

Christoph Hinteregger, Urs Baldegger, Susanne Durst\*

## Exploring the Link Between Strategic Human Resource Management, Organizational Culture, and Corporate Entrepreneurship\*\*

### Abstract

Today's dynamic and highly volatile environment underlines the relevance of corporate entrepreneurship in all types of organizations to respond to current and forthcoming forces in a sustainable way. While extant research has identified several factors that impact corporate entrepreneurship, our understanding of how corporate entrepreneurship is impacted by strategic human resource management (SHRM) is underdeveloped. Drawing upon a dataset from 185 HR managers in Eastern Switzerland, Liechtenstein, and Western Austria, this study replicates the study of Wei et al. (2008) and examines the role of organizational culture in the SHRM adoption and implementation process and transfers their research design into the context of corporate entrepreneurship. The results indicate that SHRM impacts the implementation of organizational culture and that different HRM systems affect the implementation of different types of organizational culture.

Keywords: strategic human resource management, organizational culture, corporate entrepreneurship  
(JEL: M1, M10, M12, M14)

### Introduction

To be able to survive in the long run in today's increasingly turbulent and highly volatile business environment (Corbett et al., 2013; Hughes & Mustafa, 2017; Giones et al., 2019), organizations "can either innovate their future or become victims of innovation" (Kuratko & Morris, 2018, p. 43). To respond to present and coming environmental forces, corporate entrepreneurship, i.e., the entrepreneurial behaviour within established organizations (Stopford & Baden-Fuller, 1994), has been identified as a major strategy for revitalization and increased innovativeness in

\* Christoph Hinteregger, Ph.D. (corresponding author): University of Innsbruck, School of Management, Innsbruck, Austria. E-Mail: c.hinteregger@gmx.net  
Prof. Dr. Urs Baldegger: University of Liechtenstein, Department of Entrepreneurship, Vaduz, Liechtenstein. E-Mail: urs.baldegger@uni.li  
Prof. Dr. Susanne Durst: Tallinn University of Technology, Department of Business Administration, Tallinn, Estonia. E-Mail: susanne.durst@taltech.ee

\*\* Date submitted: January 31, 2021.

Date accepted after double-blind review: August 8, 2021.

all types of organizations (Hayton, 2005; Ireland et al., 2009; Corbett et al., 2013; Hughes & Mustafa, 2017; Kuratko & Morris, 2018; Hampel et al., 2020).

Previous research has identified several factors that can influence corporate entrepreneurship, such as organizational structure and leadership (e.g., Miller, 1983, Zahra, 1996; Antoncic & Hisrich, 2001), strategic management (e.g., Barringer & Bluedorn, 1999), organizational culture (Zahra et al., 2004; Wei et al., 2011), rewards and reinforcement, autonomy, work discretion, and time availability (Stevenson & Jarillo, 1990; Hornsby et al., 2002; Hayton, 2005; Kuratko et al., 2005; Hayton et al., 2013). This is promising, but one can argue that it is the employees who make entrepreneurial activities a success (Tang et al., 2015) who can be a source of sustained competitive advantage (Ulrich, 1987; Wright & McMahan, 1992) and thus, who are vitally important to corporate entrepreneurship (Hayton, 2005; Schmelter et al., 2010; Zhang & Jia, 2010; Tang et al., 2015; Amberg & McGaughey, 2016; Florén et al., 2016). Surprisingly, the internal management of human resources and its relationship to corporate entrepreneurship has received only a little attention (Wei et al., 2011; Tang et al., 2015; Amberg & McGaughey, 2016; Florén et al., 2016; Moustaghfir et al., 2020) while, at the same time, organizations still struggle with proper strategies to initiate entrepreneurial behaviour among their employees (Kuratko et al., 2014; Kuratko & Morris, 2018).

Strategic HRM (SHRM), which can be defined as "the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals" (Wright & McMahan, 1992, p. 298), aims to manage employees in an increasingly fast-changing and uncertain environment (Kramar, 2014). It is argued that firms must align their HRM with their strategies, such as corporate entrepreneurship (Wei et al., 2011; Tang et al., 2015; Florén et al., 2016), to remain competitive (Guest, 1987; Moustaghfir et al., 2020).

While in the last decades, research on SHRM has made considerable progress in investigating its relationship with firm performance (Jiang et al., 2013; Jackson et al., 2014; Tang et al., 2015), our understanding of how SHRM is adopted and implemented and what impact it has on corporate entrepreneurship is underdeveloped (Hayton & Macchitella, 2013; Tang et al., 2015; Amberg & McGaughey, 2016; Florén et al., 2016). Additionally, research on SHRM has called for investigating factors unique to an organization and may result in competitive advantage (Jackson et al., 2014). Organizational culture, which refers to "a complex set of values, beliefs, assumptions and symbols that defines the way in which a firm conducts its business" (Barney, 1986, p. 657), has been defined as such a unique resource and source of sustained competitive advantage (Barney, 1991; Chan et al., 2004).

Therefore, this study aims to examine the role of organizational culture in two SHRM processes (i.e., the adoption and implementation of SHRM) and their effects on corporate entrepreneurship. In doing so, this study replicates the study of Wei et al. (2008) "The Role of Corporate Culture in the Process of Strategic Hu-

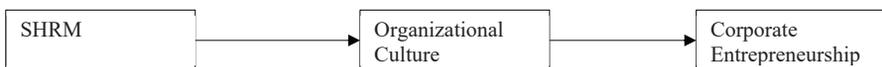
man Resource Management: Evidence from Chinese Enterprises", which analyses the role of organizational culture in the adoption and implementation process of SHRM and its effects on organizational performance in Chinese firms and transfers their research design into the context of corporate entrepreneurship by using a sample of German-speaking enterprises. Hence, this study enriches our understanding of the interactive role of SHRM and organizational culture by evaluating the findings of Wei et al. (2008) in a different organizational and cultural setting. Additionally, this quasi-replication contributes to the cumulative body of research knowledge (Bettis et al., 2016), employing different measurement instruments to assess different organisational cultures and HRM systems. Furthermore, this study particularly contributes to emerging research on mediating processes in SHRM (Wei et al., 2008; Jiang et al., 2013; Jackson et al., 2014; Tang et al., 2015). As outlined in Figure 1, this study compares two theoretical perspectives that, besides the contingency theory, have been utilized to explain the interconnection of SHRM and organizational culture at an organizational level, namely social context theory (e.g., Wei & Lau, 2005; Wei et al., 2008) and resource-based view (e.g., Ngo & Loi, 2008; Tang et al., 2015).

According to social context theory (Ferris et al., 1999), organizational culture acts as an antecedent to the adoption of SHRM, carrying over the effects on corporate entrepreneurship. By contrast, drawing on the resource-based view (Barney, 1991), implementing organizational culture acts as a mediator between SHRM and corporate entrepreneurship.

Social context theory: Organizational Culture as an Antecedent to the Adoption of SHRM



Resource-based view: SHRM as an Antecedent to the Implementation of Organizational Culture



Based on Wei et al. (2008)

By evaluating organizational culture in the processes of SHRM adoption and implementation, this study contributes to a systematic study of SHRM processes (Wei et al., 2008; Chow et al., 2012) and enables a better understanding of 1) how SHRM is adopted and implemented (Zhu et al., 2005) and 2) how it influences corporate entrepreneurship. The results of this study are expected to offer important insights for understanding how organizations can benefit from SHRM to remain competitive.

The paper is structured as follows. The following section reviews the relevant literature on the theoretical perspectives of social context theory and resource-based view on the SHRM adoption and implementation process and, on these grounds, develops two hypotheses. The data and methods are described in the preceding sections, followed by the study's results. The study ends with a discussion of the findings, the implications for theory and practice, and future research avenues derived from the study's limitations.

## Theoretical Background

Corporate entrepreneurship broadly describes the strategic intent of an established organization to be more proactive, innovative, and risk-taking (Miller, 1983; Kaya, 2006; Hayton et al., 2013) to discover, evaluate, and ultimately exploit entrepreneurial opportunities (Hayton et al., 2013; Amberg & McGaughey, 2016). With the successful implementation of a corporate entrepreneurship strategy, organizations can achieve superior performance (Hayton, 2005), long-term growth, and sustainability (Amberg & McGaughey, 2016). The success of the strategy's implementation depends on an organisation's ability to create and acquire new knowledge and integrate this knowledge and existing capabilities into new forms of novel combinations (Hayton et al., 2013; Hayton & Macchitella, 2013; Tang et al., 2015).

Therefore, the facilitation of a corporate entrepreneurial strategy depends heavily on the firm's capacity to strategically manage its human resources to identify, acquire, and integrate new knowledge (Burgelman, 1983; Tang et al., 2015). On the other hand, the underlying organizational culture can foster discretionary knowledge-sharing behaviours (Burgelman, 1983) as it possesses the values that describe the relationship between the organization and its employees and between the employees themselves (Schein, 2017).

Hayton et al. (2013) identified different theoretical perspectives to explain the relationship between SHRM, organizational culture, and corporate entrepreneurship. While at the individual level, the behavioural view and the social exchange theory help to explain corporate entrepreneurship, at the organizational level, research has relied upon the contingency theory, the resource-based view (Hayton et al., 2013), and the social context theory (e.g., Wei & Lau, 2005; Wei et al., 2008).

Drawing on contingency theory, research has analysed the moderating effects of organizational culture and SHRM and found that corporate entrepreneurship is achieved through a fit between organizational culture and SHRM. However, research examining the moderating effects has failed to explore the underlying SHRM processes that critically impact organizational change and development (Wei et al., 2008).

This study employs a mediation analysis which has been argued to be a process analysis (Wei et al., 2008; Jiang et al., 2013), to analyse the SHRM adoption and implementation process and their impact on corporate entrepreneurship. Thereby, apart from the contingency theory, this study compares the theoretical perspectives of the social context theory and the resource-based view.

### Organizational Culture as an Antecedent to SHRM

According to the social context theory, organizational culture resembles a kind of an organization's social environment that influences the adoption of SHRM (Ferris et al., 1999; Wei et al., 2008; Wei et al., 2011). Schein (2017) states that the values founders bring to their newly created organizations are enduring, influencing, and permeating organizational systems, structures, and processes, including the HRM system as well. The organizational culture, therefore, reflects the vision of a firm, constituted from the ideas and values articulated as a mission, philosophy, or business strategy by the founder. With the successful implementation of these ideas, they become institutionalized through implementing management practices (Ngo & Loi, 2008). From this perspective, organizational culture is considered an environmental factor that determines how an organisation is managed (Wei et al., 2008). It is argued that organizational culture influences the adoption of SHRM in causal order, as the founder's orientation toward employee relations and decision-making is firmly anchored in a formal organization (Hayton & Macchitella, 2013).

Consequently, SHRM is more likely found in organizations that recognize their employees as a potential determinant of organizational effectiveness (Orlitzky & Frenkel, 2005; Jackson et al., 2014). Toh et al. (2008), for example, found that the choice of an HRM system is highly related to an organisation's culture. Organizations that emphasize people-oriented values are more likely to establish a high-commitment HRM system.

By examining three types of organizational culture based on the competing values model and their effect on the adoption of SHRM, Wei et al. (2008) confirmed this causal ordering in Chinese firms. The results show that the perceived importance of SHRM partially reflects the organizational culture of a firm. If a firm has an orientation towards the strategic management of its human resources anchored in the organizational culture, it is more likely that the firm will adopt an SHRM approach. This orientation is mainly rooted in group and developmental cultures, which significantly impact the adoption of SHRM, while hierarchical cultures were not found to have any impact. This is consistent with the findings of Wei & Lau (2005), which revealed that market orientation significantly influences the adoption of SHRM. If a firm is more market-oriented, it also places greater emphasis on the strategic management of its human resources.

Patel et al. (2013) provide evidence on SHRM to promote organizational ambidexterity. On the one hand, it enables the ability to exploit existing opportunities

while, on the other one, creating the opportunity to explore the challenges of future markets. Hayton & Macchitella (2013) support these findings by evaluating two opposing types of organizational culture and HRM systems and their effects on corporate entrepreneurship. The results show that organizations emphasizing strong individualistic values are more likely to implement an individual-oriented HRM system, while collectivistic cultures tend to adopt a collective-oriented HRM system. While at both extremes, the level of corporate entrepreneurship is relatively low, an intermediate position between individualism and collectivism will yield a higher level of corporate entrepreneurship. This is because individualism seeks to facilitate a kind of non-conformist thinking and thereby supports radical creativity, while collectivism is necessary for the acceptance and support of new ideas. Zahra et al. (2004) and Morris et al. (1994) provides further evidence on the U-shaped relationship between individualism versus collectivism and their influence on corporate entrepreneurship. Additionally, Zahra et al. (2004) showed that organizational cultures emphasizing decentralization, external, and long-term orientation yield in higher levels of corporate entrepreneurship.

In summary, the social context theory perceives organizational culture as a contextual factor that precedes an organizational strategy (Saffold, 1988). As strategic decisions are supposed to be the outcomes of a reflection of the mindset of corporate leaders (Schein, 2017) and SHRM is linked to a firm's strategy, SHRM is influenced by the organizational culture the organizational culture influences SHRM in a sequential manner (Wei et al., 2008). An appropriate organizational culture will facilitate an SHRM process that is intended to enhance the level of creativity, innovation, and entrepreneurial Scaffold (Hayton et al., 2013). Against this background, we propose that

H1: Organizational culture has a positive effect on the adoption of SHRM, while SHRM mediates the link between organizational culture and corporate entrepreneurship.

### SHRM as an Antecedent to Organizational Culture

The resource-based view sees organizations as bundles of resources (Barney, 1991) which are heterogeneous among organizations as they are not perfectly imitable or mobile (Chan et al., 2004). From this perspective, corporate entrepreneurship falls back on a unique bundle of strategic resources characterized by value, rareness, imperfect imitability, and the ability to exploit these resources (Barney, 1991). However, as the real world is not in static equilibrium, Chan et al. (2004) added a dynamic perspective to the resource-based view, arguing that organizations require more than just superior resources. They need a valuable, rare, and imperfectly imitable capability to renew and reallocate resources to achieve business goals in constantly changing environments. In other words, the sustainability of competitive advantages depends not only on the nature of resource bundles at any one point

in time but also on a firm's ability to renew, reallocate, rejuvenate and redefine its resources to cope with the changing business environment. This is in line with corporate entrepreneurship, which argues that organizations are forced to continuously reconsider and renew their competitive advantages (Corbett et al., 2013).

Chan et al. (2004) identified, among others, two core resources that constitute the above-mentioned dynamic and complementary resources of a firm: One is the capability of an organization to manage its human capital effectively under volatile environmental conditions (i.e., SHRM, e.g., Ulrich, 1991; Schuler & MacMillan, 1984; Chan et al., 2004). The other one is an organizational culture that possesses all of the characteristics of a strategic resource and thus, has the potential for creating a sustainable advantage (Barney, 1986; Fitzgerald, 1988; Chan et al., 2004). In combination, organizational culture and SHRM are potential co-specialized resources that serve the need for dynamic capabilities (Chan et al., 2004).

As "the resource-based view explanation rests upon the role of HRM in building unique, difficult to imitate resources that create value" (Hayton et al., 2013, p. 385), SHRM contributes strategic value to organizations as it links HRM to business strategy and manages organizational change by creating an organizational culture that emphasizes creativity and innovation (Brockbank, 1999).

In this respect, Lau & Ngo (2004) found that organizational culture is the missing link between the HRM system and corporate entrepreneurship in terms of product innovation. HRM systems are required to develop an organizational culture conducive to innovation, while organizational culture acts as a mediator between HRM and the development of new products. Likewise, Ngo & Loi (2008) confirmed that HRM flexibility positively affects adopting an adaptability culture, which in turn impacts market-related outcomes such as new product development. Chow (2012) identified organizational culture as the mechanism through which SHRM affects firm performance. Superior performance is achieved if SHRM fosters an innovation culture that provides a creative place to work that is exciting and dynamic.

By investigating the influence of different HRM practices on four different culture types, Yeung et al. (1991) found that different domains of HRM activities have a differential impact on organizational culture. While reward and staffing are found to be the most relevant drivers for developmental cultures, communication is most important for developing group cultures. To establish hierarchical cultures, organizational design is most important, while staffing was found to be the most important HRM practice for adopting rational culture.

In summary, the resource-based view argues that corporate entrepreneurship builds upon a unique bundle of co-specialized strategic resources. As such, SHRM plays a central role in building unique and difficult-to-imitate resources and aligning employees with the organization's strategy. Regarding corporate entrepreneurship, employees are expected to proactively initiate entrepreneurial activities and solve

problems. Therefore, employees will have a shared understanding of the strategic intent of HRM, which results in a certain type of organizational culture (Wei et al., 2008). Against this background, we propose that

H2: SHRM has a positive effect on the implementation of organizational culture, while organizational culture mediates the link between SHRM and corporate entrepreneurship.

## Methodology

### Sample and Data Collection

The data for this study were collected through a standardized questionnaire among HR managers within Eastern Switzerland, Liechtenstein, and Western Austria. This region, also known as the Rhine Valley, seems an ideal setting to study corporate entrepreneurship due to its reputation for innovation (Kraus et al., 2017). An "Alemannic" mentality characterizes this region, i.e., people in this area have a high sense of goal-orientation and individual responsibility and are seen as hard-working and ambitious. Besides, the region has a distinct innovation rate and a high industrial density shaped predominantly by privately held businesses (Durst & Brunold, 2017).

The questionnaires were mailed to 553 HR managers within the Rhine Valley that have taken courses on HRM at the university with which one researcher of this paper is affiliated. In total, 241 completed questionnaires were received either partially or fully. Only fully completed questionnaires entered the analytical stage to ensure data quality, resulting in a final set of 185 questionnaires, corresponding to a valid response rate of 33.5 per cent.

The sample includes firms with various ownership profiles, such as state-owned enterprises (SOEs) and private firms. Of the 185 firms in the sample, 27 (14.6%) are SOEs, and 158 (85.4%) are private firms distributed over 24 different sectors. Manufacturing firms account for 36.8 per cent, whereas service firms account for 63.2 per cent. Table 1 shows the sample characteristics regarding the location of the business, firm size, and ownership profile.

**Table 1. Sample Characteristics**

Country	Total	Percent	Firm size	Total	Percent	Ownership	Total	Percent
Austria	74	40.0	Micro (< 10)	18	9.7	State-owned firms	27	14.6
Liechtenstein	24	13.0	Small (< 50)	26	14.1	Private firms	158	85.4
Switzerland	81	43.8	Medium (< 250)	35	18.9			
Other	6	3.2	Large (≥ 250)	106	57.3			
Total	185	100.0		185	100.0		185	100.0

The average age of the firms in this study is 76 years, with a standard deviation of 61 years. The average number of employees of the respondent firms is 3'209 with a standard deviation of 7'643 employees, ranging from one to 54'000 employees.

## Measures

The main constructs of this study include corporate entrepreneurship, organizational culture, and SHRM. Corporate entrepreneurship was measured using Miller's (1983) scale on entrepreneurial orientation and its adaption by Covin & Slevin (1991) because of its high reliability, validity (Richard et al., 2009) and its applicability in organizations located in German-speaking countries (Kraus et al., 2017). The scale has been repeatedly applied to measure corporate entrepreneurship (e.g., Barringer & Bluedorn, 1999; Kaya, 2006; Florén et al., 2016) and consists of three dimensions with three items each to measure the proactive, innovative, and risk-taking orientation of an established organization on a 5-point Likert scale (Covin & Slevin, 1991). The reliability alpha values of proactiveness (Cronbach's alpha = .78), innovativeness (.87), and risk-taking (.73) indicate high measurement reliability (Nunally, 1994).

As the concept of the HRM system is central to SHRM (Jackson et al., 2014), SHRM in this study was measured using the typology of culture-oriented HRM systems developed by Hinteregger and Durst (2018). The developed typology encompasses four different types of HRM systems, which can be viewed as relevant for this study's purpose as these systems not only refer to high-performance HRM practices but also address HRM systems more comprehensively. The HR managers were asked to describe the extent to which the organization has adopted several HRM practices comprising four different HRM systems on a 5-point Likert scale. The items were then scaled into four measures to indicate the relative dominance of each of the HRM systems. Twelve items were removed as their factor loading did not reach the common threshold for acceptance of 0.4 (Basilevsky, 1994), resulting in 16 items to measure each of the four HRM systems (see Appendix I for a full list of items). Cronbach's alpha coefficients were calculated to assess the measurement reliability of the constructs as well. While the constructs of employee- (.73) and profession-oriented (.71) HRM systems indicate high reliability, task- (.62) and innovation-oriented (.69) HRM systems represent acceptable measures of reliability (Nunally, 1994).

Organizational Culture was measured with the Organizational Culture Assessment Instrument, considered a psychometrically sound instrument of the competing values model (Cameron & Quinn, 2011). The model incorporates four dominant types of organizational cultures, namely, clan, adhocracy, hierarchical, and market culture. For each type, four items were adopted to measure the extent to which the cultural type is present in the organization. The HR managers were asked to rate whether the description of cultural values and orientations is true for their organiza-

tion on a 5-point Likert scale. The items were then scaled into four measures to indicate the relative dominance of a specific organizational culture. As all Cronbach alpha values (.86, .76, .81, and .86, respectively) exceeded the threshold of 0.7, the measures represent high reliability (Nunnally, 1994).

Following prior research (e.g., Wei et al., 2008; Wei & Lau, 2005), this study controlled for firm size and firm age by the natural logarithmic transformation of the number of current employees and the years since the foundation of the firm, respectively. Additionally, two dummy variables are added to control for the effects of industry (0 representing manufacturing firms, 1 = service firms) and ownership structure (1 = SOEs, 0 = private-owned firms), which were previously found to influence the entrepreneurial behaviour of an established firm as well (e.g., Kaya, 2006).

### Analytic Procedures

The analytic procedure of this study follows previous research addressing the relationship between organizational culture and SHRM (e.g., Chan et al., 2004; Ngo & Loi, 2008; Wei et al., 2008) and consists of two steps: First, we examined the psychometric properties and the discriminant validity of the multi-indicator constructs including all independent and dependent variables. Second, to test the hypothesized relationships between organizational culture, SHRM, and corporate entrepreneurship, a structural equation modelling (SEM) approach was applied using AMOS version 23 software. SEM is an ideal technique to study mediation as mediation analyses are characterized by temporal ordering, causal relationships (which can be both causes and effects), and multiple correlations (Wei et al., 2008). By contrast, regression analysis fails to model mediation effects adequately as it requires an assignment of each variable as either cause or effect a priori (MacKinnon & Fairchild, 2009).

To test mediation effects, Kelloway (1996) suggests calculating both a non-mediated and a mediated model. By evaluating model fitness, it is possible to determine whether mediation is present or not (Wei et al., 2008). Preacher & Hayes (2008) suggested that all mediators were entered into a single model instead of calculating each mediation effect individually. This procedure reduces the likelihood of parameter bias due to omitted variables, allows for analysing the relative magnitudes of indirect effects, and compares competing theories against one another in a single model.

To evaluate the models, we followed the suggestion of Hu & Bentler (1999) to use a multi-index presentation format which includes the standardized root mean square residual (SRMR) combined with either the Tucker-Lewis index (TLI), the comparative fit index (CFI), or the root mean square error of approximation (RMSEA). For the sake of completeness, the Chi-Square statistics for all models are reported as well, although its validity should be viewed critically due to its

sensitivity to sample size (Bentler & Bonnet, 1980; Jöreskog & Sörbom, 1993). Therefore, it lacks power for smaller samples (Kenny & McCoach, 2003) for why it is no longer used as a basis for acceptance or rejection (Vandenberg, 2006). For a good model fit, Hu & Bentler (1999) suggest an SRMR below 0.08, an RMSEA below .06, a TLI above .95, and a CFI above .95.

To test the psychometric properties in the first step, we run a confirmatory factor analysis (CFA) on an overall model with 11 latent factors and 41 indicators, as illustrated in Table 2.

**Table 2. Comparison of Measurement Models**

Measurement model	$\chi^2$	df	AIC	SRMR	RMSEA	CFI	TLI
1. Null model	4252.54	820	4334.54	.234			
2. One-factor model	2475.69	771	2655.69	.152	.110	.50	.47
3. Eleven-factor model	1004.67	713	1300.67	.069	.047	.92	.90

*Note.* One-factor model: All items were combined as one latent factor

Eleven-factor model: The model consisted of three three-item entrepreneurship factors, four four-item cultural factors, and four four-item HRM factors

As can be seen, the eleven-factor model fits our data relatively well ( $\chi^2 = 1,004.67$ ,  $p < .05$ , SRMR = .069, RMSEA = .049, CFI = .92, and TLI = .90) and shows a significant improvement from the null model. To test the discriminant validity of the constructs, we compared the eleven-factor model with a one-factor model that combines all items into a single factor (Wei et al., 2008). Finally, we applied Akaike's (1987) information criterion (AIC) to evaluate the relative fit of the models (Jöreskog & Sörbom, 1993). Again, results show that the eleven-factor model is preferable over the one-factor and null model; thus, the construct distinctiveness in this study is confirmed.

## Results

Table 3 reports the main study variables' means, standard deviations and correlations.

**Table 3. Means, Standard Deviations, and Correlations among Variables**

Variable	Mean	SD.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>Control variables</b>																	
1. Firm age <sup>a</sup>	4.04	1.00	1.00														
2. Firm size <sup>a</sup>	6.06	2.38	.403**	1.00													
3. Industry, manufacturing <sup>b</sup>	0.37	0.48	.091	.224**	1.00												
4. Ownership, SOE <sup>b</sup>	0.15	0.35	.121	.090	-.315*	1.00											
<b>Organizational Culture</b>																	
5. Clan	3.69	0.80	-.144	-.282**	-.083	.005	(0.86) <sup>c</sup>										
6. Adhocracy	3.21	0.85	-.151*	-.046	.264**	-.366**	.340**	(0.76) <sup>c</sup>									
7. Hierarchical	3.36	0.79	.124	.063	-.034	.071	-.074	-.248**	(0.81) <sup>c</sup>								
8. Market	3.12	0.90	.033	.263**	.330**	-.382**	-.180*	.492**	.054	(0.86) <sup>c</sup>							
<b>HRM Systems</b>																	
9. Employee-oriented	3.26	0.66	-.062	-.281**	-.052	.007	.563**	.208**	-.203**	-.188*	(0.73) <sup>c</sup>						
10. Innovation-oriented	3.26	0.69	-.166*	-.184*	.059	-.185*	.391**	.587**	-.206**	.160*	.368**	(0.69) <sup>c</sup>					
11. Profession-oriented	3.03	0.75	.207**	.275**	.052	.115	-.306**	-.310**	.627**	.129	-.242**	-.316**	(0.71) <sup>c</sup>				
12. Task-oriented	3.34	0.66	.056	.223**	.139	-.152*	-.128	.183*	.267**	.572**	-.236**	.104	.283**	(0.62) <sup>c</sup>			
<b>Corporate Entrepreneurship</b>																	
13. Proactiveness	3.06	0.86	-.136	.038	.238**	-.292**	.162*	.650**	-.082	.481**	.106	.465**	-.131	.292**	(0.78) <sup>c</sup>		
14. Innovativeness	3.20	0.95	-.104	.075	.292**	-.184*	.204**	.726**	-.153*	.374**	.155*	.425**	-.175*	.171*	.645**	(0.87) <sup>c</sup>	
15. Risk-taking	2.88	0.82	-.135	.017	.079	-.178*	.204**	.620**	-.166*	.421**	.099	.470**	-.193**	.280**	.620**	.485**	(0.73) <sup>c</sup>

Note: Correlation coefficient is significant at \*\*p < .05 (two-tailed), \*\*p < .01 (two-tailed)

<sup>a</sup> Firm size is calculated by the natural log of the total number of employees; Firm age is calculated by the natural log of years since firm foundation

<sup>b</sup> Dummy-coded.

<sup>c</sup> Reliability coefficients (Cronbach's Alpha) of the constructs

As can be seen, both SHRM and organizational culture are significantly correlated with corporate entrepreneurship. Regarding the latter clan (proactiveness:  $r = .162$ ,  $p < .05$ ; innovativeness:  $r = .204$ ,  $p < .01$ ; risk-taking:  $r = .204$ ,  $p < .01$ ), adhocracy (correlation coefficients ranging from  $.620$  to  $.650$ ,  $p < .01$ ), and market culture (correlation coefficients ranging from  $.374$  to  $.481$ ,  $p < .01$ ) are positively correlated with all dimensions of corporate entrepreneurship, hierarchical culture is significantly negative correlated with innovativeness ( $r = -.153$ ,  $p < .05$ ) and risk-taking ( $r = -.166$ ,  $p < .05$ ).

Regarding SHRM, innovation- (correlation coefficients ranging from  $.425$  to  $.470$ ,  $p < .01$ ) and task-oriented HRM systems ( $r = .292$  with proactiveness,  $p < .01$ ;  $r = .171$  with innovativeness,  $p < .05$ ;  $r = .280$  with risk-taking,  $p < .01$ ) are positively correlated with all dimensions of corporate entrepreneurship as well, while employee-oriented HRM systems are only positively correlated with innovativeness ( $r = .155$ ,  $p < .05$ ). In contrast, the profession-oriented HRM system is negatively correlated with innovativeness ( $r = -.175$ ,  $p < .05$ ) and risk-taking ( $r = -.193$ ,  $p < .01$ ).

Regarding the interconnection of organizational culture and SHRM, results show that an employee-oriented HRM system is positively correlated with clan ( $r = .563$ ,  $p < .01$ ) and adhocracy culture ( $r = .208$ ,  $p < .01$ ), while negatively correlated with hierarchical ( $r = -.203$ ,  $p < .01$ ) and market culture ( $r = -.188$ ,  $p < .05$ ). Likewise, an innovation-oriented HRM system is positively correlated with clan ( $r = .391$ ,  $p < .01$ ) and adhocracy ( $r = .587$ ,  $p < .01$ ) culture as well, but negatively correlated with hierarchical culture ( $r = -.206$ ,  $p < .01$ ). By contrast, profession-oriented HRM system negatively correlates with clan ( $r = -.306$ ,  $p < .01$ ) and adhocracy culture ( $r = -.310$ ,  $p < .01$ ) but positively correlates with hierarchical culture ( $r = .627$ ,  $p < .01$ ). Task-oriented HRM system positively correlates with market ( $r = .572$ ,  $p < .01$ ), adhocracy ( $r = .183$ ,  $p < .05$ ), and hierarchical culture ( $r = .267$ ,  $p < .01$ ). Finally, all three dimensions of corporate entrepreneurship were also correlated with each other (correlation coefficients ranging from  $.485$  to  $.645$ ,  $p < .01$ ).

Table 4 presents the results of testing the mediating effect of SHRM in the organizational culture - corporate entrepreneurship relationship (i.e., SHRM adaption process).

**Table 4. Organizational Culture as an Antecedent to the HRM System**

Predictors	Corporate Entrepreneurship		
	Innovativeness	Proactiveness	Risk-taking
Direct effects <sup>a</sup>			
Clan Culture	-.038	.023	.060
Adhocracy Culture	.858**	.541**	.502**
Hierarchical Culture	.040	.056	-.050
Market Culture	-.027	.158**	.212*
Indirect effects <sup>b</sup>			
Clan Culture	.044	.063	.025
Adhocracy Culture	.010	.089	.088
Hierarchical Culture	-.006	.001	.018
Market Culture	.018	.045	.067

Note.  $n = 185$ ; \*  $p < .05$ ; \*\*  $p < .01$

Controls: firm size (log), firm age (log), manufacturing enterprise (dummy-coded), state-owned enterprise (dummy-coded)

Model fit:

<sup>a</sup> Non-mediated model:  $\chi^2 = 36,68^*$ ,  $df = 13$ ; SRMR = 0.082; RMSEA = .099; CFI = .96; TLI = .85

<sup>b</sup> Mediated model:  $\chi^2 = 84,51^*$ ,  $df = 36$ , SRMR = 0.099; RMSEA = .080, CFI = .96, TLI = .88

As can be seen, neither the non-mediated nor the mediated model shows acceptable fit indices (SRMR above .08, RMSEA above .06, and TLI below .90), except the CFI, which exceeds the required threshold of 0.95 for both models. However, following the two-index rule of Hu & Bentler (1999), Hypothesis 1, proposing a mediating role of SHRM between organizational culture and corporate entrepreneurship, is rejected.

**Table 5. The HRM System as an Antecedent to Organizational Culture**

Predictors	Corporate Entrepreneurship		
	Innovativeness	Proactiveness	Risk-taking
Direct effects <sup>a</sup>			
Employee-oriented HRM System	.117	.048	.008
Innovation-oriented HRM System	.474**	.473**	.468**
Profession-oriented HRM System	-.145	-.074	-.160*
Task-oriented HRM System	.176	.287**	.314**
Indirect effects <sup>b</sup>			
Employee-oriented HRM System	-.045	-.041	.001
Innovation-oriented HRM System	.473**	.281**	.278**
Profession-oriented HRM System	-.115	-.033	-.117
Task-oriented HRM System	.123	.172*	.164*

Note.  $n = 185$ ; \*  $p < .05$ ; \*\*  $p < .01$

Controls: firm size (log), firm age (log), manufacturing enterprise (dummy-coded), state-owned enterprise (dummy-coded)

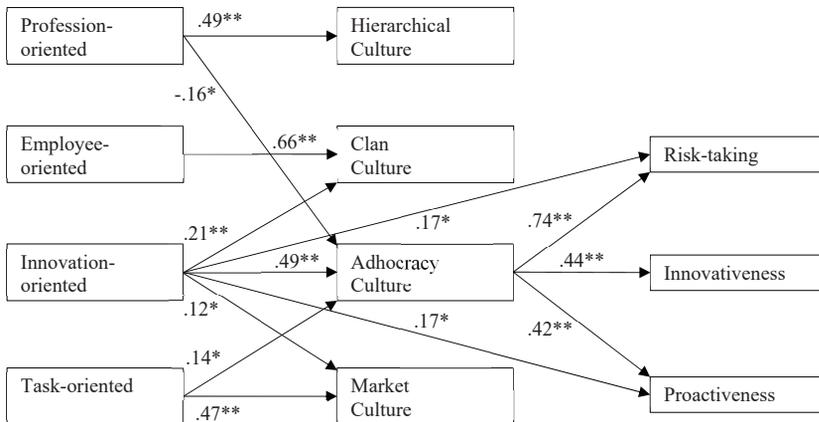
Model fit:

<sup>a</sup> Non-mediated model:  $\chi^2 = 27,128^*$ ,  $df = 13$ ; SRMR = 0.069; RMSEA = .077; CFI = .97; TLI = .87

<sup>b</sup> Mediated model:  $\chi^2 = 62,810^*$ ,  $df = 36$ , SRMR = 0.07; RMSEA = .049, CFI = .99, TLI = .96

Table 5 presents the results for testing the mediating effect of organizational culture in the SHRM - corporate entrepreneurship relationship (i.e., SHRM implementation process).

Results show that for the non-mediated model, the SRMR ( $< .08$ ) and CFI ( $> .95$ ) indicate a good model fit, while the RMSEA ( $> .06$ ) and the TLI ( $< .90$ ) do not. On the other hand, for the mediated model, all fit indices (SRMR  $< .08$ ; RMSEA  $< .06$ ; CFI  $> .95$ ; TLI  $> .90$ ) report a good model fit and thus, indicate that the mediation model is preferable over the non-mediated model. To further investigate if a mediating effect of organizational culture exists, we followed the instructions of Kenny et al. (1998) and decomposed the total effects of the HRM systems on corporate entrepreneurship into direct and indirect effects. Mediation is confirmed when indirect effects are significant (Kenny et al., 1998). Results show that the indirect effects of innovation-oriented HRM systems (ranging from  $.278$  to  $.473$ ,  $< .01$ ) on all dimensions of corporate entrepreneurship and the indirect effect of task-oriented HRM systems on proactiveness ( $.172$ ,  $p < .05$ ) are significant and thus, indicate the mediating role of organizational culture. However, profession- and employee-oriented HRM Systems do not show an effect on corporate entrepreneurship at all. Thus, only partial support for Hypothesis 2 is found. The path diagram in Figure 2 illustrates the entire structural model.



Notes.  $n = 185$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$

Controls: firm size (log), firm age (log), manufacturing enterprise (dummy-coded), state-owned enterprise (dummy-coded);

Model fit:  $\chi^2 = 62,810^*$ ,  $df = 36$ , SRMR = 0.07; RMSEA = .049, CFI = .99, TLI = .96

Each HRM system is found to benefit the implementation of a specific organizational culture: While a profession-oriented HRM system has a significant positive effect on the development of a hierarchical culture ( $.49$ ,  $p < .01$ ), a task-oriented HRM system encourages the establishment of a market culture ( $.47$ ,  $p < .01$ ).

Likewise, employee-oriented HRM systems are significantly positively related to the design of a clan culture (.66,  $p < .01$ ), while innovation-oriented HRM systems facilitate adhocracy cultures (.49,  $p < .01$ ). Additionally, task-oriented HRM systems also slightly improve an adhocracy culture (.14,  $p < .05$ ), while a profession-oriented HRM system hampers its development (-.16,  $p < .05$ ). Innovation-oriented HRM systems are also found to contribute, though to a lesser extent, to the development of clan (.21,  $p < .01$ ) and market (.12,  $p < .05$ ) cultures as well.

Regarding corporate entrepreneurship, adhocracy cultures are found to be the only type of organizational culture which positively affects the proactive (.42,  $p < .01$ ), innovative (.44,  $p < .01$ ), and risk-taking (.74,  $p < .01$ ) behaviour of an established organization. However, due to its direct positive effects on risk-taking (.17,  $p < .05$ ) and proactiveness (.17,  $p < .05$ ), an innovation-oriented HRM system is also identified to directly influence corporate entrepreneurship.

Taking all effects together, adhocracy cultures fully mediate the effect of an innovation-oriented HRM system on innovativeness while partially mediating the positive effects of this HRM system on risk-taking and proactiveness. Moreover, adhocracy cultures fully mediate the effects of a task-oriented HRM system on proactiveness and risk-taking. Therefore, we found that SHRM is an antecedent to implementing a certain organizational culture.

## Discussion and Conclusion

This study examines the role of organizational culture in the SHRM adoption and implementation process on corporate entrepreneurship. Therefore, this study responds to calls for studies to investigate the unique factors of an organization in the SHRM process (Jackson et al., 2014) and contributes to a better understanding of how SHRM impacts corporate entrepreneurship (Hayton and Macchitella, 2013; Tang et al., 2015; Amberg & McGaughey, 2016; Florén et al., 2016).

In doing so, this study evaluated two theoretical perspectives on organizational culture in the process of SHRM on corporate entrepreneurship in the context of organizations located in the Rhine valley: Based on the social context theory, organizational culture is perceived as a kind of an organization's social environment influencing the adoption of SHRM which carries over the effects on corporate entrepreneurship. By contrast, the resource-based view rests upon the role of SHRM in implementing an organizational culture that enables the entrepreneurship of an established organization. Our findings support the second proposition: that it is more likely that SHRM implementation may act as an antecedent to organizational culture, which in turn has a positive effect on the development of corporate entrepreneurship.

This is contrary to the findings of Wei et al. (2008), who evaluated organizational culture in the process of SHRM on organizational performance. Although the

dependent variables under investigation are different, the aim of evaluating the SHRM adoption and implementation process by analysing the mediating effect of organizational culture and SHRM is the same. Wei et al. (2008) found the organizational culture to be an antecedent to SHRM adoption, which positively impacts organizational performance supporting the social context theory. When comparing the underlying samples of both studies, the contradicting results concerning the mediation effect may refer to the sample characteristics and the different stages of organizational development. While the average age of the firms in this study is 76 years, the firms in Wei et al.'s (2008) sample are 14 years on average. Additionally, the average number of employees of this study's sample firms is 3'209 in comparison to 1'264.

However, we argue that the findings of both studies do not necessarily contradict each other. Rather, both studies contribute to the reciprocal relationship between organizational culture and SHRM (Deal & Kennedy, 1982; Den Hartog & Verburg, 2004) and indicate that the direction of influence is likely to change during the life cycle of an organization. Therefore, the social context theory seems more appropriate in explaining the influence of organizational culture on SHRM adoption in smaller and younger organizations. In contrast, the resource-based view seems more appropriate in explaining how these established values and behaviours are shaped by SHRM implementation in larger ones.

On the other hand, the differences might be related to the characteristics of the national cultural context. Chinese cultures, for example, are characterized by high power distance. Hence, the implementation of an SHRM approach rises and falls with the strategic decision of top-level managers (Wei & Lau, 2005; Wei et al., 2008). Moreover, as strategic decisions are supposed to be the outcomes of a reflection of the mindset of the top-level managers (Schein, 2017), the implementation of SHRM is therefore influenced by the culture of an organization sequentially. By contrast, German-speaking cultures are characterized by low power distance. In such cultures, employees are more likely to be actively involved in innovation processes (Tyler et al., 1995), and thus, HRM managers can take the initiative and implement an appropriate organizational culture utilizing SHRM that enables corporate entrepreneurship.

Our results confirm that SHRM implementation critically impacts organizational change by establishing an appropriate organizational culture (Yeung et al., 1991; Brockbank, 1999; Lau & Ngo, 2004; Ngo & Loi, 2008) that positively influences corporate entrepreneurship. Thereby different HRM systems influence the development of different types of organizational culture. To foster corporate entrepreneurship, an adhocracy culture is found to be the most promising organizational culture, which is implemented through an innovation-oriented HRM system. This HRM system encourages the development of innovative initiatives and fosters utilization, creativity, and entrepreneurship and is characterized by little control, continuous

improvement, and the acquisition of new resources. It creates flexible work systems that promote and enhance alliances through intensive training and development, emphasizes new ideas and additional efforts, and places a particular focus on the long-term relationship with employees and the promotion of multiple skills.

However, the relationship between organizational culture and corporate entrepreneurship is crucial. Organizations are facing increasingly dynamic and complex business environments (Corbett et al., 2013; Hughes & Mustafa, 2017), but organizational culture cannot be quickly developed or changed (Zahra et al., 2004). The results of this study indicate that SHRM, in terms of an innovation-oriented HRM system, can help to deal with this situation as it has not only a direct impact on the long-term development of organizational culture but can also directly influence corporate entrepreneurship in terms of proactiveness and risk-taking. Therefore, it offers the flexibility to partially adjust the organizational behaviour in the short term, while it helps sustain competitive advantage through establishing an appropriate organizational culture in the long term.

### Theoretical Implications

The study's findings contribute to current research on organizational culture, SHRM, and corporate entrepreneurship in several ways. While previous research on SHRM has focused on the content of HRM systems, including best practices and bundles of HRM practices, characteristics or orientation of HRM functions or its impact on organizational performance (Panayotopoulou et al., 2002; Wei et al., 2008; Jackson et al., 2014), research that investigates the relationship of SHRM at an organizational level to uncover how the SHRM process impacts organizational outcomes are limited (Wei et al., 2008; Tang et al. 2015; Amberg & McGaughey, 2016; Florén et al., 2016).

This study responds to this situation by replicating the study by Wei et al. (2008) and transferring their research design into a different organizational and cultural context. However, as the study of Wei et al. (2008) has focused only on three cultural types of the Competing Values Framework that are particularly relevant for Chinese firms (Wei et al., 2008), the present study has extended the research design of Wei et al. (2008) by examining all competing types of organizational culture presented by the Competing Values Framework.

Additionally, to measure SHRM, Wei et al. (2008) have adopted items from the SHRM scale developed by Huselid (1995) and a specific SHRM scale developed for Chinese firms by Zhao (2011). Hence, this study has employed a more suitable measurement tool for studying different HRM systems in the German-speaking context and their interconnection with the process of corporate entrepreneurship at an organizational level.

Although this study has employed different measurement instruments for the specific focus on the German-speaking context, the present study shows the applicability of the research design of Wei et al. (2008) for studying the reciprocal relationship between organizational culture and strategic human resource management in general. It thus enriches the toolbox for studying the relationship in a different cultural setting in particular.

Finally, this study highlights the vital role of adhocracy culture in mediating the relationship between SHRM in terms of innovation- or task-oriented HRM system and corporate entrepreneurship. Thereby, this study contributes to the cumulative body of research knowledge on the reciprocal relationship between organizational culture and HRM (Deal & Kennedy, 1982; Den Hartog & Verburg, 2004; Betis et al., 2016) and adds support to the mutual compatibility of the social context theory and resource-based view (Hayton et al., 2013).

### Practical Implications

The paper's results have some implications for managerial actions as well. As the business environment has become more complex, dynamic, and fragile, developing unique resources such as SHRM and organizational culture is essential to tackle present and future challenges. The current pandemic has underlined that organizations are forced to adapt quickly and permanently to an ever-changing environment. The organizational culture at the same time cannot be changed that quickly (Zahra et al., 2004), which underlines once more the critical role of SHRM. Given that, managers should understand the importance of allocating time and resources to HRM to assure that the organization has the desired organizational culture to meet the challenges at the given moment (Bhaduri, 2019).

As different HRM systems impact organizational culture differently, the existence of an appropriate SHRM system is crucial to the success of strategy implementation. Both internal consistency and vertical fit of SHRM are required to guide the cultural development of an organization in the desired direction (Delery & Doty, 1996; Cabrera & Bonache, 1999; Becker & Huselid, 2006; Chow & Liu, 2009; Bhaduri, 2019).

The findings presented in this study suggest that the awareness of this required consistency and fit among the HR managers involved seems to lack behind. As Schuler (1986) already noted, numerous competing choices must be made when designing an HRM system. Therefore, HR managers must carefully elaborate on the existing and desired organizational culture to design an HRM system aligned with corporate strategy and thus reduces the danger of reaching unintended outcomes of SHRM (Jackson et al., 2014). This again underlines the crucial role HR managers have in designing and promoting new organizational cultures that align with the overall corporate strategy.

## Limitations and Future Research

Several future research avenues can be derived from the limitations of the study. Regarding data collection, using a one-respondent source is usually perceived as a limitation (Tzafrir, 2005). Corporate entrepreneurship, for instance, was assessed only by the HR managers, even though one can argue that the higher management is involved in strategic issues, questions related to corporate entrepreneurship may be mainly addressed at the top management level. Likewise, organizational culture was assessed only by the HR managers as well and thus might have led to a biased picture of the overall organizational culture. Therefore, future studies should involve respondents from other functional areas as well.

As this study focused on the cultural dimensions proposed by the competing values model, other types of organizational culture such as developmental, rational, innovative, or bureaucratic (Wei et al., 2008) may have been overlooked. Therefore, future studies that assess different types of organizational culture are required to extend the external validity of the study results.

Moreover, this study has focused on a very specific geographic region in the centre of Europe. As organizational cultures often have different characteristics across national borders and therefore affect entrepreneurship differently (Zahra et al., 2004), the findings of this may be at least partly unsuitable for application in other geographic regions. However, the findings of Voordeckers et al. (2014) showed that entrepreneurial practices and behaviour are often very similar across national borders. Hence, future studies should test the observed effects in other countries to check the transferability of the presented results and the findings of Wei et al. (2008) to other cultural settings to enhance further the cumulative body of knowledge on the replication under study.

Finally, in addition to national cultures, other factors may influence the relationship between organizational culture, SHRM, and corporate entrepreneurship, such as knowledge management and learning, leadership style, network relationships, or other organizational capabilities (Wei et al., 2011).

## References

- Akaike, H. (1987). Factor analysis and AIC. *Psychometrika*, 52 (3), 317–332.
- Amberg, J.J., & McGaughey, S.L. (2016). Strategic human resource management and inertia in the corporate entrepreneurship of a multinational enterprise. *The International Journal of Human Resource Management*, 1–35.
- Antonicic, B., & Hisrich, R.D. (2001). Intrapreneurship: Construct refinement and cross-cultural validation. *Journal of Business Venturing*, 16 (5), 495–527.
- Basilevsky, A. (1994). *Statistical Factor Analysis and Related Methods*. New York: Wiley.
- Barney, J.B. (1986). Organizational culture: Can it be a source of sustained competitive advantage? *Academy of Management Review*, 11 (3), 656–665.

- Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barringer, B.R., & Bluedorn, A.C. (1999). The Relationship between Corporate Entrepreneurship and Strategic Management. *Strategic Management Journal*, 20(5), 421–444.
- Becker, B.E., & Huselid, M.A. (2006). Strategic Human Resources Management: Where Do We Go From Here? *Journal of Management*, 32(6), 898–925.
- Bentler, P.M., & Bonnet, D.C. (1980). Significance Tests and Goodness of Fit in the Analysis of Covariance Structures. *Psychological Bulletin*, 88(3), 588–606.
- Bettis, R.A., Helfat, C.E., & Shaver, J.M. (2016). The Necessity, Logic, And Forms of Replication. *Strategic Management Journal*, 37, 2193–2203.
- Bhaduri, R.M. (2019). Leveraging culture and leadership in crisis management. *European Journal of Training and Development*, 43(5/6), 554–569.
- Brockbank, W. (1999). If HR were really strategically proactive: Present and future directions in HR's contribution to competitive advantage. *Human Resource Management*, 38(4), 337–352.
- Burgelman, R.A. (1983). A Process Model of Internal Corporate Venturing in the diversified Major Firm. *Academy of Management Review*, 8(1), 61–70.
- Cabrera, E., & Bonache, J. (1999). An Export HR System for Aligning Organizational Culture and Strategy. *Human Resource Planning*, 22(1), 51–60.
- Cameron, K.S. & Quinn, R.E. (2011). *Diagnosing and Changing Organizational Culture* (3<sup>rd</sup> ed.). San Francisco: Jossey-Bass.
- Covin, J.G., & Slevin, D.P. (1991). A Conceptual Model of Entrepreneurship as Firm Behavior. *Entrepreneurship Theory and Practice*, 16(1), 7–25.
- Chan, L.L.M, Shaffer, M.A., & Snape, E. (2004). In search of sustained competitive advantage: the impact of organizational culture, competitive strategy and human resource management practices on firm performance. *The International Journal of Human Resource Management*, 15(1), 17–35.
- Chow, I.H.-S., & Liu, S.S. (2009). The effect of aligning organizational culture and business strategy with HR systems on firm performance in Chinese enterprises. *The International Journal of Human Resource Management*, 20(11), 2292–2310.
- Chow, I.H.-S. (2012). The roles of implementation and organizational culture in the HR–performance link. *The International Journal of Human Resource Management*, 23(15), 3114–3132.
- Corbett, A., Covin, J.G., O'Connor, G.C., & Tucci, C.L. (2013). Corporate Entrepreneurship: State-of-the-Art Research and a Future Research Agenda. *Journal of Product Innovation Management*, 30(5), 812–820.
- Deal, TE & Kennedy, A.A. (1982). *Corporate cultures: The rites and rituals of corporate life*. Reading, MA: Addison-Wesley Publishing Company.
- Delery, J.E., & Doty, D.H. (1996). Modes of Theorizing in Strategic Human Resource Management: Tests of Universalistic, Contingency, and Configurational Performance Predictions. *The Academy of Management Journal*, 39(4), 802–835.
- Den Hartog, D.N., & Verburg, R.M. (2005). High performance work systems, organizational culture and firm effectiveness. *Human Resource Management Journal*, 14(1), 55–78.
- Durst, S. & Brunold, J. (2017). *Corporate governance practices in smaller privately held businesses: insights from the Rhine Valley region*. In J. Gabriellson (ed.). *Handbook of Research on Corporate Governance and Entrepreneurship*, 201–224. Cheltenham: Edward Elgar.

- Ferris, G.R., Hochwarter, W.A., Buckley, M.R., Harrel-Cook, G., & Frink, D. D. (1999). Human Resource Management: Some New Directions. *Journal of Management*, 25 (3), 385–415.
- Fitzgerald, T.H. (1988). Can Change in Organizational Culture Really Be Managed? *Organization Dynamics*, 17 (2), 5–15.
- Florén, H., Rundquist, J., & Fischer, S. (2016). Entrepreneurial orientation and human resource management: effects from HRM practices. *Journal of Organizational Effectiveness: People and Performance*, 3 (2), 164–180.
- Giones, F., Brem, A., & Berger, A. (2019). Strategic decisions in turbulent times: Lessons from the energy industry. *Business Horizons*, 62 (2), 215–225.
- Hampel, C., Perkmann, M., & Phillips, N. (2020). Beyond the lean start-up: Experimentation in corporate entrepreneurship and innovation. *Innovation*, 22 (1), 1–11.
- Hayton, J.C. (2005). Promoting Corporate Entrepreneurship through Human Resource Management Practices: A Review of Empirical Research. *Human Resource Management Review*, 15 (1), 21–41.
- Hayton, J.C., Hornsby, J.S., & Bloodgood, J. (2013). Part II: The Contribution of HRM to Corporate Entrepreneurship: a review and agenda for future research. *M@nagement*, 16 (4), 357–432.
- Hayton, J.C., & Macchitella, U. (2013). *HRM, Organizational Culture and Entrepreneurial Capabilities: The Role of Individual and Collective Knowledge Processes*. Enterprise Research Centre, Research Paper No. 5.
- Hinteregger, C., & Durst, S. (2018). A typology of culture-oriented human resource management systems. *International Journal of Sustainable Strategic Management*, 6 (2), 167–187.
- Hornsby, J.S., Kuratko, D.F., & Zahra, S.A. (2002). Middle Managers' Perception of the Internal Environment for Corporate Entrepreneurship: Assessing a Measurement Scale. *Journal of Business Venturing*, 17 (3), 253–273.
- Hughes, M., & Mustafa, M. (2016). Antecedents of Corporate Entrepreneurship in SMEs: Evidence from an Emerging Economy. *Journal of Small Business Management*, 55 (S1), 115–140.
- Hu, L.-T., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6 (1), 1–55.
- Ireland, R.D., Covin, J.G., & Kuratko, D.F. (2009). Conceptualizing Corporate Entrepreneurship Strategy. *Entrepreneurship Theory and Practice*, 33 (1), 19–46.
- Jackson, S.E., Schuler, R.S., & Jiang, K. (2014). An Aspirational Framework for Strategic Human Resource Management. *The Academy of Management Annals*, 8 (1), 1–56.
- Jiang, K., Takeuchi, R., & Lepak, D.P. (2013). Where do We Go From Here? New Perspectives on the Black Box in Strategic Human Resource Management Research. *Journal of Management Studies*, 50 (8), 1448–1480.
- Jöreskog, K., & Sörbom, D. (1993). *LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language*. Chicago: Scientific Software International Inc.
- Kaya, N. (2006). The Impact of Human Resource Management Practices and Corporate Entrepreneurship on Firm Performance: Evidence from Turkish Firms. *The International Journal of Human Resource Management*, 17 (12), 2074–2090.

- Kelloway, E.K. (1996). *Common practices in structural equation modeling*. In C. L. Cooper & I. T. Robertson (eds.). *International review of industrial and organizational psychology* (11<sup>th</sup> ed.), 141–180. London: Wiley.
- Kenny, D.A., Kashy, D.A., & Bolger, N. (1998). *Data analysis in social psychology*. In D. Gilbert, S. T. Fiske & G. Lindzey (eds.). *Handbook of social psychology* (4<sup>th</sup> ed.), 233-265. New York: McGraw-Hill.
- Kramar, R. (2014). Beyond strategic human resource management: is sustainable human resource management the next approach? *The International Journal of Human Resource Management*, 25 (8), 1069–1089.
- Kuratko, D.F., Ireland, D.R., Hornsby, J.S., Covin, J.G., & Ireland, R.D. (2005). A Model of Middle-Level Managers' Entrepreneurial Behavior. *Entrepreneurship Theory and Practice*, 29 (6), 699–716.
- Kuratko, D.F., Covin, J.G., & Hornsby, J.S. (2014). Why implementing corporate innovation is so difficult. *Business Horizons*, 57 (5), 647–655.
- Kuratko, D.F. & Morris, M.H. (2018). Corporate Entrepreneurship: A Critical Challenge for Educators and Researchers. *Entrepreneurship Education and Pedagogy*, 1 (1), 42–60.
- Kraus, S., Berchtold, J., Palmer, C., & Filser, M. (2017). Entrepreneurial Orientation: The Dark Triad of Executive Personality. *Journal of Promotion Management*, 24 (5), 1–21.
- Lau, C.-M., & Ngo, H.-Y. (2004). The HR system, organizational culture, and product innovation. *International Business Review*, 13 (6), 685–703.
- MacKinnon, D.P., & Fairchild, A. J. (2009). Current Directions in Mediation Analysis. *Current Directions. Psychological Science*, 18 (1), 16–20.
- Miller, D. (1983). The Correlates of Entrepreneurship in Three Types of Firms. *Management Science*, 29 (7), 770–791.
- Morris, M.H., Davis, D.L., & Allen, J.W. (1994). Fostering Corporate Entrepreneurship: Cross-Cultural Comparisons of the Importance of Individualism versus Collectivism. *Journal of International Business Studies*, 25 (1), 65–89.
- Moustaghfir, K., El Fatihi, S., & Benouarrek, M. (2020). Human resource management practices, entrepreneurial orientation and firm performance: What is the link? *Measuring Business Excellence*, 24 (2), 267–283.
- Ngo, H.-Y., & Loi, R. (2008). Human resource flexibility, organizational culture and firm performance: an investigation of multinational firms in Hong Kong. *The International Journal of Human Resource Management*, 19 (9), 1654–1666.
- Nunnally, J.C. (1994). *Psychometric Theory* (3<sup>rd</sup> ed.). New York: McGraw Hill.
- Orlitzky, M., & Frenkel S.J. (2005). Alternative pathways to high-performance workplaces. *The International Journal of Human Resource Management*, 16 (8), 1325–1348.
- Patel, P.C., Messersmith, J.G., & Lepak, D.P. (2013). Walking the Tightrope: An Assessment of the Relationship between High-Performance Work Systems and Organizational Ambidexterity. *Academy of Management Journal*, 56 (5), 1420–1442.
- Preacher, K.J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40 (3), 879–891.

- Richard, O.C. Wu, P., & Chadwick, K. (2009). The impact of entrepreneurial orientation on firm performance: The role of CEO position tenure and industry tenure. *The International Journal of Human Resource Management*, 20 (5), 1078–1095.
- Saffold, G.S. (1988). Culture Traits, Strength, and Organizational Performance: Moving Beyond "Strong" Culture. *Academy of Management Review*, 13 (4), 546–558.
- Schein, E.H. (2017). *Organizational Culture and Leadership* (5<sup>th</sup> ed.). Hoboken: Wiley.
- Schmelter, R., Mauer, R., Börsch, C., & Brettel, M. (2010). Boosting Corporate Entrepreneurship through HRM Practices: Evidence from German SMEs. *Human Resource Management*, 49 (4), 715–741.
- Schuler, R.S. (1986). Fostering and facilitating entrepreneurship in organizations: Implications for organization structure and human resource management practices. *Human Resource Management*, 25 (4), 607–630.
- Schuler, R.S., & MacMillan, I.C. (1984). Gaining competitive advantage through human resource management practices. *Human Resource Management*, 23 (3), 241–255.
- Stevenson, H.H., & Jarillo, J.C. (1990). A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal*, 11 (Special Issue), 17–27.
- Tang, G., Wei, L.-Q., Snape, E., & Ng, YC (2015). How effective human resource management promotes corporate entrepreneurship: evidence from China. *The International Journal of Human Resource Management*, 26 (12), 1586–1601.
- Toh, S.M., Morgeson, F.P., & Campion, M.A. (2008). Human resource configurations: investigating fit with the organizational context. *Journal of Applied Psychology*, 93 (4), 864–882.
- Tyler, T.R., Lind, E.A. & Huo, Y. (1995). *Culture, ethnic, and authority: Social categorization and social orientation effects on the psychology of legitimacy* (Working Paper). Berkeley, CA: University of California.
- Tzafir, S.S. (2005). The relationship between trust, HRM practices and firm performance. *The International Journal of Human Resource Management*, 16 (9), 1600–1622.
- Ulrich, D. (1987). Organizational capability as a competitive advantage: Human resource professionals as strategic partners. *Human Resource Planning*, 10 (4), 169–184.
- Vandenberg, R.J. (2006). Statistical and Methodological Myths and Urban Legends. *Organizational Research Methods*, 9 (2), 194–201.
- Voordeckers, W., Van Gils, A., Gabriëlsson, J., Politis, D., Huse, M. (2014). Board structures and board behaviour: A cross-country comparison of privately held SMEs in Belgium, the Netherlands and Norway. *International Journal of Business Governance and Ethics*, 9 (2), 197–219.
- Wei, L.-Q., & Lau, C.-M. (2005). Market orientation, HRM importance and competency: determinants of strategic HRM in Chinese firms. *The International Journal of Human Resource Management*, 16 (10), 1901–1918.
- Wei, L.-Q., & Lau, C.-M. (2008). The impact of market orientation and strategic HRM on firm performance: the case of Chinese enterprises. *Journal of International Business Studies*, 39 (6), 980–995.
- Wei, L.-Q., Liu, J., Zhang, Y., & Chiu, R.K. (2008). The role of corporate culture in the process of strategic human resource management: Evidence from Chinese enterprises. *Human Resource Management*, 47 (4), 777–794.

- Wei, L.-Q., Liu, J., & Herndon, N.C. (2011). SHRM and product innovation: Testing the moderating effects of organizational culture and structure in Chinese firms. *The International Journal of Human Resource Management*, 22 (1), 19–33.
- Weick, K. (1985). *The Significance of Corporate Culture*. In R. J. Frost, L. F. Moore, M. R. Louis, C. C. Lundberg and J. Martin (eds.). *Organizational Culture*, 381–389. Beverly Hills: Sage.
- Wright, P.M., & McMahan, G.C. (1992). Theoretical Perspectives for Strategic Human Resource Management. *Journal of Management*, 18 (2), 295–320.
- Yeung, A., Brockbank, J.W., & Ulrich, D.O. (1991). *Organizational culture and human resource practices: An empirical assessment*. In R. Woodman and W. Passmore (eds.). *Research in organizational change and development* (5<sup>th</sup> ed.), 59–81. Greenwich: JAI Press.
- Zahra, S.A. (1991). Predictors and financial outcomes of corporate entrepreneurship: An explorative study. *Journal of Business Venturing*, 6 (4), 259–285.
- Zahra, S.A. (1996). Governance, Ownership, and Corporate Entrepreneurship: The Moderating Impact of Industry Technological Opportunities. *The Academy of Management Journal*, 39 (6), 1713–1735.
- Zahra, S.A., Hayton, J.C., & Salvato, C. (2004). Entrepreneurship in family vs. non-family firms: A resource-based analysis of the effect of organizational culture. *Entrepreneurship Theory and Practice*, 28 (4), 363–381.
- Zhang, Z., & Jia, M. (2010). Using social exchange theory to predict the effects of high-performance human resource practices on corporate entrepreneurship: Evidence from China. *Human Resource Management*, 49 (4), 743–765.
- Zhu, C.J., Cooper, B., De Cieri, H., & Dowling, P. J. (2005). A problematic transition to a strategic role: Human resource management in industrial enterprises in China. *The International Journal of Human Resource Management*, 16 (4), 513–531.

## Appendix 1: Items Measuring Culture-oriented HRM Systems

### Employee-oriented (alpha = .73)

1. Training and development activities are concentrated on teambuilding and interpersonal relations.
2. Recruitment and selection processes focus on the teamwork skills. Internal or network-based recruitment instruments are preferred.
3. Performance appraisal highly relies on team performance and the ability to work with others.
4. Job advertisements emphasize the personal work environment and stress characteristics such as teamwork, openness and mutual trust.

### Innovation-oriented (alpha = .69)

1. Training and development activities are comprehensive and continuous. They require extensive investments of time and/or money and are concentrated on the versatility of the employees.

2. Recruitment and selection process focus on the versatility of the employee as well as on the potential to develop new skills.
3. Compensation and rewards emphasize new ideas and extra efforts.
4. Personnel planning put particular attention to the long-term relationship with the employee and the promotion of multiple skills.

#### Task-oriented (alpha = .62)

1. Training and development activities concentrate on the further development of existing skills rather than on the development of new ones.
2. Compensation and rewards balance market wages with incentives focusing on the short-term productivity targets.
3. Performance appraisals highly rely on the measurement of objective and quantifiable results.
4. Dismissal of personnel is mostly related to the lack of performance or insufficient target achievements.

#### Profession-oriented (alpha = .71)

1. Training and development activities concentrate on compliance with present behaviours, procedures, and standards.
2. Compensation and rewards are based on top-down appraisal systems.
3. Personnel planning put particular attention to the reoccupation of vacant positions to ensure a smooth functioning of existing processes and systems.
4. Dismissal of personnel is mostly related to problems with hierarchical systems or internal processes.