between HRM and CE (e.g., Castrogiovanni et al., 2011; Mustafa et al., 2016; Zhang & Jia, 2010; Zhang et al., 2008).

Hayton et al. (2013) demonstrated that social exchange framework includes concepts that are basic to study CE such as, social capital creation, organizational

perceived support, and organizational citizenship. This ensures the importance of relational perspective in HRM-CE connection in creating a social climate that foster employee relations and stimulates knowledge acquisition and exploitation (Rong et al., 2015) in large organizations (Edralin, 2010) and SMEs (Castrogiovanni et al., 2011). As managing HPWPs for CE involves some complexities as already noted, our third contribution is the suggestion of an integrated moderated mediation model (Fig. 3) that depicts HRM-CE relationship with underlying mediating and moderating mechanisms. We believe that this model could provide theoretical insights about the exact nature of the mentioned nexus (Amberg & McGaughey, 2016). It stresses the significance of learning capability in maximizing HPWPs impact on CE activities (Hayton, 2004). Besides that, it emphasized the influential role of the entrepreneurial culture.

5.2 Practical and managerial implications

Irrespective if it is a large company or SME, it is rather costly to invest in all practices of HCWSs. Therefore, the identification of the most efficient and effective HPWPs might guide practitioners to select the HPWPs that pay off for CE. In this context, we recommend HR executives to implement the suggested practices as a bundle to benefit from the existing complementarities and synergies among these practices (Hayton, 2005; MacDuffie, 1995). Besides, firms need to strengthen the inter-relationships between employees, stakeholders, and organizations (Hayton, 2005; Rutherford & Holt, 2007). Such relationships facilitate information exchange and knowledge flow that are dynamics of entrepreneurship within organizations (Castrogiovanni et al., 2011; Hayton, 2004; Mustafa et al., 2016).

It is noteworthy that employing HPWPs to promote CE is not an easy task (Kuratko, 2010). So that, companies who adopt CE as a strategy not only need to align HRM with CE (Tang et al., 2015), but also to direct their efforts to improve their learning capability (Ziyae, 2016). Inasmuch as an organization is able to learn, its intellectual capital is likely to increase which is a pivotal element for corporate entrepreneurial enhancement. This necessitates the continuous capitalizing in HRM intensity (Hayton, 2004; Kaya, 2006) and in human and social capital (Edralin, 2010). Particularly, through decentralization of decision-making, employee empowerment and participation, reward

knowledge sharing, and encourage risk-taking (Tang et al., 2015). Additionally, firms need an entrepreneurial culture that cultivates and promote entrepreneurship values and promote CE actions. For example, risk-taking, proactivity, and knowledge-sharing. Our suggested model therefore, might be a reference for managers who are interested in capitalizing on HCWSs or HPWPs to promote CE.

5.3 Limitations and future research paths

The current review is not free of limitations. As with other literature reviews, our review involves bias in studies selection as only one researcher undertook this research. Besides that the review relied solely on electronic databases while discarding grey literature. Furthermore, our findings counted on HR practices exist in HRM-CE research. Other practice might be existing but have not been mentioned in the relevant literature. Also, addressing CE as a one construct neglects its multidimensional nature which might be another limitation of this review since HRM practices can have various effects on CE dimensions. Scholars need to consider CE multi-dimensionality and examine HPWPs role in each dimension; innovation, venturing, and strategic renewal to better produce insightful conclusions.

We observed that the best HPWPs for CE in large companies are similar to those in SMEs. We suggest the need for more accurate investigation that accounts not only for firm size, but also for other contingencies like sector (public, private), industry, and country. This might be unfolded through undertaking case studies that help to delve deep into addressing accurate differences and allow for comparison and empirical scrutiny. Additionally, all 24 articles used cross-sectional data. We posit the need for longitudinal studies that account for HRM practices lagged effects. Also, CE outcomes take time to show results. Interestingly, previous literature assumed the role of organizational learning in HRM-CE relationship. Yet, no single article examined this assumption. So, we put forward the importance of empirical evidence to validate this claim. Likewise, with the entrepreneurial culture as a boundary condition in this relationship.

We agree with Barrett & Mayson (2006) that there is a kind of myopia in extant HRM-CE research. Put differently, the majority of findings came from one side. For example, most of the existing studies borrowed from social exchange theory (e.g.,

Mustafa et al., 2016; Zhang & Jia, 2010; Zhang et al., 2008), while overlooking other theoretical frameworks that might be relevant when studying this link. Moreover, the major focus on examining this relationship was from HRM scholars (Barrett & Mayson, 2006). Overall, we believe that extant limitations and the paucity of clear frameworks would be provocative for further research.

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Appendix 1 – Information database of included research papers

Author/ Year	Journal	Paper title	Sample	Research method	CE dimensions	HRM Type	Findings
(Morris & Jones, 1993)	International Journal of Human Resource Management	Human resource management practices and corporate entrepreneurship: an empirical assessment from the USA	35 companies with 70 ≥ employees in the U.S.A. different industries (software, data processing, construction and real estate, electronics/aerospace, hotels, banking/finance healthcare	questionnaire survey (HR managers and Marketing managers)	Risk taking, Innovativeness, Proactiveness	thirty-six practices in five categories (planning and job design, selection and staffing, training and development, appraisal and compensation)	training/development, performance appraisals, compensation, selection and staffing, planning/job design
(Twomey & Harris, 2000)	International Journal of Commerce and Management	From strategy to corporate outcomes- Aligning human resource management systems with entrepreneurial intent	800 large firms in the U.S.	questionnaire survey (corporate executives: senior marketing and HR managers)	intrapreneurial behavior (Risk taking, Innovativeness, Proactiveness)	HRM sub-systems staffing, training and development, performance management, rewards and recognition, and career development	A configuration of HRM sub-systems with entrepreneurial thrusts will produce more

					and entrepreneurial outcomes		intrapreneurial behaviors
(Kuratko et al., 2001)	Academy of Management	Improving Firm Performance through Entrepreneurial Actions: Acordia's Corporate Entrepreneurship Strategy	Large U.S. company	1 case study	Overall CE	Compensation	Incentive compensation and entrepreneurial culture
(Hornsby et al., 2002)	Journal of Business Venturing	Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale	American and Canadian manufacturing, service, and financial organizations	questionnaire survey 231 and 530 midlevel managers	Overall CE	Different organizational factors	The appropriate use of rewards for middle managers
(Hayton, 2004)	Human Resource Management	Strategic human capital management in SMEs: An empirical study of entrepreneurial performance	Public and private 99 SMEs	questionnaire survey (HR executives)	Overall CE	Incentive pay, employee suggestion schemes and formal employee participation programs	discretionary HRM incentives for extra-role behavior e.g., knowledge sharing, and organizational learning, employee participation are positively

							associated with entrepreneurial performance
(Kaya, 2006)	International Journal of Human Resource Management	The impact of human resource management practices and corporate entrepreneurship on firm performance: evidence from Turkish firms	124 Turkish SMEs in different industries (metal, automotive, chemical, machine industry, service, construction, logistics, textile, food)	face-to-face interviews (top executives, HR directors)	Risk taking, Innovativeness, Proactiveness	behaviour and attitude, extensive training on job skills in multiple functions, written policy, team activities, incentive to meet objectives, communication of strategy, interaction facilitates, feedback on performance	HRM practices promote CE efforts
(Zhang et al., 2008)	The Journal of High Technology Management Research	Do high-performance human resource practices help corporate entrepreneurship? The mediating role of organizational citizenship behavior	139 Chinese SME (≥100) biotechnology enterprises/ pharmaceutical industry	questionnaire survey (the CEO, HR managers and employees)	innovation, venturing and strategic renewal	High-Performance HR practices (Selective staffing, Extensive training, Internal mobility, Employment security, Clear job description, Results-oriented appraisal,	Positive HR-CE relationship Mediator: employees' organizational citizenship behavior

						Incentive reward, Participation)	
(Edralin, 2010)	DLSU Business & Economics Review	Human Resource Management Practices: Drivers for Stimulating Corporate Entrepreneurship in Large Companies in the Philippines	20 Philippine large companies (9 manufacturing and 11 service sector) Employees number (300 to about 5,000)	questionnaire survey	CE particularly innovation	Different HR practices	Recruitment and selection, training and development, employee relations are significant enablers for CE
(Schmelter et al., 2010)	Human Resource Management	Boosting CE through HRM Practices: Evidence from German SMEs	214 knowledge-intensive German SMEs	a cross-sectional e-mailed questionnaire survey	innovativeness, risk propensity، proactiveness, new business venturing, and self-renewal	Different HR practices (staff selection, development and training, rewards، specialist assignments)	development and training (the strongest), rewards (extrinsic and intrinsic), then staff selection on CE
(Zhang & Jia, 2010)	Human Resource Management	Using Social Exchange Theory to Predict the Effects of High-Performance Human	139 CEOs and HR managers and 695 employees Chinese biotechnology	questionnaire survey (the CEO, HR managers and employees)	innovation، venturing, and strategic renewal	High-Performance HRM	Positive HR-CE relationship Mediator: perceived organizational support in team-

		Resource Practices on Corporate Entrepreneurship: Evidence from China	pharmaceutical enterprises				oriented environments
(Castrogio vanni et al., 2011)	International Journal of Manpower	Linking corporate entrepreneurship and human resource management in SMEs	4 Spanish SMEs	a multiple-case study using, Semi-structured Interviews with owner- managers, observations, site visits, archival records, participation in meetings and discussion groups from each firm	The overall CE	Reward and compensation systems, formation and training	HRM practices and management leadership styles of owner-managers influence the emergence of CE within SMEs
(Dizgah et al., 2011)	Australian Journal of Basic and Applied Sciences	High performance human resource and corporate entrepreneurship: the mediating role of organizations citizenship behavior and procedure justice	93 Iranian SEMs	questionnaire survey	Riskiness, proactiveness, competitive aggressiveness, innovativeness	High-Performance HRM (job design, participation, staffing, mobility, job security, appraisal, training and rewards)	Positive HR-CE relationship Mediator: the organizational behavior and procedure justice

(Lee et al., 2011)	International Journal of Manpower	Corporate Entrepreneurship and Human Resource Management: Theoretical Background and a Case Study	The top management at the Spanish firm; Montalt-Valencia	Case study	The overall CE	Different HR practices	Selection, training and career development," collective/non-monetary goal-oriented rewards", cooperation promote CE
(Atashi & Kharabi, 2012)	Life Science Journal	Effect of high-performance human resource management in the corporate entrepreneurship	93 managers in Iranian SEMs	questionnaire survey	risk-taking, pioneering, high innovation, and aggressive competition	Different HR practices (selection, training, worker mobility, job security, job design, rewards, assessment of results and participation)	Positive HR-CE relationship Mediator: the organizational behavior and procedure justice
(Mustafa et al., 2013)	Asian Academy of Management Journal	High performance human resource practices and corporate entrepreneurship: The mediating effect of middle managers knowledge collecting and donating behaviour	292 middle-managers Malaysian public and private universities	questionnaire survey	innovation, risk-taking and proactiveness	High-Performance HRM	Positive HR-CE relationship Partial mediator: middle-managers' willingness to donate knowledge

(Soleimani & Shahnazari, 2013)	Research Journal of Applied Sciences, Engineering and Technology	Studying effective factors on corporate entrepreneurship: representing a model	47 managers and exerts of Hexa Consulting Engineers Company (Iran)	cross-sectional questionnaire survey	creating new units, product/service and technology/process innovation, self-renewal	Different HR practices (teamwork, performance appraisal, delegation of authority, accurate job design, permanent education, compensation)	A positive significant HRM-CE relationship
(Özdemirci & Behram, 2014)	Business Management and Strategy	Linking human resources practices to corporate entrepreneurship: The mediating role of perceived organizational support	258 medium and large Turkish firms (>50) employees middle and top level managers	Face-to-face and online surveys questionnaire	new business venturing، innovativeness, self-renewal, proactiveness	High-Performance HRM (selective staffing, extensive training, internal mobility، employment security, clear job description, result-oriented appraisal, incentive reward, and participation)	Strong positive HRM-CE relationship Mediator: perceived organizational support
(Llego, 2015)	International Journal of Social, Behavioral, Educational, Economic, Business and	The Relationships between Human Resource Management and Entrepreneurship: Case Study SME in Thailand	SME in Thailand	Survey and interviews with managers and policy makers	The overall CE	Different HR practices	Human Resource Planning, Performance Appraisal, Compensation and Welfare, Training and Development

	Industrial Engineering						
(Rong et al. 2015)	Academy of management	Corporate entrepreneurship and HR management system: evidence from Chinese State-Owned Enterprise	269 engineers in Chinese state-owned enterprises	Survey questionnaires			HR systems affected the climate for innovation, autonomy, and collaboration, which will subsequently affect CE.
(Ruiz & Coduras, 2015)	Journal of Business Research	Can company restructuring create a healthier work environment, promote corporate entrepreneurship, and improve productivity?	4 workplaces with 480 employees	3-year program (20 practices in fresh cut IV gamma products sector) + questionnaire		Different HR practices	HRM practices yield significant positive effects in productivity indicators, risk prevention, corporate entrepreneurship، and work environment
(Tang et al., 2015)	International Journal of Human	How effective human resource management promotes corporate	201 Chinese manufacturing firms	Survey questionnaires e-mailed questionnaires		Different HR practices (hiring, compensation and training)	Strong positive SHRM-CE relationship

	Resource Management	entrepreneurship: evidence from China					Partial mediator: devolved management style
(Ahmed, 2016)	International Business Management	Human Resource Management Practices and Corporate Entrepreneurship: The Mediating Role of Organizational Commitment	250 employees Saudi tele-communication	Survey questionnaires		High-Performance HRM	Positive HR-CE relationship Partial mediator: organizational commitment
(Amberg & McGaughey, 2016)	The International Journal of Human Resource Management	Strategic human resource management and inertia in the corporate entrepreneurship of a multinational enterprise	Korea, Germany, Sweden- 3 local entities in a business unit (the Fire Safety) of a large multinational enterprise (Siemens and Halske AG)	qualitative case study (participant observation, semi-structured interviews, corporate documents)		Different HR practices	the acquisition, training‹ retention and motivation roles of HR activities overlapping and interdependent with knowledge coordination and deployment mechanisms are important for activities supporting CE
(Kühn et al., 2016)	German Journal of	From professionals to entrepreneurs: Human	Professional Service Firms	a multiple case study design (6)		Different HR practices	acquiring‹ training, and retaining highly

	Human Resource Management	Resources practices as an enabler for fostering corporate entrepreneurship in professional service firms	(PSFs) (accounting/consulting and law) in two large- and one medium-sized	based on interviews, press articles, firm websites, public reports e.g. as annual audits, transparency reports			skilled staff are crucial HR activities to PSFs' success
(Mustafa et al., 2016)	Entrepreneurship Research Journal	Untangling the Relationship between Human Resource Management and Corporate Entrepreneurship: The Mediating Effect of Middle Managers' Knowledge Sharing	163 Malaysian middle managers of 12 higher education institutions	Survey questionnaires via e-mail		High-Performance Human Resource Practice	Positive HR-CE relationship Mediator: middle managers' knowledge-sharing behavior
(Ziyae, 2016)	World Journal of Entrepreneurship, Management and Sustainable Development	Presenting an evaluation model of human resource management's effect on corporate entrepreneurship	125 senior, middle, and operational managers of the General Directorate of Technical and	Survey questionnaires		Different HR practices	Significant positive effect of HRM on CE especially training and empowerment

			vocational Education (Iran)				
(Madmoli, 2016)	International Journal of Humanities and Cultural Studies	Investigating the Relation between Human Resource Management and Organizational Entrepreneurship: The Mediating Role of Knowledge Sharing by Middle Managers	384 managers and employees	Survey questionnaires		Different HR practices	Selection of competent experts، extensive training, job evaluation, rewarding, employees' participation, managers' tendency to share implicit knowledge

CONFIGURATIONAL PATHS OF HIGH-PERFORMANCE WORK PRACTICES TO EMPLOYEE RETENTION THROUGH FUZZY-SET QUALITATIVE COMPARATIVE ANALYSIS

Abstract

This study adopts a configurational perspective and applies fuzzy-set Qualitative Comparative Analysis on a dataset of 232 Austrian and Hungarian manufacturing firms to explore how high-performance work practices combine to enhance employee retention. Results uncover five equifinal configurations of different high-performing skill, motivation, and opportunity-enhancing practices that could help companies and managers to retain employees effectively. The resultant configurations are interpreted in terms of how each configuration fits different companies' HR strategies and policies. Our study raises advanced theoretical insights about the synergetic effects of HPWPs on employee retention through the configurational approach and fsQCA.

Keywords

1. **Introduction**

As the current industrial society is shifting towards people-centric organisational designs (Guthrie, 2001), employees have become progressively more professional and less loyal to their companies (Mahal, 2012). Therefore, retaining high-calibre employees is a matter of strategic significance that set challenges for HR departments compelling them to look for effective retention strategies (Hausknecht, Rodda, & Howard, 2009; Hiltrop, 1999). Thus, over the past 15 years or so, the assessment of aggregate voluntary turnover become important as other metrics of performance (e.g. profit indicators, customer satisfaction, and innovation intensity) (Boorstin, 2005).

Ample evidence confirmed the positive role of HRM practices, particularly, high-performance work practices (HPWPs), as prominent strategic factors for promoting staff retention (Combs et al., 2006; Huselid, 1995) through creating a positive work environment that influences employees' skills, abilities, motivation, and participation (K. Jiang, Lepak, Hu, & Baer, 2012) and by stimulating employees' commitment through treating them as valuable members (Guthrie, 2001) which, consequently, affect their decision to stay or leave their organisations. For example, the practices of staff selection, training, career development, compensation, performance appraisals, and participation in decision making are deemed to be negatively correlated with turnover (Pittino, Visintin, Lenger, & Sternad, 2016; Stirpe & Zárraga-Oberty, 2016).

Research results are, however, inconclusive possibly because of the adoption of different analytical and theoretical approaches. Specifically, studies appear to concentrate on three different perspectives to examine HPWPs-employee retention relationship, the universalistic, the contingency, and the configurational (Martín-Alcázar, Romero-Fernandez, & Sánchez-Gardey, 2005). In the universalistic perspective, authors analysed the linear relationships and reported the additive effects of certain HR practices known as "best practices" or "high-performing practices" on retention (Cappelli & Neumark, 2001). Alternatively, several scholars adopted the contingency approach arguing that HPWPs-employee retention link is contingent to other factors that could moderate this relationship (e.g., Stirpe & Zárraga-Oberty, 2016 analysing the role of gender).

Both universalistic and contingency approaches implicitly denied the possible complex interdependency and the synergistic effects of HPWPs (Martín-Alcázar et al., 2005). Hence, the configurational approach emerged to challenge the assumptions of both approaches by emphasizing that HPWPs are more effective when "strategically" combined as configurations (in most often are equally effective), because of the synergistic interdependencies that allow for a positive interplay and mutual reinforcing effect among practices that positively influencing performance (Delery & Doty, 1996; Posthuma et al., 2013).

Some studies adopted the configurational approach to study HPWPs effects on operational and financial outcomes (e.g., Delery & Doty, 1996; Huselid, 1995). Although research provided a robust empirical evidence concerning HPWPs-employee retention relationship (Arthur, 1994; Guthrie, 2001; Hiltrop, 1999; Wambui, 2014) many points remain unclear. For example, research suggested that HPWPs vary in their effects' size when influencing employee retention but does not tell which of HPWPs is necessary or sufficient to enhance retention or which HPWPs to be configured to effectively retain employees (Stavrou & Brewster, 2005). Many authors called for extra research that better explains configurational relationships and synergistic effects of HPWPs (Delery, 1998; Macky & Boxall, 2007). By the same token, scholars recommended that analyzing configurational models requires more refined and sophisticated methods and techniques other than factor and cluster analyses to accommodate complex interdependencies of HPWPs (Delery, 1998; MacDuffie, 1995; Martín-Alcázar et al., 2005).

Admittedly, the advent of fuzzy sets Qualitative Comparative Analysis (fsQCA) (Ragin, 1987, 2008) advanced the configurational approach findings in different fields. FsQCA presents a proper analytic technique which builds on set theory, Boolean algebra, and fuzziness to analyse configurational relationships and combinatorial synergistic effects of causal conditions on a specific outcome that cannot be analysed through common regression-based methods or cluster analyses (Fiss, 2007). FsQCA enables researchers to embrace configurational perspective's requirements: (1) conjunctural causation, where various variables coalesce to produce effects that are greater than the sum of individual parts; (2) equifinality, that a given outcome can be obtained through

different paths; and (3) causal asymmetry, where a particular causal condition can lead to the presence or the absence of an outcome depending on its connection with the other factors. Another focal aspect of the fsQCA is conceptualizing causal relationships as necessary or sufficient (Fiss, 2011; Misangyi et al., 2016).

We, particularly, aim to explore the meaningful configurations of HPWPs that can enhance employee retention. Hence, the configurational approach is of particular relevance. The intended contributions are threefold. First, adopting a configurational approach and applying fsQCA offers a novel view of the HPWPs-employee retention link by identifying complex configurations of HPWPs to retain talented employees. Second, we elaborate on equifinality principle which is considered as a prime future research topic for strategic HRM field (Delery, 1998). Lastly, we distinguish between which HPWPs is necessary or sufficient for retention, overcoming all those approaches that limit the analyses to synthetic indexes of HPWPs adoption averaging on kaleidoscopic sets of practices. Concerning practical implications, identifying multiple complex configurations of HPWPs makes it rather difficult for competitors to copy and imitate which should be a source of competitive advantage (J. B. Barney, 1995). Moreover, organisations cannot adopt the whole array of HPWPs, this study may provide a guidance for HR directors in determining the appropriate paths of HPWPs for staff retention according to their adopted HR strategies and policies.

2. Theoretical background

2.1 HPWPs and employee retention

Retaining high-performing employees become a predominant challenge for contemporary organisations (Hausknecht et al., 2009). Among several possible drivers (e.g., leadership, organisational climate, organisational culture), HPWPs are considered as eminent factors that could contribute to retention. Strategic HRM theorists coined the term high-performance work practices to explain different coherent sets of practices that are designed to improve prformance through enhancing employees' skills, motivation, and participation in making decisions (Lepak et al., 2006). After Huselid's (1995) seminal contribution authors showed avid interest to investigate the most effective HR practices that may curb employee turnover and promote retention (e.g., Batt et al., 2002;

Guthrie, 2001; Hiltrop, 1999; Jensen et al., 2011; Luna-Arocas & Camps, 2007; Pittino et al., 2016). These studies show to support the hypothesis that HPWPs have significant effects on a number of measures of employee operational performance (turnover and productivity) through targeting employees' skills, motivation, and opportunity (Lepak et al., 2006), which in turn influencing individual and aggregate turnover, directly or through meta effects, employees' job satisfaction and their level of commitment and, consequently, their intention to quit (Arthur, 1994; Combs et al., 2006).

For example, skill-enhancing practices, like selective staffing, intensive training, and career development are employed to develop employees' abilities and self-efficacy. Authors found that such practices are negatively associated with voluntary turnover (Arthur, 1994; Guthrie, 2001). For instance, qualified employees tend to be more able to meet job demands, get more positive feedback on their performance, and are more frequently considered for promotion; so, they can be considered as being less likely to leave the organisation (Batt & Colvin, 2011; Shaw et al., 2009). Further, selecting new entrants through rigorous processes is not only means of introducing a highly skilled workforce, but also a way of increasing internal competition and signaling that performance and people matter (Pfeffer, 1994). Similarly, extensive training influenced employee retention through assisting employees to achieve career goals by mastering skills, competencies, and tasks, thus contributing to career development (Batt, 2002; Stovel & Bontis, 2002).

Although some research shows a direct positive impact of skill-enhancing practices on retention (Galunic & Anderson, 2000), findings are still inconclusive, because of the claim that practices aimed at increasing employees' skills may also create counterproductive results and increase turnover rates. As thoroughly elucidated by Lepak and Snell (1999), a large part of the skills acquired by the employees through internal training are not firm-specific and of interest to employers and competitors alike, thus are exploitable on the external labour market (Rao & Drazin, 2002). Subramony (2009) in a meta-analysis of practices also concluded that they are unrelated to retention; while (Cappelli, 2008) reported several studies that show a positive impact of skill-enhancing practices on turnover as do Gardner et al. (2011).

The second set, motivation-enhancing practices, targets employees' motivation and commitment through compensation and performance appraisals to enhance their discretionary efforts (Lepak et al., 2006). The commonly used motivation-enhancing practices include different forms of compensation (e.g., high salaries, extra benefits, or reward systems) and performance appraisals. Empirical results suggest a significant positive effect of both organisational performance-based compensation systems and performance appraisals on employee retention (Hausknecht et al., 2009; Ivars & Martínez, 2015), especially, when employed together (Imna & Hassan, 2015).

Huselid (1995) for example, discussed that performance appraisals when are properly linked to compensation systems could effectively contribute to retaining top talented employees by making employees less reluctant to quit (Subramony, 2009). The forms of performance appraisals such as feedbacks, clear expectations, and discussions about career development opportunities (Razouk, 2011) appear to generate positive employee attitudes and behaviours, and to positively enhance affective commitment by satisfying the competence and relatedness needs posited in self-determination theory (Deci & Ryan, 1985; Gardner et al., 2011).

Lastly, opportunity-enhancing practices, target employees' autonomy and participation in organisational decision-making processes through activities of empowerment that enable employees to apply their skills in the best interest of the organisation (Delery & Shaw, 2001). Providing structured opportunities to participate through decentralized decision making, autonomy in organizing their own tasks, consultation and regular information exchange, self-managed teams, or formal grievance procedures is also included among HPWPs by several authors (Patel & Conklin, 2012; Sels et al., 2006). In general, following group value and procedural justice models, having a voice in decision-making processes can be seen as an indicator of respect for a person, and can increase motivation to reciprocate and act in the group's interest (De Cremer, 2002). Research documented a strong link between the opportunity to participate in change processes and the positive attitude of employees toward their organisation which lowers their intentions to quit (Yücel, 2012).

Most of the earlier-quoted studies adopted the universalistic perspective to study employees' intention to quit by investigating the individual HPWPs on retention (Combs et al., 2006), while other authors employed the contingency approach to examine turnover and retention at the organizational level (Paauwe, 2009). On the other hand, some studies followed the configurational approach counting on the premise that HPWPs have differential effects and varied in their effects' size on retention and that are likely to interact and complement each other to produce greater effects (Godard, 2004; K. Jiang et al., 2012).

2.2 HPWP-employee retention relationship: a configurational perspective

The configurational approach originates from the configurational research stream (A. D. Meyer, Tsui, & Hinings, 1993), but it already has its roots in the strategic management field. Some authors view the configurational perspective as the essence of strategy research (how organisations can combine structures, processes and environment to obtain their objectives) (Ketchen et al., 1993; Miller, 1996). The configurational approach goes against the assumptions of best practices, linearity, additive effects, unifinality, and symmetric relationship by assuming that multiple factors combine (not compete) to produce a given outcome which reflects the principle of conjunctural causation. It allows for the asymmetric analysis that both the presence or the absence of a factor may lead to positive or negative outcomes depending on the combination with other factors (Greckhamer et al., 2008), and the condition which is related to one pathway can be inversely related (or unrelated) in another one (Ragin, 2000). Further, it stresses equifinality concept that the same outcome can be achieved through different paths (Fiss, 2007, 2011; Katz & Kahn, 1978).

In employee retention context, authors emphasized that the effects of the right combination of skill-, motivation-, and opportunity-enhancing practices would have synergistic and interactive effects on operational performance (productivity, turnover) rather than simply linear additive net effects of each single practice employed individually. For instance, findings suggested that skills- and motivation-enhancing HR practices have a significant negative relationship with voluntary turnover (Guthrie, 2001; Huselid, 1995). Subramony (2009) revealed core findings that only motivation- and

opportunity or empowerment-enhancing are negatively correlated to turnover (Allen et al., 2003). Also, retaining highly-skilled workforce might be rather difficult, because such employees are in demand by competitors and are attracted by alternatives. Therefore, combining selective staffing with career development and above market-pay may retain them (Benson et al., 2004).

Indeed, a handful of works empirically identified some of these combinatorial effects on retention. For instance, Imna & Hassan (2015) observed that there is a positive and significant impact on retention when training is configured with career development. They also show that neither performance appraisal nor training and development have a significant impact on employee retention, if they are adopted individually. This is consistent with Dyer and Reeves (1995) argument that since staff performance hinges upon skills and motivation, it is useful to employ both practices. The same applies when performance appraisal is linked to compensation. Similarly, Kadiresan et al. (2015), highlighted that when training and development programmes (skill-enhancing practices) are linked with performance appraisals (motivation-enhancing practices), they would stimulate employees' commitment through producing an additional synergic effect, which would lead to higher retention.

Nonetheless, some authors suggested that the empirical evidence supporting synergistic relationships is underwhelming and has not evolved in tandem with theory (Chadwick, 2010). Authors therefore, suggested the need for alternative refined analytical techniques that allow modeling and analyzing configurational relationships and complementary synergistic effects of HPWPs (Delery, 1998). The introduction of fsQCA (Ragin, 2000) enabled researchers to account for conjunctural causation, equifinality, and asymmetric causality because of its configurational nature (see Misangyi et al., 2016).

FsQCA is appropriate to investigate complex systems through cross-case comparison analysis through concentrating on set–subset relationships (Fiss, 2011; Misangyi et al., 2016). By leveraging on Boolean algebra, fsQCA identifies only the simplified configurations of attributes that are related to a specific outcome (Ganter & Hecker, 2014; Woodside, 2013). Scholars are continuously acknowledging that the application of fsQCA in strategy and organisational studies can propose novel insights to

analyse configurational relationships and complex strategic issues and this is evident in the proliferating studies that applied fsQCA in well-known management and business journals (Aversa, Furnari, & Haefliger, 2015; Ganter & Hecker, 2014; Misangyi & Acharya, 2014).

Even though some studies tried to shed light on the combinatorial effects of HPWPs on retention, the existing literature does not allow us to build configurational hypotheses; therefore, our study is exploratory. Thus, we propose:

Proposition.1 There are multiple complex configurations of HPWPs may lead to high employee retention.

Proposition.2 There is no single HR practice necessary or sufficient by itself to achieve employee retention.

Proposition.3 Any skill-enhancing practice needs to be configured with one or two of motivation-enhancing practices for effective employee retention.

Proposition.4 The same HR practice may have a positive or negative influence on employee retention contingent to the other practices in the configuration.

3. Methodology

3.1 Sample

Our sample includes 232 top managers (managing directors and members of executive boards, respectively) of manufacturing companies from Austria and Hungary. The two countries were chosen because they share a similar institutional background (both are members of the European Union) but differ in their cultural values (for example, in terms of power distance or future orientation)[1]. Thus, it is possible to control for a potential influence of cultural difference. Power distance could influence HPWP like employee participation. The degree of future orientation could have a potential effect on the use of career development and intensive training activities. To ensure cross-cultural comparability, the sample was taken from the same industries in both countries.

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[1] According to Hofstede, Austria has a power distance score of 11, Hungary of 46 – see https://www.hofstede-insights.com/product/compare-countries/; according to the GLOBE study, Austria has a higher value for future orientation practices than Hungary (see http://globeproject.com/results/countries/AUT?menu=list)

According to Samiee and Athanassiou (1998), a certain level of industry equivalence is necessary to create fairly homogenous cross-national samples and to attain more meaningful results. We used the CMDcomplete (Austria) and OPTEN (Hungary) databases to identify 1,859 top managers in two industries, food manufacturing and manufacturing of computers, electrical, electronic, and optical products, thus, taking different contexts that could influence HRM practices and employee retention rates into account.

3.2 Data collection

Following Dillman et al. (2009) advice, managers were contacted via personalized e-mails in three waves during May 2013. 210 e-mails were rejected by the e-mail servers, resulting in 1,649 (917 in Austria, 732 in Hungary) effectively contacted managers. We received 335 answers (a gross response rate of 20.3 percent), of which 232 were completed questionnaires filled out by top managers (a net response rate of 14.1 percent – as 232 out of 1,649 is 14.1%). We did not control for non-response bias, as we did not have exact demographical data about the overall population (other than country and industry). What we could do, however, to mitigate the risk of non-response bias is to compare early and late respondents in our sample, as it has been found that late respondents can be similar to non-respondents (see Armstrong & Overton, 1977).

3.3 Instrument design and measures

For the constructs and items, we relied on the HPWPs literature as a basis to create our first version of the survey instrument (Arthur, 1994; Batt, 2002; Huselid, 1995; Kerr, Way, & Thacker, 2007; MacDuffie, 1995; Patel & Conklin, 2012; Sels et al., 2006; Wright, Gardner, Moynihan, & Allen, 2005). Some questions were reformulated due to the peer review. After the pre-test and a preliminary factor analysis, some items in the questionnaire were removed, others were reformulated to achieve more clarity. Following revision after a peer review by other researchers, the instrument was piloted. We sent it to approximately 10 percent of the target population, yielding 17 completed questionnaires, which were then analysed regarding the internal consistency of the scales, that led to minor adaptations of the final instrument. The questionnaire, originally developed in English, was translated into German and Hungarian. Standard back-translation

procedures (Brislin, 1970) were used to ensure cross-cultural consistency. Only a few words were changed because of the back-translation.

HPWPs were measured with 30 items on a five-point Likert-type scale (from 1=very little or no importance to 5=very important) in six categories (see Pittino et al., 2016). As for skill-enhancing practices, (1) selective staffing [SS] was measured through 4 items (related to having a structured staffing process, using structured selection techniques, applying clear hiring criteria, and a systematic evaluation of recruitment and selection processes); α=.822); (2) intensive training [IT] 5 items (related to giving priority to training, providing training for new recruits, offering different kinds of formal training to the existing staff, having a strategic training plan, and measuring the effectiveness of trainings; α=.836); (3) the same for career development [CD] 5 items (connected to offering non-managerial staff hierarchical and/or functional career options, relating the appraisal system to succession planning, and making different career models available to employees; α=.776).

For the motivation-enhancing practices which include (1) extensive compensation and benefits [EC], 4 items (related to a high average compensation compared to the industry average, merit-based compensation, extra benefits for employees, and the availability of company performance-based reward systems; α=.698); (2) performance appraisals [PA] 5 items (relevant to regularly conducting performance appraisals, having clear procedures for performance appraisals in place, linking performance appraisals to rewards and benefits, orienting performance appraisals toward giving feedback on the development of employees, and assessing both past performance and future potential in performance appraisals; α=.835). Finally, for the opportunity-enhancing practices, employee participation [EP] was measured through 7 items (related to the autonomy of employees to organize their work, ensuring employee representation in management meetings, employee influence on management decisions, consideration of employees' opinions, regular information sharing on company strategy and performance, employees' participation in formal work teams, and access to a fair complaints process; α=.786).

Following some authors (Delaney & Huselid, 1996; Shaw et al., 2009), we use the subjective assessment of top managers of their company's performance in retaining

employees compared to the industry average (on a five-point Likert-type scale from 1 ["significantly below industry average"] to 5 ["significantly above industry average"]) as a measure for employee retention. We preferred the managerial assessment method to a seemingly more objective direct question about the exact retention rate as: (a) we assumed that exact retention rates are not always present in the minds of top managers who are filling out a questionnaire; (b) there are different ways of calculating retention rates; (c) retention rates can vary from year to year; (d) what is considered a "good" objective retention rate compared to the competition can vary from industry to industry, and even from one type of firm within an industry to another; and (e) prior research found a strong correlation between subjective and objective measures of employee retention (see Dess & Robinson, 1984).

Harman's one-factor test (Harman, 1967; Podsakoff et al., 2003) was used to test for common method bias. A factor analysis of all items in the instrument resulted in eight factors that together accounted for 65.5 percent of all variance. No single factor accounted for more than 14.9 percent of the variance, indicating that common method bias is not an issue of major concern.

3.4 Data analysis through fsQCA

FsQCA is designed to uncover how combinations of causes relate to a particular outcome (Fiss, 2007), by presenting each case as a configuration of conditions (C. Q. Schneider & Wagemann, 2010). It examines the necessity or sufficiency relationships between conditions and a given outcome. A condition is necessary if the outcome is always related to it and can be sufficient if it implied that outcome. Furthermore, fsQCA can categorize conditions into core or peripheral conditions. Core conditions have a strong causal relationship with a given outcome and they appear in both parsimonious and intermediate solutions, while peripheral conditions that appear only in the intermediate solution and have weaker relationships (Fiss, 2011).

3.4.1 Data calibration

Calibration is a vital process by which FsQCA provides a more "fine-grained" data description through "fuzzy" membership, unlike conventional techniques that consider all variance as equal (Crilly, 2011). It begins with calibrating study's variables through a gradual assessment of a set-membership that takes any value between 0 and 1. That is, (1) (full membership), (0.5) the cross-over point, neither in nor out, and (0) full non-membership. In calibrating survey scale values like, a 5-point Likert scale, authors (e.g., Ordanini, Parasuraman, & Rubera, 2014) suggested using fixed values to allow comparability. They demonstrated that the values' linguistic form of Likert scale interprets them into fuzzy-sets (e.g., Farivar, Cameron, & Yaghoubi, 2016). Put differently, the value 5 (strongly agree) would be calibrated into 1 (full-membership), 3 (neither agree, nor disagree) into 0.50 (cross-over point) and 1 (strongly disagree) into 0 (full non-membership). This approach would have included most of the cases among the 'more in than out' and 'fully in' sets as most of the companies employ HPWPs to some extent. However, in our study, it yielded less meaningful findings where all causal practices identified as necessary (Plewa et al., 2016).

Table 1 shows that all conditions and the outcome were calibrated based on the direct method using percentiles; 90%, 50%, 25% as full- membership, cross-over point, and full non-membership (Fiss, 2011). We added the value (0.001) to the variables below the full-membership to allow analyzing the exact 0.5 membership score.

Table 1. Descriptive statistics and calibration values

		Per_ret	**SS**	**IT**	**CD**	**EC**	**PA**	**EP**
N	**Valid**	232	232	232	232	232	232	232
	Missing	0	0	0	0	0	0	0
	Mean	3.64	4.05	3.65	3.66	3.73	3.32	3.72
	Std. Deviation	.63	.59	.92	.80	.76	.85	.80
	Minimum	1.93	2.50	1.00	1.00	1.50	1.00	1.00
	Maximum	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Calibration values based on percentiles								
0.05 (full non-membership) <	**25th**	3.18	3.56	3.00	3.20	3.25	2.75	3.20
0.5 (cross-over point) =	**Median**	3.71	4.00	3.75	3.80	4.00	3.50	3.80
0.95 (full membership) >	**90th**	4.45	4.92	4.75	4.60	4.67	4.50	4.80

3.4.2 Necessity Analysis

This analysis examines the necessity relationship between the presence or the absence of HPWPs and employee retention. Ragin (2008) states that a condition or a combination of conditions is considered "necessary" or "almost always necessary" if the consistency value exceeds the threshold of 0.90. Table 2 displays that all consistency scores are below 0.90 denoting that there is no single practice is necessary to achieve retention by itself or by its absence.

Table 2. Analysis of necessary conditions

Conditions	Consistency	Coverage
Outcome variable: Employee retention		
Skill-enhancing Practices		
f_ss	.620	.743
~ f_ss	.532	.568
f_it	.595	.738
~ f_it	.557	.578
f_cd	.578	.780
~ f_cd	.590	.574
Motivation-enhancing Practices		
f_ec	.636	.744
~ f_ec	.525	.573
f_pa	.623	.748
~ f_pa	.554	.591
Opportunity-enhancing Practices		
f_ep	.585	.726
~ f_ep	.572	.594

3.4.3 Sufficiency Analysis

Analyzing sufficiency relationships requires constructing, redefining and analyzing the truth table. The table has 2^6 rows, as 6 is the number of causal conditions used in the analysis. It also contains all the possible combinations of the 6 conditions, either represented in the cases or not (Ragin, 2008). In the truth table, cases are sorted based on the value they show on these conditions. It includes all possible configurations of causal sets; each row presents one configuration. Some rows may have many cases or few cases, while other rows may have none. The truth table also shows which configurations of conditions present the outcome.

To consolidate the truth table, we reduced the number of rows by including only meaningful configurations with minimum two empirical cases using the cut-off 0.80 as a consistency value as suggested by the seminal paper of Fiss (2011) and the most recent one by Misangyi & Acharya (2014). Also, 0.819 appears to represent the natural break in the raw consistency scores (Crilly, 2011).

4. Results

Based on the intermediate solution, *Table 3* shows five configurations assessed with respect to consistency and coverage (Ragin, 2008).

Table 3. Configurations leading to employee retention

	1	2	3	4	5
Skill-enhancing practices					
SS	⊗	⬤		⬤	⬤
IT	⊗		●	●	●
CD	⊗	●	●		⬤
Motivation-enhancing practices					
EC		●	●	●	⬤
PA			●	●	
Opportunity-enhancing practices					
EP	⬤		⬤	⬤	
Raw Coverage	.215	.344	.282	.286	.285
Unique Coverage	.110	.091	.024	.026	.028
Consistency	.805	.871	.834	.825	.828
Overall solution coverage		**.562**			
Overall solution consistency		**.813**			

NB: (⬤) denotes the presence of a core condition, (●) presence of a peripheral condition, (⊗) indicates the absence of a core condition. Blank cells reflect not binding conditions.

The analysis reports the values of coverage (raw, unique), and the consistency of each configuration and for the overall solution. Raw coverage reflects the degree to

which the configuration accounts for the outcome, while unique coverage indicates the proportion of outcome cases that are covered only by a given configuration. The consistency of each configuration refers to the proportion of outcomes predicted by that configuration.

All configurations show a consistency score between 0.81 to 0.87, implying that they are sufficient to achieve high employee retention. Configuration 2 with the highest raw coverage implies the most empirical relevant configuration to induce retention. The overall consistency of the model (a measure of "goodness of fit") yields .813 implying that "solution terms and the solution as a whole are subsets of the outcome" (Ragin, 2008, p. 85). Results also display the overall solution coverage which is analogous to the effect size in regression methods that reflects the degree to which a given outcome can be generated through the resulting configurations (Woodside, 2013). It equals (.562) meaning that the five resultant HPWPs configurations accounted for a substantial part of the sample to achieve high retention.

The configurations explicitly show the combinatorial effects of practices. For example, configuration 1 (consistency= 0.805) shows that when skill-enhancing practices (selective staffing, intensive training, career development) are absent, the opportunity-enhancing practices (employee participation) are sufficient to retain employees by itself since it is presented as a core condition. Also, when training is present, retention is obtained by a complex configuration of other practices. In particular, solutions 3 (consistency= 0.834), 4 (consistency= 0.825) and 5 (consistency= 0.828) suggest that intensive training is the most problematic among the skill-enhancing practices, as it always requires being combined (Marler, 1998; Takeuchi et al., 2003) with employee participation (as a core condition) and with one or two motivational practices according to the presence or the absence of selective staffing or career development.

This is compatible with Kadiresan et al. (2015) findings that training needs to be combined with performance appraisal to influence retention. However, when skill-enhancing practices form a complete bundle (solution.5), or do not include intensive training (solution.2), there is no need to adopt other practices. In configurations 3 and 4, selective staffing and career development appear to be substitutes when all the other

practices are implemented. Overall, findings show support for study's propositions. First, equifinality was approved by the five resultant configurations that sufficiently lead to employee retention (Proposition.1). Second, from the necessary analysis no single HR practice is necessary by itself to promote (Proposition.2).

Also, all configurations (Table.3) display that no single practice of HPWP is sufficient to lead to retention. For Proposition 3, is supported by the configurations (2,3,4,5). For example, skill-enhancing practices found to be combined with either extensive compensation or performance appraisals or both to produce high retention. Proposition 4 is proved by configuration 1 where the absence of skill-enhancing practices is complemented by the presence of employee participation thus lead to employee retention.

5. Discussion

We discuss here how the resultant solutions represent distinctive types of company-level approaches to HRM expressed in terms of bundles leading to high levels of employee retention. Configuration 1 has unique characteristics among the five solutions and identifies firms that invest in employees' empowerment and autonomy, exclusively, on the democratic/participative elements to achieve employee retention. Hence, in a situation where competence and human capital are not considered as a key dimension of the HR strategy, the emphasis is on promoting voice, perception of fairness and mechanisms for the resolution of conflicts.

Configuration 2 is well suited for companies that adopt the external labour market as a reference for HRM policies. Selective staffing is a core condition, whereas intensive training is irrelevant. Firms in this configuration focus on recruiting talented employees that are highly valuable in the labour market and are motivated mainly by market incentives, like extensive compensation and career development. Participation mechanisms do not exist in this type of firm, because employees have a strong bargaining power and voice is replaced by exit signals.

Configuration 3 identifies firms that privilege the internal labour market in their HRM strategies. These companies adopt intensive training practices, aimed at developing

employees' human capital in relation to the organisational needs. This is consistent with the fact that selective staffing is irrelevant. Unlike configuration 2, in firms adopting configuration 3, the competences developed within the organisation are more important than those available in the labour market. The focus in this type of company is the creation of a long-term commitment from the employees who benefit from significant investments in training. Career development, compensation, performance appraisal and participation need to be jointly adopted to avoid the loss of the internally grown human capital.

Configurations 4 and 5 combine selective staffing and intensive training. These solutions might belong to those companies that in the process of recruitment and selection prioritise the value congruence and cultural dimensions, and place relatively lower importance on ability and skills, as they are developed through the intensive training activities. This suggests the prevalence of a community component in the HR system, with significant levels of knowledge and value sharing and a primary role of identity and cohesion. The participation mechanisms, present as a core condition, provide the essential complements in the community models, namely joint decision making, norms of reciprocity and complex problem-solving capacity (Grandori & Furnari, 2008).

5.1 Implications for theory and practice

The relationship between human resource management, particularly, HPWPs and employee retention is well-studied in the relevant literature. Nonetheless, this study represents the HPWPs-employee retention relationship from a configurational perspective. This allowed us to contribute to the germane existing research in various ways. First, in addition to the assertion of the positive role of HPWPs in retaining valuable and qualified employees, this study identified different coherent combinations of HPWPs that can enhance talented employees retention. Guthrie (2001) suggested that to decrease employee turnover, it is recommended to adopt additional HPWPs. However, our study argues that it is not a matter of only adding more HPWPs, but how to choose the right HR practices that can increase the rates of retention.

This is likely to consider the complementary effects and interdependencies among HPWPs. Therefore, our second theoretical implication is the contribution to the ongoing

debate on whether different HPWPs are complementary or substitutes. This can be clearly seen through providing an empirical evidence of configurations in which complementarities of practices are in place. This is clearly explained by the evidence of selective staffing. That is the positive influence of selective staffing would be greater only if it is combined with coherent motivation and opportunity enhancing practices (Delery, 1998), which emphasizes the efficacy of employing the configurational perspective in addressing this topic.

Third, findings explained five configurations of HPWPs that can positively influence employee retention which confirms the principle of equifinality (Delery & Doty, 1996; Gresov & Drazin, 1997). As all of the displayed configurations are shown to be potentially equal solutions to boost staff retention (Fiss, 2007; Gresov & Drazin, 1997; Kepes & Delery, 2007). This leads us to the fourth contribution of the current study. It was rather difficult to empirically account for equifinality through traditional statistics methods (Delery, 1998; Renkema, Meijerink, & Bondarouk, 2017). However, performing fsQCA provided a differentiated view and insights to the HPWPS-retention relationship through accommodating equifinality. Moreover, it allowed to test which of HPWPs is necessary or sufficient to lead to retaining employees.

Fifth, even though none of the six HPWPs is necessary or sufficient by itself to enhance employee retention, fsQCA highlighted another interesting finding that the effects of HPWPs on retention depends on which of the HPWPs is present or absent. For example, in configuration 1, opportunity-enhancing practices (employee participation) can reinforce retention if the skill-enhancing practices (selective staffing, intensive training, career development) are absent, because employee participation was shown as a core condition. Lastly, fsQCA allowed to distinguish between the six HPWPs in terms of which is core or peripheral. Four of HPWPs (selective staffing, career development, extensive compensation, and participation) were presented as key core conditions; meaning that they have a strong relationship in influencing employee retention more than intensive training and performance appraisals.

Employee retention continues to be a major challenge for contemporary organizations. Therefore, how to increase workforce retention and reduce employee

turnover is placed at the top of HR departments' agenda. The existing literature continuously emphasizes the importance of HPWPs on a wide set of organisational outcomes and scholars identified about sixteen HPWPs that could improve performance (Pfeffer, 1998). However, it is rather difficult for firms to invest in all of those HR practices to advance their performance. Therefore, in terms of employee retention, our study findings suggest that it is not necessary to invest in the whole array of HPWPs to retain the workforce since the results imply that HPWPs do not "necessarily co-occur".

The five resultant configurations are likely to provide HR executives with an insightful explanation of how HPWPs can yield greater impact in boosting retention rates. As these configurational paths show how HPWPs combine and complement each other to generate the outcome of retention. Therefore, firms should capitalize more on those complementary HPWPs and their synergistic combinations. Hence, our findings act as a potential guide not only to assist HR directors and managers in selecting the right set of HPWPs to reduce turnover and increase the rates of employee retention, but also to choose the appropriate solution in accordance to with HR strategies and policies they adopt as detailed in the discussion section.

5.2 Limitations and future research

Our study has some limitations that need to be acknowledged in future research. First, the cross-sectional data and self-report responses. Second, we chose only six HPWPs out of sixteen because those practices are the most frequently used and praised by authors identified in the literature. We might consider other HPWPs to investigate their association with employee retention. Third, drawing on data of manufacturing firms in the European context may limit the generalizability into service context considering that the effects of HPWPs are stronger in manufacturing companies than in service ones (Subramony, 2009). However, this could be tackled by applying the same study into service sector and to other contexts, like American, Chinese to allow for comparison. Methodologically, fsQCA has some practical limitations. Ragin (2008) suggested that using percentile-based thresholds and distribution could increase the accuracy of the calibration process, notwithstanding, this might be a limitation of our study. Hug (2013) also mentioned that fsQCA does not assess for measurement error (Type 1).

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THE EFFECTS OF CROSS-LEVEL INTERACTIONS BETWEEN HUMAN RESOURCE SYSTEMS AND RELATIONAL CLIMATES IN PREDICTING EMPLOYEE CREATIVITY: A MULTI-METHOD STUDY

Abstract

Emphasizing the organizational context influential role and synthesizing literature of creativity, HR systems, and relational climates, this study developed a multilevel model to examine the cross-level effects of interactions between HR systems and relational climates in predicting contexts for employee creativity. Using a mixed-method design and drawing on data obtained from survey questionnaires 282 employees nested in 69 teams and two exploratory case studies, our findings suggest noteworthy insights that the interactions effect between commitment-HR and communal-sharing climate are non-significant for employee creativity. Likewise, the interaction between compliance-HR and market-pricing climate. However, only a commitment-based HR system has shown to be important to boost employee creativity. Nonetheless, based on the case studies findings, it is not sufficient by itself, instead, the relational climate that permeates the workplace is also vital for creative ideas generation. Theoretical contributions, managerial implications, along with future research suggestions are discussed.

Keywords

Organizational context, commitment HR system, compliance HR system, communal-sharing relational climate, market-pricing relational climate, multilevel analysis

1. Introduction

"Only by using multiple lenses simultaneously, looking across levels, and thinking about creativity systematically, will we be able to unlock and use its secrets" (Hennessey & Amabile, 2010, p. 590)

Being crucially important for business innovation and competitive advantage (Barney, 1995; Zhou & Hoever, 2014), firms are persistently striving to promote and capitalize on employee creativity (Škerlavaj, Černe, Dysvik, & Carlsen, 2016). Academia is not an exception as scholars are increasingly devoting substantial effort to understand what prompts individual employees to generate novel and useful ideas (Zhou & Shalley, 2003). Research findings confirmed that employee creativity is a product of different elements of the broader organizational context (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Choi, 2004; Oldham & Cummings, 1996). Johns (2006, 2017) demonstrated that organizational context includes opportunities and situational constraints at multiple levels that influence individuals' attitudes and behaviors. However, most of the extant studies that investigated organizational context effects on employee creativity examined factors at a single level (organizational, or team or individual) (e.g., Chae, Seo, & Lee, 2013; Tang, Yu, Cooke, & Chen, 2017; Zhou & George, 2001). In most often, they examined context factors in isolation from other contextual elements which neglects the potential interdependency and the joint effects of interaction between context factors across levels (Johns, 2006; Shalley & Gilson, 2004; Shalley, Zhou, & Oldham, 2004).

Woodman et al. (1993) in their interactionist model argued that cross-level effects are crucial to identify and realize organizational and group-level factors or characteristics that foster or curb creativity at the individual level (Shalley & Zhou, 2008). Researchers in this regard suggested that studying the effects of context factors at organizational/unit-level could provide a more holistic and integrative view concerning various behaviors like creativity (Johns, 2006; Shalley & Gilson, 2004). In this vein, Mowday & Sutton (1993) further suggested integrating more than one level when examining context effects on different outcomes. Along the same line of argumentation, scholars (e.g., Amabile, 1983; George, 2007; Liu, Chen, & Yao, 2011; Woodman, Sawyer, & Griffin, 1993)

established the necessity of including team-level factors to comprehend the joint influences of cross-level context factors on individual creativity. They additionally provided that it offers an in-depth understanding of the nested structure of organizational context in which creativity occurs (George, 2007; Hennessey & Amabile, 2010; Liu et al., 2011). Hence, this study includes team-level factors in addition to unit-level factors to advance our understanding of employee idea generation (Woodman et al., 1993). Particularly, we aim at examining the role of the interaction between two of the most prevalent influential elements of organizational context at unit-level (macro) and team-level (meso); HR systems (Lepak & Snell, 1999, 2002) and relational climates (Fiske, 1992) on employee creativity as a highly desirable outcome in contemporary organization.

HR systems and climates have been recognized among the most effective context factors that affect individuals' performance within organizations (Batistič, Černe, Kaše, & Zupic, 2016; Ferris et al., 1998; Kuenzi & Schminke, 2009). Scholars viewed both HR systems and climates as two interdependent factors that when examined in combination can exhibit greater synergistic effects on employee's attitudes and behaviors like proactivity and mutual helping (Batistič et al., 2016; Bowen & Ostroff, 2004; Gelade & Ivery, 2003; Mossholder, Richardson, & Settoon, 2011). HR systems are considered as vital context elements for employee creativity, specifically, high-performance work systems or high-commitment systems (e.g., Chang, Jia, Takeuchi, & Cai, 2014; Shin, Jeong, & Bae, 2016). Through their top-down effects on lower levels variables, HR systems can influence various outcomes by creating diverse settings and contexts that shape and promote employee's attitudes and behaviors (Jiang, Takeuchi, & Lepak, 2013; Tsui, Pearce, Porter, & Tripoli, 1997). Moreover, HR systems have been argued to communicate messages to employees thus help them develop perceptions and interpretations about what is desirable or discouraged in the workplace (Bowen & Ostroff, 2004).

Relational climates, on the other hand, have been long recognized as context factors that refer to employees' shared perceptions and interpretations about practices, policies, and behaviors that influence and coordinate their interpersonal relationships with

others in the workplace (Fiske, 1992; Mossholder et al., 2011). Such factors provide a context for enhancing or buffering various behaviors and actions. Fiske (1992), based on the relational model theory derived four fundamental schemas of interpersonal relational climates that manifest when individuals engage in transactions in a dyad or a group like bilateral exchanges or distribution; (1) communal-sharing, (2) equality-matching, (3) authority-ranking, and (4) market-pricing. House and colleagues (1995) suggested that climate at team-level is more strongly relevant to employees behavior when considering the impact of climate, because it is a collective phenomenon that emerges when individuals interact with each other and exchange ideas based on their aggregate interpretations and expectations concerning what encouraged and rewarded by their organizations (Kozlowski & Klein, 2000; Schneider & Reichers, 1983; Scott & Bruce, 1994).

Interestingly, to the best of our knowledge HR systems and relational climates have not been yet examined together to predict creativity at the individual level, although many scholars advocated for addressing contextual factors on creativity across levels (e.g., George, 2007; Liu, Chen, & Yao, 2011; Woodman et al., 1993). Therefore, our study basically seeks to examine the role of cross-level effects of two specific HR systems and two relational climates in creating contexts and situations in which employee creativity is enhanced. In particular, we argue that the interplay between a commitment-based HR system and a communal-sharing climate would create an ideal positive situation for employee creativity. Likewise, driven by the premise of the power of negative forces (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Choi, Anderson, & Veillette, 2009), we posit that the interaction between a compliance-based HR system and a market-pricing climate might create positive settings for employee idea generation.

This study contributes to theory and research in various ways. First, examining the joint cross-level influence of unit-level and team level context factors should offer a more integrative view of the mechanisms that generate employee creativity. It further contributes to bridging the gap between micro, meso, and macro research in creativity field thus answering the growing calls to capitalize more on a multilevel perspective in HRM (Den Hartog, Boon, Verburg, & Croon, 2013; Wright & Boswell, 2002) and

creativity (Drazin, Glynn, & Kazanjian, 1999; Zhou & Su, 2010). Second, we integrate two contextual factors; firm-level HR systems with team-level relational climate to examine their interplay effects on individual creativity, which overcomes the limitation of the prevalent "piecemeal manner" in organizational context studies. Third, including emergent relational climates will enhance the debate about the effects of intentionally planned versus spontaneously emergent context factors (Andersen & Nielsen, 2009). Finally, investigating two different HR systems and relational climates would allow the comparison between contexts in generating employee creativity (Batistič et al., 2016; Su, Wright, & Ulrich, 2015). Practically speaking, this study should assist companies to model and structure the optimum context settings to streamline employee creative idea generation that ultimately enables to channel those ideas into actual processes or products.

2. Theoretical background and hypotheses

Employee creativity is gaining an ever-growing business and scholarly interest. Thus, a persistent need for a thorough understanding of how the interplays among contextual factors influence individual creativity in the workplace (Amabile et al., 1996; Shalley & Gilson, 2004; Zhou & Shalley, 2003). Even though there is no single consensual definition of employee creativity, it is widely believed that employee creativity involves generating original and feasible ideas and solutions for better business performance (Škerlavaj, Černe, & Dysvik, 2014; J. Zhou & George, 2003). Beyond personal dispositional features, prior research unveiled a wide set of contextual factors that can positively or negatively predict employee creativity through creating supporting or inhibiting contexts for breakthrough thinking and idea generation (e.g., Chang et al., 2014; Choi et al., 2009; Egan, 2005; Oldham & Cummings, 1996; Perry-Smith, 2006).

2.1 The multilevel model: HR systems and relational climates for predicting employee creativity

The organizational context, as defined by prior research, has profound effects on various outcomes through different manifestations such as configurations of stimuli or "top-down " cross-level moderators (Johns, 2006; Mowday & Sutton, 1993). We basically anchored on context approach (Johns, 2006, 2017) and multilevel logic

(Kozlowski & Klein, 2000) to develop a multi-level model that demonstrates how the cross-level interactions between specific planned HR systems and emergent relational climates influence employee creativity. Kozlowski & Chao (2012) mentioned that context effects and emergence are related and fundamental to understand behaviors in organizations. In this sense, the possible mutual interdependency between HR systems and climates has recently started to surface in organizational behavior research. A handful of studies proposed and examined the complementary effects of the potential interdependency between the two organizational context elements on behaviors and attitudes (e.g., Batistič et al., 2016; Mossholder et al., 2011).

In strategic HRM field, Lepak & Snell (1999, 2002) suggested four distinctive HR systems based on employment mode and relationship type (relational or transactional) that are; commitment, productivity/market, collaboration, and compliance or compliance based (Arthur, 1992, 1994). Our proposed model (*Figure 1*) includes the two diametrically opposing archetypes; commitment-based and compliance-based. These archetypes were particularly chosen to allow contrasting between both systems (Batistič et al., 2016; Su et al., 2015). In addition, they are widely examined as being the very core of HRM theory and are commonly adopted in organizations more than productivity/market- and collaboration-based HR systems. Commitment-based HR systems or high-performance work systems, regardless of terminology reflect people management practices that concentrate employee's well-being and welfare to target commitment towards their organizations (Sun et al., 2007; Walton, 1985; Wood & De Menezes, 1998). These systems offer various practices like selective staffing, training and development programs, suitable incentive and rewards, flexible work schedules, periodic performance appraisals and constructive feedback, autonomy, and empowerment in decision-making processes (Lepak et al., 2006). Employees in commitment-based systems are treated as valuable assets and enjoy long trusting relationships as they are internally developed (Lepak & Snell, 1999, 2002).

On the contrary, compliance-based HR systems are transactional systems that assign most emphasis on ensuring employee's compliance and conformance to preset rules and protocols (Lepak & Snell, 2002). Core to these systems that individuals are

externally motivated thus must be controlled through extensive monitoring to maintain their engagement in accomplishing organizational goals (Boxall & Macky, 2009). Individuals who operate under similar systems receive little training and development opportunities as their firms are less motivated to develop long-term relationships with them thus, continuously cut and reduce labor costs (Arthur, 1994). As such, they believe that employees' human capital is not firm-specific and readily obtainable in the market. Firms that adopt similar systems offer fixed work schedules, weak compensation systems based on achieving certain tasks, judgmental feedback and appraisals, and limited autonomy and discretion (Arthur, 1992; Lepak & Snell, 1999).

The second component of our model is the relational climate. In their study of HR systems and helping behavior, Mossholder and co-authors (2011) presented relational climates as "shared employee perceptions and appraisals of policies, practices, and behaviors affecting interpersonal relationships in a given context." (p. 36). Relational climates are basically viewed as schemata that individuals adopt to construct and structure their social interactions and relationships (Fiske & Haslam, 2005) to engage in various actions and behaviours such as knowledge sharing behavior (e.g., Boer & Berends, 2003; Boer, Berends, & van Baalen, 2011) and proactive behavior (see Batistič et al., 2016). Hence, the rationale for including relational climates is because they constitute another dimension of organizational context that enhance or constrain worker's behaviors and attitudes through shared perceptions and communication. However, they differ from HR systems in terms of that they emerge over time spontaneously as a result of frequent interaction and communication with other organizational members (Fiske, 1992; Kozlowski & Klein, 2000).

In a communal-sharing climate, individuals feel equivalent to other organizational members. This climate underlies the importance of commonalities since individual distinct identities are discarded. Self-concerns are blurred as employees are driven by the principle of "what is mine is yours" (Fiske & Haslam, 2005). For example, an employee does not need to endow something to get another thing in return as it is adequate to belong to the same group to be entitled to freely use all available resources. Common to this climate that an employee enjoys enduring and caring relationships where a sense of

commitment, trust, and safety prevail which in turn, prompts intrinsic motivation to act in favor of their organizations (Clark & Aragón, 2013). Tasks in the context of communal-sharing are considered as a collective responsibility and all pitch in without tracking others' contributions (Fiske, 1992). On the other part of the continuum, the market-pricing climate which is proportions-driven. A typical question in this climate is "Is what I'm getting out of this relationship proportional to what I'm putting into it?" (Haslam, 2004, p. 6). Relationships in this climate are called exchange relationships that are mainly based on cost-benefit ratios and calculations of expected utilities (i.e., money). Consequently, relationships in this climate are short-ranged and extremely transactional (Boer et al., 2011; Clark & Mills, 1993; Fiske, 1992).

Figure 1 - The multilevel model
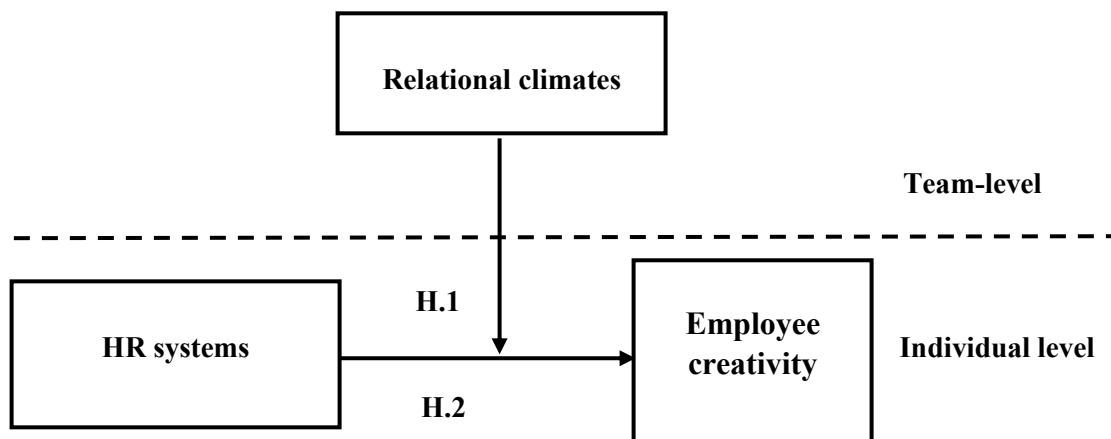
2.1.1 The supporting context and individual creativity

Following the mainstream of employee creativity literature, a positive supporting creativity context includes sufficient resources and features empowerment, trust, autonomy, collaboration, equality, constructive feedback, and frequent development of individuals (Amabile et al., 1996). Similar contexts communicate messages to employees that they are valuable organizational members and their organizations are interested in constructing long-lasting trusting relationships with them (Bowen & Ostroff, 2004). This is likely to enhance employees' perceptions of trust and collective commitment which

stimulates their intrinsic motivation and encourages them to reciprocate with desirable attitudes and behaviors like creative idea generation (Sun et al., 2007). We propose that such contextual cues are likely to result from the interplay between a commitment-based HR system and a communal-sharing climate.

A commitment-based HR system speaks about a set of HR practices deliberately bundled to foster employees' skills, motivation, and participation, thus shape their attitudinal and behavioral aspects through targeting their commitment (Whitener, 2001). Further, commitment HR systems are established to create a facilitative workplace that promotes communication, collaboration, information exchange, and knowledge combination, which in turn, boosts individual creativity (Chang et al., 2014; Tang et al., 2017). For example, these systems start from selectively recruiting employees with creative skills and attitudes then develop their competencies (e.g., divergent thinking, problem-solving) through offering creativity-oriented training programs (Martinaityte et al., 2016). Besides that, employees are rewarded based on their creative performance and outcomes. They receive developmental performance appraisals and guiding feedback which reinforces their feelings of safety to think creatively. The flexible work hours and schedules along with participation and empowerment allow greater discretion and autonomy for employees to generate novel and feasible ideas and solutions (Chang et al., 2014; Shalley & Gilson, 2004). These practices collectively communicate messages to employees that creativity or breakthrough thinking is encouraged which stimulates employee's intrinsic motivation that is a crucial prerequisite for idea generation (Amabile, 1988; Amabile, Hill, Hennessey, & Tighe, 1994). As a result, employees tend to communicate and exchange knowledge with others within the workplace to cross-fertilize their ideas and come up with creative solutions (Leenders, Van Engelen, & Kratzer, 2003).

At this point, we discuss that the presence of a communal-sharing climate is likely to foster knowledge sharing and information exchange. That is, a communal-sharing climate creates shared situations where employees continuously interact, communicate and therefore collaborate effectively and are likely to generate creative ideas for better performance outcomes (Boer, van Baalen, & Kumar, 2004; Fiske & Haslam, 2005).

Within communal-sharing settings, knowledge is not an employee property, instead, it is treated as a free resource that is available for all and is shared in favor of other fellows without expecting any return (Boer & Berends, 2003; Boer et al., 2011, 2004). We therefore argue that the communal-sharing climate complements and doubles the effects of commitment HR system on employee creativity as both are largely driven by collective commitment. The prevalent sense of trust, belonging, and solidarity in communal-sharing climate supports perceptions of safety to generate and suggest more creative solutions (Fiske & Haslam, 2005). Thus, we hypothesize that the joint presence of a commitment HR system and a communal-sharing climate is likely to provide the necessary situational cues for creativity at employee-level. Moreover, their cross-level interaction creates a creativity nurturing context. Thus,

Hypothesis 1. Employee creativity is high in organizational context in which a commitment-based HR system interplays with a communal-sharing relational climate.

2.1.2 The unfavorable context and individual creativity

In this paper, a negative context is presented by the concurrent presence of a compliance-based HR system and a market-pricing climate. The previous literature argues that individuals' behaviors are likely to be more strongly affected by negative conditions than by positive ones (Baumeister et al., 2001; Choi et al., 2009). Hence, we discuss that even disadvantageous contexts might stimulate employee creativity. Compliance-based HR systems are transactional systems that place most emphasis on employee conformity to rules by featuring excessive monitoring and formalization. In such systems, jobs are more fixed, routinized and standardized. Also, training and career development programs are limited, job-based compensation systems, low autonomy and empowerment, and rather evaluative feedback (Arthur, 1994; Lepak & Snell, 1999).

Although a series of studies (e.g., Mumford, 2000; Shalley, Gilson, & Blum, 2000; Shalley & Perry-Smith, 2001; Zhou, 2003) argued the negative implications of compliance-HR practices on employee creativity, we propose that such systems might be stimulating and make creativity more likely. In support of this, in their study of work characteristics and creativity, Ohly and colleagues (2006) confirmed that routinization can enhance employee creativity. That is, routinized and standardized jobs save

employee's time and free up cognitive resources needed to accomplish tasks, thus managers can redirect them towards generating creative solutions. Choi et al., (2009) also found that close monitoring was positively correlated with employee creativity, especially, when supervisors provide employees with encouraging and developmental feedback, which enhance employee's inclination to submit more creative suggestions (Ohly et al., 2006).

A market-pricing climate explains the second element of our proposed context. Relationships in this model are rather short-term, transactional, calculative, and based on ratios and means-ends of a certain exchange (Fiske, 1992; Fiske & Haslam, 2005; Mossholder et al., 2011). Employees in such a climate are not interested in initiating any relationship with other fellow-workers unless there is a benefit from it. Therefore, they calculate and analyze if benefits exceed the costs (Ferris et al., 2009; Fiske, 1992). Lin et al. (2012) stated that "in the relations of market pricing, employees ignore all relevant features and components under consideration to a single tangible value، mostly in the form of monetary compensation, which can enable a cost/benefit analysis from qualitatively and quantitatively diversified factors" (p.753).

In the relevant literature, a compliance-based HR system and a market-pricing climate are deemed as transactional context elements by their nature (Fiske, 1992; Lepak & Snell, 1999, 2002; Mossholder et al., 2011). Therefore, we propose that their cross-level interaction effects may substitute their negative influences on employee creativity. To illustrate, in the settings of a compliance-HR an employee subjects to close monitoring and surveillance, thus more informational feedback that can help in developing more creative ideas. This might signal messages that creativity is desirable and expected. This can enhance employees' perceptions that creative idea generation is welcomed. Moreover, since employees in compliance HR systems are externally motivated (Lepak & Snell, 1999), they share knowledge because they will receive incentives or comparable rewards for it at the end (Boer et al., 2011, 2004; Lin et al., 2012). This is likely to enhance also the competition among employees which is seen as a potential predictor of individual creativity (Agars, Kaufman, Deane, & Smith, 2012; Baer, Leenders, Oldham, & Vadera, 2010). Hence, employees resort to the transactional

knowledge exchange with other co-workers to come up with creative solutions to accomplish certain career prospects or personal interests such as rewards or promotion.

Consequently, they are expected to be creative by the transactional bonds that dominate the market-pricing climate. As for the low trust that accrues from short-ranged relationships and monitoring in a compliance HR, Mossholder et al. (2011) claimed that it might be offset by perceptions of "trust grounded in the direct benefits anticipated from the relationship" (p. 38). Premised on that negative conditions may even have greater effects on individual's behavior, we hypothesize that the context where a compliance HR system co-exists with a market-pricing seems inhibiting and unfavorable, it might be a creativity stimulating context. Therefore:

Hypothesis 2. Employee creativity is high in organizational context in which a compliance-based HR system interplays with a market-pricing relational climate.

3. Methodology

3.1 Sample and procedure

We collected data from multiple sources. While we emphasized on online survey as the primary source of data, we complemented our data with two exploratory case studies that included semi-structured interviews, and available information on selected firms' websites (Eisenhardt, 1989). Surveys were distributed online through SurveyMonkey platform. The data was obtained from a final sample of 282 blue and white-collar employees nested into 69 teams with their supervisors in 38 different EU organizations located in the Netherlands between December 2017 and January 2018. Employees and teams were included on the sample upon a given advance consent of all team members. The overall response rate was (68.8). The employees were on average 37 years old (s.d. = 11.55). The data was analyzed through Hierarchical Linear Modeling (HLM) (Raudenbush, Bryk, & Congdon, 2004; Raudenbush et al., 2011). Roughly 63 percent of the employees were male. The average job tenure was 7.92 years (s.d. = 9.01). A translation-back procedure was used where needed to translate the scales (Brislin, 1986).

For study settings, all of the surveyed organizations included at least 50 employees to ensure the adoption of a formal HR system. The sample covered companies operating in diverse fields, like banking, food and beverage production, and electronic manufacturing. To mitigate common method bias issues, data was collected using two separate questionnaires: one for the employees and one for their supervisors to assess relational climates. Podsakoff et al. (2003) assert that this procedure can alleviate or even completely eliminate common method bias problems. Additionally, we performed Harman's single-factor test to assess the possible common method bias (Harman, 1967; Podsakoff et al., 2003). We inserted all measures' items into an exploratory factor analysis. The first factor showed 16.48% of total variance, denoting that the common method bias is not a problem.

In a subsequent step, we chose to enrich our findings with two case studies. Based on theoretical considerations (Boer et al., 2011; Eisenhardt, 1989), we selected two large private Slovenian companies; one operates in glass products manufacturing and the second is a consulting company who offers advisory services. Both companies were contacted and briefed about the interviews' topic. Confidentiality was guaranteed upon interviewees' request; so, fictitious names were assigned to ensure anonymity; Alpha for case 1 and Beta for case 2. We conducted four semi-structured interviews in companies' premises which allow us to gain onsite observations. Interview guide includes two sections of open-ended questions that were primarily derived from our survey (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). The first section for HR managers in which questions were mainly centered on the nature of implemented HR practices in their organizations and why, while the second section targets employees from different functional departments and includes questions about their perceptions and interpretations of HR systems/ practices and the dominant social climates and their relevance to their creativity. Follow-up questions were asked to illuminate responses and the same pattern of questioning was followed in both cases (for the interview guide, see appendix 3). Interviews were in English (interviewees have a good command of English) and lasted between 20 to 30 minutes and were audio recorded. We also used companies' websites' as a secondary source of data.

3.2 Measures

    HR systems; commitment (α=.84) and compliance (α=.87) were measured through 10 items each on a scale developed by Nishii, Lepak, & Schneider (2008) ranged from 1 ("strongly disagree") to 7 ("strongly agree"). The scale basically asked particular questions about strategic goals and attributions underlying HR systems, like service quality versus cost reduction. Also, questions relevant to employee-oriented philosophy; well-being versus exploitation in various HR practices such as hiring, training, rewards, etc. All HR practices began with the flavor text. For instance, the payment practice: "The organization pays its employees what it does", then the sample item for commitment was "… in order to help employees deliver quality service to customers" and the sample item for compliance was "… to try to keep costs down". An initial confirmatory factor analysis (CFA) showed 5 items with weak loadings less than 0.5. This might be ascribed to the fact that this scale was built and obtained from respondents in "a supermarket chain with stores that each contains approximately 18 departments" (Nishii et al., 2008, p. 21), whereas our sample involved different industries and companies that is likely resulted in varying perceptions and interpretations in understanding the attribution of the HR system adopted (Nishii & Wright, 2008). Thereby, removing those items resulted in 15 items; 6 items for commitment-HR and 9 items for compliance-HR.

    Perceived relational climate; communal-sharing and market-pricing (α=.75 and α=.81 respectively) were measured using a 16-item instrument (8 item for each climate) developed by Haslam & Fiske (1999). On a scale where response anchors ranged from 1 ("very untrue of these relationships") to 7 ("very true of these relationships"), line managers were asked to rate how they perceive relationships in their workgroups. The question was introduced in the following text: "Please rate the relationships among the people in your team on each of the following items". A sample item of a communal-sharing "If anyone in my team needs something, the others give it without expecting anything in return". An example of a market-pricing "What team members get from other people in your team is directly proportional to how much they give them."

    Individual creativity was measured through 13 items proposed and validated by Zhou and George (2001) (α=.90). The scale validity was verified in many studies (e.g.,

De Stobbeleir, Ashford, & Buyens, 2011; George & Zhou, 2007; Rego, Cunha, Reis Júnior, Anastácio, & Savagnago, 2018; Shin & Zhou, 2003; Zhang & Bartol, 2010). On a 5-point scale ranges from 1 (not at all characteristic) to 5 (very characteristic), a respondent is asked to rate his/her creativity. A sample question is "I suggest new ways to achieve goals or objectives". Again the CFA displayed two items with weak loadings (<0.50) which required deleting at a later point. This might be due to that in our study, the measure was reported by the employees themselves to rate their creativity, whereas in Zhou & George (2001) and the other studies cited, creativity was rated by supervisors. However, the two items exclusion resulted in 11-items scale.

*Controls, a*t the individual level, we controlled for the demographic information; age, gender, education, and job tenure as suggested by the prior literature. Tierney & Farmer (2002) found that gender relates to creativity. It was coded as 1 (male) and 2 (female). The education background was controlled through five dummy variables (elementary, basic, middle, higher, academic). Prior research suggested that employee educational level is likely to associate with creativity through task expertise and creative ideas suggestion for business improvement (Amabile, 1988; LePine & Van Dyne, 1998; Mumford & Gustafson, 1988). Further, the job tenure (in years) was controlled (How long have you been working in this organization?). All the compliances were self-reported.

3.3 Quantitative data analysis

3.3.1 Descriptive statistics, intercorrelations, and reliability

We commenced by performing a confirmatory factor analysis (CFA) using SPSS AMOS 21.0 (Arbuckle, 2012). We had to allow for correlation among specific errors among items in the same HR system, not only to improve the model fit, but also to handle "similarly worded test items" (Brown, 2014, p.46). At the individual-level, variables showed adequate fit with the data ($\chi^2_{(272)}$ = 475.011, normed $\chi2$= 1.7463, p < .05, CFI = 0.94, TLI = 0.93, RMSEA = 0.05). The standardized factors loadings ranged from .57 to .85 (see *Appendix 1*). The average variance extracted (AVE) values for individual-level variables were employee creativity = 0.46, commitment-HR = 0.44, and compliance-HR = 0.47 they could be accepted as they are closer to 0.50 (Fornell & Larcker, 1981).

Relational climates at the team-level explained a good fit ($\chi^2_{(103)} = 168.010$, normed $\chi^2 = 1.6311$, $p < .05$, CFI = 0.98, TLI = 0.98, RMSEA = 0.096). The standardized factors loadings also ranged from .88 to 99 and AVE values were >.50 for communal-sharing and market-pricing (.99 and .97 respectively).

Table 1 presents descriptive statistics (means and standard deviations) and correlations of all variables analyzed. We also tested for the correlation between HR systems and the relational climates to ensure that they are independent. Results indicated a very weak positive and non-significant correlation between commitment-HR and communal-sharing climate ($r = .008$), while a non-significant and weak negative correlation between compliance-HR and market-pricing climate ($r = -.116$).

Table 1 - Means, Standard Deviations, Correlations, and Reliability

	Variable	Mean	s.d.	1	2	3	4	5	6	7
Level 1 (individual-level)										
1	Individual creativity	3.60	.57	(.90)						
2	Commitment HR	4.68	.89	.06	(.84)					
3	Compliance HR	3.95	.96	.02	-.00	(.87)				
4	Age	37.82	11.55	-.02	-.00	-.12*	-			
5	Gender	1.37	.48	-.13**	-.07	.07	-.22**	-		
6	Education	3.91	.92	.12*	-.01	-.11	.02	.11	-	
7	Job tenure	7.92	9.01	.01	.03	-.05	.66**	-.15*	-.02	-
Level 2 (team-level)										
1	Communal-sharing	5.15	.66	(.75)						
2	Market-pricing	3.66	.94	.04	(.81)					

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Cronbach's alphas are displayed in the diagonal.

3.3.2 Hypothesis Testing: Cross-level interaction analysis

The data set consisted of two hierarchically nested levels: 282 employees (level 1) nested within 69 groups (level 2) each of which has one group supervisor/line manager. We used student version 7.03 of Hierarchical Linear Modeling (random coefficient modeling) (Raudenbush et al., 2011) to test three particular aspects of our model (Hox, 2010). First, the existence of a multilevel structure. Second, the cross-level effects of relational climates and HR systems on individual creativity, and lastly, the interaction

effects between relational climates, HR systems and individual creativity. For hypotheses testing, we used the incremental improvement procedure proposed by Hox (2010) to develop a set of multi-level models. The fixed effects for all models with robust standard errors are displayed in *Table 2*.

We started with the intercept-only model, which uses employee-rated individual creativity as the dependent variable (Model 1). Following the null model, level-1 control variables were added (see Model 1a). Then in model (2) we entered commitment HR and compliance HR to examine their effects as direct predictors of employee creativity. Likewise, model (3) includes the relational climates as predictors of individual creativity at level-2. To test the hypothesized cross-level interactions of HR systems and relational climates, we inserted commitment HR and communal-sharing and compliance HR and market-pricing respectively (model 4).

3.3.3 Results

Hypothesis 1 stated that employee creativity relates to a context in which a commitment-HR system and a communal-sharing climate exist. Our results (see *table 2*), however, show that the interaction found to be non-significant to predict employee creativity (interaction term= -.02, SE= .07). Further, Hypothesis 2 suggested that employee creativity is related to an organizational context in which a compliance-HR system and a market-pricing climate exist. Also, the interaction (model 4) was shown insignificant for individual creativity (γ= -.04, SE=.06). Thereby, contrary to our expectations, both study's hypotheses are not supported. Although not hypothesized, we examined the interactions between a commitment HR and market-pricing climate then the interaction between a compliance HR and communal-sharing climate (see model 5). Again, interactions were shown non-significant for predicting worker creativity. Regarding the direct effects, only the commitment HR system positively predicted individual creativity (γ=.10, SE=.04; Model 4), while the other direct effects of the (compliance HR system, and market-pricing and communal-sharing climate) were not significantly related to this outcome.

Table 2 - Multilevel Analyses Results (Individual creativity as the dependent variable)

	Model 1	Model 1a	Model 2	Model 3	Model 4	Model 5
Level 1						
Intercept	3.58 (.03)	3.58 (.03)	3.58 (.03)	3.58 (.03)	3.58 (.03)	3.58 (.03)
Age		-.00 (.00)				
Gender		-.26 (.11)				
Education		.02 (.06)				
Job tenure		.00 (.00)				
Commitment HR			.10* (.04)		.10* (.04)	.10* (.04)
Compliance HR			-.00 (.05)		-.00 (.05)	-.01 (.05)
Level 2						
Communal-sharing				-.05 (.04)	-.05 (.04)	-.05 (.04)
Market-pricing				-.02 (.04)	-.02 (.04)	-.02 (.04)
Level 2 Interaction effects						
Commitment HR X Communal-sharing					**-.02 (.07)**	
Commitment HR X Market-pricing						.06 (.04)
Compliance HR X Market-pricing					**-.04 (.06)**	
Compliance HR X Communal-sharing						.04 (.11)
Deviance	445.461	418.063	449.748	457.046	463.438	463.638

Notes:
1. Entries are estimations of fixed effects with robust standard errors.
2. n (level 1) = 282; n (level 2) = 55 in due to HLM deleting cases with missing data during the analyses
3. Values in bold are relevant for tests of hypotheses.
4. * < 0.05

3.4 Qualitative data analysis and results

We started our descriptive analysis (Yin, 2009) by transcribing all interviews, and selected information from companies' websites for both cases. Then, analyzed the content by exploring and extracting themes that identified the effects of interplay between HR systems and relational climates and employee creativity based on our study's theoretical background.

Case 1. ALPHA

ALPHA is a British company that provides advisory services of assurance, tax, and transactions with multiple branches in 150 different countries. We conducted two interviews, one with the HR manager and one with an employee to avoid bias in reporting only perceptual responses from the employee about the experienced or the perceived HR system.

Adopted HR system

In the interview with the HR manager, we learned that the adopted HR system is a commitment-based or high-performance work system based on Lepak & Snell (1999, 2002). The HR manager explained that "*I think more high-performance, the standards, existing standards are quite high, we even have a strategy and part of our strategy is high-performing teams so, obviously we are trying to think what is to make high-performing teams and adjust our development of people to that concept*" and "*we are proud in delivering you know high-quality so definitely high-performance in professional service is part of the culture*".

Hence, we asked the HR manager about the nature of HR processes and examples of the employed HR practices and here below some excerpts of responses: "*HR processes recently are transformed significantly. We are in the process of digitalization*", "*HR is transforming towards more strategic role*", "*we also started to talk very much about purpose of the company and defining the purpose*", "*I was just running an onboarding program and specific day welcome to EY which very systemically talks values, which talk about the need for diversity, who we are, what are our values, but also how contributing to our purpose and our vision and you know which is manifesting in the slogan "creating*

a better working world". Regarding the types of HR practices within the system, she responded: "*rewards, benefits, development, training, you know coaching, counseling*", "*everything that is in a way achieved to well-developed HR practices*". In terms of recruitment and selection, they focus on both job-related skills; "*Technical knowledge is obviously important*", and on social skills; "*Teamwork is very extremely important*". Regarding training and development, they offer frequent training, not only for new joiners and entrants, but also each employee has around twenty days, on average, of training per year. An example is "*our company is offering access to international training seminars, international qualifications and things like that, it is very knowledge-based*". Also, they encourage informal learning as it crucial for their work; "*self-learning and learning from colleagues and so on it is like transferring knowledge is actually the key principle of work here*".

Moreover, they internally develop their employees and that is why they hire newly graduated students. She clearly stated that "*we in a way shape or develop let's say (shape is not a good word) our experts*". She added also that they outsource ready talents from the labor market. For instance, "*in this time, this business strategy now we are also hiring more experienced people who are in a way basically with a certain knowledge that can complement our knowledge base and so on and so on*", she reported. For their offered jobs, they are quite fixed, but they involve some flexibility in these jobs and working hours, like "*if you need to go somewhere within your working hours to do some personal matters we allowed for that*", "*that some people do something at home and maybe leave early*". In addition, employees receive regular developmental performance appraisals on a quarterly basis; "*it is four times a year*", "*We are talking more about development*", "*performance should be linked to the development*". Compensation, incentives, and benefits "*are linked to growth and development*". They include "*fixed and variable salary*", and "*additional rewards depending on if we met the target and if they met goals*".

We also elaborated on the main objective behind adopting this system she replied that they target efficiency but at the same time they care about their employees' well-being: "*efficiency as you are asking might be core target. Obviously, we are you know*

trying to equip people with all source of knowledge so that they can work even faster and that they understand around digitalization and things like that. So, that they are able to transform the company". "We started to regularly measure engagement which is in a way observing you know different elements; how proud people are to work here? How are likely to stay with us? And you know what might be the key areas of their you know concerns".

Perceived HR system and relational climates

Employee's responses about the perceived HR system were consistent with what HR manager reported. The employee confirmed the existence of a high-performing HR system. He reported that they receive frequent training and development programs internal and external training, and formal and informal learning; *"we have quite frequent training programs. We also have access to one internal network which has all the knowledge of ALPHA, learning programs and we have onsite training", "the opportunity to get the ACCA certified so we basically finance their training for career development not all of us but most of us participate into giving lectures to others*, for example, I was teaching Excel and Access and AC programs to our colleagues". About the nature of their jobs, he replies that *"I would not say it is really fixed", "You can work from home. It is not a fixed working schedule", "for me I can come late and go late".* Interestingly, the employee mentioned that the overall system in the company is trust-based *"there is no close monitoring, we don't have anyone who tries to exploit this system and lie about their hours because we are not punished for that"* he added.

They get benefits, rewards, and compensation; *"we have a lot of benefits, basically we have sports, fitness center, we have also swimming activities, parking garages that are sort of gratifying benefits that company offer you for progress", "we have also the yearly bonus award", "we have a special award system for year performance so basically we distinguish not work but career progression",* regular performance reports and periodic evaluative and developmental feedback, *"we actually have quarterly reports", "we have the processes of evaluating feedback reflecting on options to improve where mentioned", "I have received some of feedback that are*

evaluative but most of them are constructive. So basically, reflecting on mistakes not reflecting on why you are making mistakes". They also might participate in the decision-making process, *"we have to submit proposals for projects our superiors consult our skills and how do we see ourselves fit in that project, so basically, can we complete such tasks. In that sense we have been in decision-making".* When we asked the employee about if these HR practices stimulate his feelings of that the company cares about his well-being, and value his contributions and performance outcomes, he replied *"from the first day I came to this company, I had this talk with HR directors, they were presenting this approach, and the approach to working was that everyone has to feel comfortable and you have to reflect such energy".*

Concerning the relational climates, based on the HR manager and the employee consistent responses, we concluded that the prevalent climate is communal-sharing according to Fiske (1992) explanation. They mentioned that the social climate is friendly, and everyone cooperates and share knowledge to deliver high-quality performance outcomes. For example, the HR manager mentioned that *"we are currently good in open communication", "it is also part of you know of the development", "it is a relaxed atmosphere, people are connected", "there is a good cooperation, intergenerational cooperation", "is identified as one of our competitive advantage that we can come together and offer joint expertise", "so we are trying to encourage this cross-departmental or services opportunities and mingling and connections".*

They employee highlighted that they often work in teams where they help each other and share resources without asking for anything in return. For example, we asked the employee "when you look at relationships among your teammates, how do you describe these relationships? For example, let me ask you when you ask something, do they share with you or they say: "Ok I will give you this, but give me this in return?" he answered *"no, we don't have this trading system"* and *"help is not conditioned as we see the project always as a whole".* A snippet of employee's responses about the social climate, *"every time we have a problem stimulated to communicate with someone who potentially might have a solution for that and once you get to that you have this interesting reaction to people because we don't consider ourselves colleagues, we*

consider ourselves friends all in the office. It is really good, and it is really great to work in such environment and I believe it is a rare occasion to work in such environment. I have worked with other companies before and I have never felt comfortable this way. We have office and we have ranks in this company, but communication interact is really relaxed it is not causing any stress which is really crucial in this business".

And the core question to the employee was how the HR system and the relational climate affect his creativity and which one is more important in his opinion. For HR system role, he answered "*definitely, in our company, innovation is key, so basically, we are trying to get the most out creativity of our people. If we have an idea for example to get us a new service line or new product we have these hubs just for that so basically you send your project as a concept and they review it, if it is good enough or has potential they granted some assets to develop that project onwards and then we have the opportunity to work for that project*". Regarding the communal-sharing climate contextual effects, he demonstrated that "*I think it increases it. You see some creative solutions from someone else, and then you start to think in the same manner, so basically, you are advancing your logic by reflecting of the others. I believe it increases it a lot*". He also confirmed that the presence of a high-performance system and a communal-sharing is important, and they complement each other, "*I would say both of them are important, I cannot leverage on one side*".

In sum, based on both interviewees and on the available website information, we conclude that the organizational context in which a commitment-based or high-performance HR system and a communal-sharing climate are present, positively predicts employee creativity which supports our hypothesis 1.

Case 2. BETA

Beta is a large glass producer company in Slovenia. It has over 700 employees with non-stop production to deliver different global markets.

Adopted HR system

Similar to the first case, we followed the same manner of questioning and we commenced with the HR director to explore what types of HR practices do they have.

Drawing on Lepak & Snell (1999, 2002) and the HR director responses, we explored that they adopt a compliance-based HR system. For instance, they offer relevant HR practices like, recruitment and selection with more emphasis on technical skills, "*now more productional workers are currently more oriented to professional skills, because in the market for technical skills it is lack of people it is really focused and try to find appropriate people with specific skills. We also hire and let's say we employ more educated people for more high positions. And also, it is important the social skills. And also, according to this we perform on selection process from behavioral skills*".

Training is need-based, but they rather depend on the external market to get specific competencies, "*the training is happening the whole year. But it depends on different topics*", "*we don't put any limits for basic training*", "*but, it depends on the situation and the level of the people*", "*then we have let's say special education and also some scholarships to upgrade existing education level. Then we have some language courses for English or German depends on the market or on what we need inside the house. And also, there is some technical education and one other related to regular requirements or to fulfill some expertise or knowledge that we need inside the company*", "*some programs are internally but does not mean that we have internal providers, but we actually hire from the market. Depends, you know so we have some external educational consultants they can provide some trainings and so on. Internally, we have mentorship program it is a program for the new employees*", "*it is more externally. But also, it depends on how many new employees we hire or what is the occupation all those things influence on the intensity*". Their jobs and work schedules are fixed, but more flexible for administrative positions, "*most of the people actually who work in this production does not have the possibility to have flexibility, because actually it is shifts, four shifts work schedule. Flexible jobs let's say in administrative people and non-production workers*".

Benefits are job performance-based, but they offer basic salaries and some non-financial benefits, "*basic salary, then employees are eligible to get Christmas bonus if they are successful*", "*We also like give holidays it is also obligatory, but we give more than the minimum this is let's say such a way. We also have non-financial benefits, we have some certificate as a family-friendly company. Employees also have the opportunity*

to do some exercises in the afternoon or they can get some tickets for the cinema".
Additionally, they offer regular performance review and provide evaluative and
developmental feedback, "*we have quarterly performance review, but we also parallel
this part with development or career plans also more focused on career development
through training, or let's say maybe some job rotation and according to this we actually
evaluate it, but also it is for smaller part not for everybody, it is for selected people*". The
main goal for implementing such HR system is "*to recognise internal talents, make
existing system of rewarding competitive according to situation in the market, and for
training*". Surprisingly, although the company has an innovation center, the role of HR
department is limited only to rewarding and they do not have any creativity-oriented HR
practices despite that innovation is key for their success as indicated in their website, "*we
actually somehow try to stimulate some proposals that each proposal has some values
and of course, it is important maybe some internal proposals which is related to HR we
look and say it is okay or make sense or not. So actually, HR is not innovation process it
is separated*".

Perceived HR system and relational climates

Again, employee answers were similar to the HR director's ones. About training,
for instance, she said "*we have workshops, education with other companies, to have
knowledge and listen to their innovative ideas, team building. And other benefits, like
sports and benefits for our health*", "*they allow me if I have some problems or if I have
some additional education they allow me to bring it in the company*". But also "*it is
different and based on what you need and how you really need something. For example,
if I need something or I need workshops or education which will bring benefits to the
labor place and would be better they bring fast this workshop*". Further, "*they offer extra
bonus on my basic salary*" based on her performance. Also "*I receive every month
regular appraisals*" and feedback in form of "*more developmental instructions*", "*I think
my directors and mentors when they give me some advice about my work they do it
because they want that I develop myself and my work to the next level*". She also
mentioned that "*I have a lot of flexible work, because I can come to work at 7:00 am or
9:00 am, but I must work for eight hours*". She further suggested that "*I think there is a*

lot that our HR director and their team can do, more development and contributions not only in our field. For example, for people in production, in sales, maybe also in field of informatics”.

In terms of the social climate, she mentioned that they often work in teams, and they have cooperative relationships, “*with co-workers we have really friendly relationships, but with other co-workers who are older than me we have more professional relationships, we are more work colleagues. We don't meet out of our work time we just hang at our company. But, with others, I have really good relationships and we are really on a friendly basis we work together, we go together to the lunch and after work time, but with the older ones in the company we have more professional relationships, more colleagues' relationships*”. And about willing to knowledge and available resource sharing, she explained that *“When I need help people, my co-workers are really nice, and they help me, and they will not expect anything, and we help each other. And I think that's good because I can count on everyone on our company. And if they need help I will for sure help them. It nice to work with such a group of people, because I really appreciate it”.*

In answering our core question of how both the HR system and the good relationships affect your creative performance? And which is important in your opinion? She clearly answered that *“I think both are important. I think it is nice that we have workshops and some education and formal stuff, but it is a must that we have good relationships. Maybe I will give percentage more to good relationships, because it is much easier to work with people which you have good relationships. For me, it is more important that you have good relationships and that you can count on your co-workers and that you have respect from each other”, “it is better to have such good relationships, because then I am more relaxed, and you can bring fresh ideas, because you know no one will judge you”.* Additionally, she mentioned that “*I think it is nice workplace because there is a lot of people from different fields and different environments and we can share our views, knowledge, if we need some advice we can count on each other and it is nice friendly atmosphere”.*

In this case, we noticed that the adopted HR system is compliance-based but some of the mentioned practices are not identical to what this system involves. For instance, they utilize external market for hiring talents and focus more on job-relevant technical skills and competencies (Mossholder et al., 2011), but they concurrently allow flexibility in work schedules, low monitoring, and training even if it is limited and need-based (Batistič et al., 2016). We therefore, concluded that the HR system employed is rather weak based on what mentioned in previous paragraphs. Although, it seems unfavorable context for creativity as it does not offer much to enhance it, we found that this context was complemented by the presence of the communal-sharing climate which provides employees with more opportunities to cross-fertilize their creative ideas through knowledge sharing and communication with other colleagues.

4. Discussion

The earlier literature underscores the importance of contextual factors in affecting employee creativity. Our study primarily developed a multilevel model to assess the effects of cross-level interactions between planned HR systems and emergent relational climates in influencing employee creativity. Contrary to our expectations, survey analysis results showed no support for our hypotheses since the two-way interactions between the selected HR systems and relational climates were insignificant for influencing creativity at the individual level. However, only a direct positive top-down effect of a commitment-HR system was shown which is consistent with previous research findings, whereas the compliance-HR and the relational climates were not.

A possible explanation for this lack of hypothesis support might be attributed to the fact that we did not capture either the strength of HR systems (Bowen & Ostroff, 2004) or relational climates, which might be of core importance for the proposed interactions. Further, we suspect that HR systems and relational climates exerted different effects as respondents are from various functional areas and industries, thus, employees' perceptions varied which affect respondents' interpretations about the prevalent organizational context and how it is relevant to their creativity. As suggested by the extant literature, discretionary behaviors (e.g., creativity) and motivation are often stimulated by a strong HR system. This open, theoretical assumptions about the

supplementary or complementary fit between the individual and context (Cable & Edwards, 2004).

Another plausible reason might be owing to the person-context interaction approach. Employees' with different creative traits, orientations (e.g., learning, performance), and personalities may react positively or negatively as claimed by (Shalley et al., 2004). Cable and Edwards (2004) suggest that sometimes is possible that the perception of individuals might out strength the role of context. This also fits with the notion that individuals might perceive designed context – HR practices in a different way than line managers, which also stimulate different reactions from their side, which warrants further exploration to ascertain the effects of these boundary conditions.

On the other hand, the case studies' findings partially corroborated our hypotheses and complemented the survey analysis findings with regard to the importance of commitment-HR. "ALPHA" case for example, supports our hypothesis (1), which states that the joint presence of a commitment-HR system and a communal-sharing climate creates a positive stimulating context for workers' creativity. Interestingly, although not hypothesized, the case of "BETA" suggested that a context where a compliance-HR system and a communal-sharing climate are present might also be conducive to employee creativity. Even though our survey results displayed it is a non-significant predictor of employee creativity, the findings of both case studies revealed that the communal-sharing climate that permeates the workplace is vital for creative ideas generation as it creates a shared situation where employees can communicate and collaborate together. Overall, our findings suggest that the adoption of a commitment-based or high-performance work system is important to predict employee creativity but insufficient by itself without the provision of a communal-sharing climate.

5. Conclusion

5.1 Implications for theory and practice

The role of various organizational context elements in predicting worker creativity was emphasized thus far by a great deal of research (Amabile, 1996; Chang et al., 2014; Gong, Huang, & Farh, 2009; Liu et al., 2011). However, limited theoretical

explanations about the cross-level effects and interplays among context factors in creating motivating contexts for employee creativity (Shalley & Gilson, 2004; Shin et al., 2016). Our study discusses a key research path for creativity field. Therefore, it has several theoretical contributions. First, in response to scholars' calls to embrace the trending multilevel perspective in several disciplines, like creativity (Drazin et al., 1999; Zhou & Shalley, 2008) and HRM (Den Hartog, Boon, Verburg, & Croon, 2013; Paauwe, 2009; Wright & Boswell, 2002), adopting a multilevel modeling enabled us to examine the context cross-level effects which provided a more holistic understanding of the nested structure of the organizational context in establishing situations for creativity (George, 2007; Hennessey & Amabile, 2010). Additionally, including two different contextual factors at multiple levels overcame the limitation of considering a single level of analysis when studying organizational context thus, valid insights and more thorough conclusions (Johns, 2006, 2017; Mowday & Sutton, 1993). Moreover, integrating meso/team-level factors (relational climates) allows for understanding the effects of such factors as it explained by the role of a communal-sharing climate in strengthening (e.g., ALPHA case) and weakening (e.g., BETA case) the effects of employed HR system (Bowen & Ostroff, 2004; Chang et al., 2014).

Second, our quantitative findings, in line with the extant studies (Chang et al., 2014; Jiang et al., 2012; Shin et al., 2016; Tang et al., 2017), suggested that a deliberately designed commitment-HR system is a more positive predictor of employee creativity. That is, such systems create contextual settings that are perceived as supportive and encouraging for employees by facilitating knowledge sharing and learning which motivates their creativity (Deci & Ryan, 1985). This is likely to recall the comparison and argument regarding the effects of designed versus emergent organizational context elements (see Andersen & Nielsen, 2009; Mintzberg & Waters, 1985). Our qualitative findings, however, corroborated the importance of the co-existence of commitment or high-performing HR systems and a communal-sharing climate. Therefore, in addition to the positive effects of a commitment-HR system, communication, collaboration, and trust are required to enhance the idea cross-fertilization processes (Jiang et al., 2012). This conclusion confirms Andersen & Nielsen's (2009) claim that an effective outcome is a product of a combination of intended and emergent factors. As a result, an integrative

strategy that considers the joint presence of a commitment-HR and a communal-sharing climate can maximize employee creativity and this is proved by ALPHA case study.

Third, both case studies offered valuable insights regarding the importance of the relational perspective for creativity (Perry-Smith, 2006; Perry-Smith & Shalley, 2003) and emphasized the necessity of a communal-sharing climate, which asserts the effectiveness of the relational model theory in affecting and shaping employees' behaviors and attitudes within the workplace (Fiske, 1992; Fiske & Haslam, 2005). For example, in Beta case, although it seems unfavorable situation for breakthrough thinking, the communal-sharing climates counterbalanced the negative effects of the compliance-HR. This not only confirms that even negative contexts can exert positive effects on creativity, but also underlines and supports the posited proposition about the role of team/meso-level context factors (e.g., relational climates) on strengthen/weaken HR systems impact on employee outcomes (e.g., creativity) (Bowen & Ostroff, 2004; Chang et al., 2014; Nishii & Wright, 2008). Methodologically, we supplemented our survey with a multiple-case study design as qualitative research would yield advanced understanding and allow theory building of a phenomenon that is nested in a social context like creativity (Eisenhardt, 1989; Yin, 2009).

Practically, understanding the organizational context in which individuals operate becomes indispensable as companies are increasingly capitalizing on their employees' creativity to survive and maintain a competitive advantage. This study might help practitioners in framing the appropriate context conditions and assist them in designing the workplace that stimulates employees' breakthrough idea generation to channel creative solutions into real products or services. Our results suggest that the commitment-HR system positively predicts employee creativity. In this regard, managers are encouraged to adopt creativity-oriented high-performance HR systems. For example, recruit employees with creative tendencies, offer extensive training programs that target developing problem-solving and breakthrough thinking skills, and reward creative behaviors.

The other contextual component is the communal-sharing climate. Since it showed desirable for employee creativity as indicated earlier, managers are strongly

recommended to facilitate communication and reinforce collaboration among employees. This could be fulfilled through HR practices that smooth knowledge sharing and encourage openness to ideas and communicate clear signals of autonomy, trust, sense of safety which enhances ideas cross-fertilization and ultimately reinforces divergent and creative thinking. In sum, we advise companies who hope to advance workforce creativity to set comprehensive strategies that balance between intended versus emergent context components to achieve integration which is likely to pay off more in establishing creative environment than investing only in adopting for example a commitment-HR system only.

5.2 Limitations and future research directions

Even though this study offers new explanations of the relationship between HR systems, relational climates, and employee creativity, several limitations should be noted. First, the cross-sectional study design precludes concluding causal inference of the mentioned relationships, therefore, experimental and longitudinal research designs might better capture causality and complexity between the study's variables over time. Second, a clear bias can be noticed as individual creativity was reported by employees themselves, but we attempted to reduce this bias by considering the line managers responses about relational climates. Future studies could remedy this bias by adopting more objective measures of employee creativity (e.g., peer rating, supervisor ratings). Third, we included only commitment and compliance HR systems along with only two relational climates. Therefore, including other types of HR systems (e.g., market-based HR) and relational climates (equality-matching) might yield different results. Moreover, studying the cross-level interactions between HR systems and other meaningful factors at the team-level like transformational leadership (Chang et al., 2014; Gong et al., 2009; Shin & Zhou, 2003) might be a promising and beneficial research path for creativity.

Fourth, employing a multiple-case study approach yielded insightful results about the hypothesized interactions. Nonetheless, both cases were not selected randomly but based on theoretical considerations which makes representativeness a major concern. The small number of conducted interviews also limits generalizability. Lastly, our sample

included different manufacturing and service companies and we did not consider that HR systems and creativity might differ among those sectors. For instance, compliance-HR might be effective in some industries but not in others. Additionally, the sample included only European companies which again limits generalizability. Therefore, replicating this study into specific industries and other contexts like Chinese, American, Middle East contexts to verify the findings is desired.

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Appendix 1- Factor loadings of survey items - CFA

Variable	Item	Loading
Commitment HR **(α=.84)**	CBHR_2.1	.658
	CBHR_1.2	.636
	CBHR_2.2	.817
	CBHR_2.3	.655
	CBHR_1.4	.581
	CBHR_2.4	.628
Compliance HR **(α=.87)**	CBHR_3.1	.600
	CBHR_4.1	.722
	CBHR_3.2	.712
	CBHR_4.2	.851
	CBHR_3.3	.597
	CBHR_4.3	.770
	CBHR_4.4	.699
	CBHR_3.5	.572
	CBHR_4.5	.569
Individual **creativity** **(α=.90)**	CREA_1	.596
	CREA_2	.645
	CREA_3	.711
	CREA_4	.714
	CREA_5	.774
	CREA_6	.673
	CREA_7	.596
	CREA_8	.803
	CREA_9	.656
	CREA_10	.653
	CREA_11	.581
Communal-sharing **(α=.75)**	RC_1	.999
	RC_2	.999
	RC_3	.999
	RC_4	.999
	RC_5	.999
	RC_6	.999
	RC_7	.999
	RC_8	.999
Market-pricing **(α=.81)**	RC_9	.889
	RC_10	.999
	RC_11	.999
	RC_12	.999
	RC_13	.999
	RC_14	.999
	RC_15	.999
	RC_16	.999

Appendix 2 - survey items

Items for measuring Commitment HR systems adapted from (Nishii et al., 2008) (α=.84)	
The organization provides employees the training that it does:	
1	so that employees will feel valued and respected—to promote employee well-being.
The organization provides employees the benefits that it does (e.g., health care, retirement plans)	
2	in order to help employees deliver quality service to customers.
3	so that employees will feel valued and respected—to promote employee well-being.
The organization makes the hiring choices that it does (i.e., the number and quality of people hired):	
4	so that employees will feel valued and respected—to promote employee well-being.
The organization pays its employees what it does:	
5	in order to help employees deliver quality service to customers.
6	so that employees will feel valued and respected—to promote employee well-being.
Items for measuring Compliance HR systems adapted from (Nishii et al., 2008) (α=.87)	
The organization provides employees the training that it does:	
1	to try to keep costs down.
2	in order to get the most work out of employees.
The organization provides employees the benefits that it does (e.g., health care, retirement plans)	
3	to try to keep costs down.
4	in order to get the most work out of employees.
The organization makes the hiring choices that it does (i.e., the number and quality of people hired):	
5	to try to keep costs down.
6	in order to get the most work out of employees.
The organization pays its employees what it does:	
7	in order to get the most work out of employees.
The organization schedules employees the way it does (hours, flexibility, leave policies):	
8	to try to keep costs down.
9	in order to get the most work out of employees.
Items for measuring Individual Creativity adapted from (J. Zhou & George, 2001) (α=.90)	
1	I suggest new ways to achieve goals or objectives.
2	I come up with new and practical ideas to improve performance.
3	I search out new technologies, processes, techniques, and/or product ideas.
4	I suggest new ways to increase quality.
5	I am a good source of creative ideas.
6	I exhibit creativity on the job when given the opportunity to.
7	I develop adequate plans and schedules for the implementation of new ideas.
8	I often have new and innovative ideas.
9	I come up with creative solutions to problems.
10	I often have a fresh approach to problems.
11	I suggest new ways of performing work tasks.
Items for measuring communal-sharing relational climate (Haslam & Fiske, 1999) (α=.75)	

	If you look at the relationships among your team members, how do they score on the following statements:
1	If anyone in my team needs something, the others give it without expecting anything in return.
2	Many important things my team members use belong to the team, not to anyone separately.
3	People in the team share many important responsibilities jointly, without assigning them to anyone alone.
4	People in the team feel a moral obligation to feel kind and compassionate to each other.
5	People in the team make decisions together by consensus.
6	People in the team tend to develop very similar attitudes and values.
7	People in the team feel that they have something unique in common that makes them essentially the same.
8	People in the team are a unit: they belong together.

Items for measuring market-pricing relational climate (Haslam & Fiske, 1999) (α=.81)

	If you look at the relationships among your team members, how do they score on the following statements:
1	What team members get from other people in your team is directly proportional to how much they give them.
2	People in the team divide things up according to how much each of them has paid or contributed.
3	If anyone in the team worked for another team member, he or she would be paid in proportion to how long they worked or how much they did.
4	People in the team have a right (they are entitled) to a fair rate of return for what they put into the team interaction.
5	People in the team make decisions according to the ratio of the benefits they get and the costs to them.
6	One of the team members often pays another team member to do something.
7	Team members expect to get the same rate of return on their effort and investment that other people in the team get.
8	Team interactions are strictly rational: members each calculate what their payoffs are, and act accordingly.

Appendix 3 - Interviews questions

Questions to be answered by the HR manager

1. How long have you been in this company? (in years)

2. What types of HR practices do you have in your company? (e.g., hiring, training, benefits, compensation, flexible jobs)

3. Why does your company offer such practices?
   - To enhance employees' feelings of being valued and respected—to promote employee well-being, and in turn in order to help employees deliver quality service to customers
   - Or to get the most work out of employees and to try to keep costs down.

4. What are your criteria when you hire an employee? Do you emphasize only job-related skills or also social skills?

5. How often do you provide employees with training and development programs? frequently, sometimes, seldom, or not at all? And why?

6. Do you offer flexible jobs? Flexible work schedules?

7. Do you use performance appraisal on a regular basis? Do your performance appraisal procedures include meetings with employees to evaluate their performance?

8. What types of compensation and benefits do you offer to your employees?

9. When you look at the social and interpersonal relationships among your team members/ teammates, how do you describe them?

Questions to be answered by an employee

1. How long have you been in this company? (in years)

2. What types of HR practices do you receive? e.g., continuous training, adequate compensation and benefits, regular performance appraisals, developmental feedback, participation in decision-making

3. Based on the mentioned HR practices that you receive; do you feel that your company cares about your well-being? Do you feel that their efforts and contributions are being recognized and appreciated?

4. Do these HR practices help you deliver better performance and quality outcomes?

5. Do you feel that these practices only to get the most work out of you? And keep costs down?

6. When you look at the relationships among your teammates, how do you describe them? Do you feel that you are like a family or with friends? Do you share knowledge and available resources without asking for anything in return? Work collectively?

7. How such relationships influence your creativity?

8. Do you feel like this is a workplace that nurtures your ability to suggest creative ideas, like new and practical technologies, processes, techniques, and/or product ideas that improve quality and performance or help in problem-solving?

9. What new ideas or suggestions have you come up with at work?

10. In your opinion what is important to enhance your creativity levels; the existence of HR systems/practices or good relationships among employees? Why?

NB: interviews' recordings and transcriptions are available upon request.