



How Human Resource Management Practices Translate Into Sustainable Organizational Performance: The Mediating Role Of Product, Process And Knowledge Innovation

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Samma Faiz Rasool ¹⁻³
Madeeha Samma ³
Mansi Wang^{2,4}
Yan Zhao³
Yanping Zhang^{2,4}

¹Postdoctoral Station of Statistical, Guangzhou University, Guangzhou 510006, People's Republic of China;

²School of Innovation and Entrepreneurship, Entrepreneurship Institute, Guangzhou University, Guangzhou 510006, People's Republic of China; ³School of Management, Shanghai University, Shanghai 200444, People's Republic of China; ⁴School of Management, Guangzhou University, Guangzhou 510006, People's Republic of China

Background: This study examined how human resource management (HRM) can directly and indirectly influence sustainable organizational performance (SOP), with organizational innovation (OI) as a mediator.

Research methods: For this quantitative study, a 31-item questionnaire was used to collect data on HRM and SOP from 20 Shanghai branches of five Chinese banks. HRM was defined as multidimensional, consisting of employee staffing, staff development, performance management, and compensation and benefits. Partial least squares structural equation modeling (PLS-SEM 3.2) was used to estimate the effects.

Results: The HRM practices of performance management and compensation and benefits showed a direct and positive influence on SOP. Looking at indirect relationships, all four dimensions of HRM practices were positively related to OI (product, process, and knowledge innovation), which, in turn, was positively related to SOP. Organizational innovation was thus shown to play a mediating role between HRM and SOP.

Conclusion: The study emphasizes that the banking sector of China consists of many employees who maintain old styles of working, alongside some who attempt to take on the new innovative working mechanisms and engage with staff development programs. This latter group of personnel make a valuable contribution to SOP. Moreover, the effect on organizational dynamics of implementing HRM practices aids in bringing about innovations in processes, products, and knowledge.

Keywords: human resource management practices, organizational innovation, sustainable organizational performance

Introduction

Human resource development is a central part of restructuring organizations, whether the aim is to develop organizational infrastructure, improve business processes, or increase knowledge, innovativeness or other organizational parameters. In dynamic organizational environments, the rewards stemming from investments in human resources are recognized by academics and practitioners. This is especially true in the current era with its emphasis on innovative, knowledge-based organizations. In this context, human resource development plays an especially important role in achieving sustainable organizational performance (SOP).¹ While there have been many attempts to determine the intervening

Correspondence: Mansi Wang
School of Innovation and Entrepreneurship,
Entrepreneurship Institute, Guangzhou
University, Guangzhou 510006, People's
Republic of China
Tel +86133402886761
Email wangmansi@163.com

Yan Zhao
School of Management, Shanghai University,
Shanghai 200444, People's Republic of
China
Tel +86 13917262801
Email zhaoyan87@shu.edu.cn

constructs for this relationship, this study uses a more synthesized framework to uncover new insights.

Since the inception of organizational human resources, HRM practices have aimed at the acquisition, development, and motivation of employees as a key to attaining SOP. Barney (1991) argued that human resource practices are the key to attaining SOP and that HRM practices should, therefore, be treated as a central part of organizational strategy. Many theories in the extant literature support this notion that staff are to be treated as an integral resource of any organization; most importantly, the resource-based (RBV) and knowledge-based (KBV) theories have both presented this argument, and weighted human resources equal with other organizational resources in generating SOP.² Organizational managers have responded over recent decades by adopting a range of human resource practices to support their business performance, including in the areas of employee staffing, performance management, staff development, and compensation and benefits.³ Analysis of these highlighted HRM practices has provided many insights for the field of strategic management, and led to developments in the economics of organizations, firm competitiveness, and the working dynamics of employees.

Organizational innovation (OI) is thought to be another important contributor to SOP. Many researchers have formed the view that encapsulating the attribute of innovation, definitive of the current era of business, is critical to SOP. As organizations are now strongly encouraged to incorporate innovative processes into their business models, much research emphasis is being placed on identifying the contributing factors of innovativeness. In particular, the relationship between HRM practices, OI, and SOP has recently received significant attention in management studies.⁴⁻⁶ According to the literature, certain HRM practices have a positive relationship with sustained organizational innovations,^{7,8} which also enhance SOP.⁹ On the basis of these previous research findings, this study takes innovation (in the realms of product, process, and knowledge) as an intervening construct in attaining SOP.¹⁰

Despite the strong interest among researchers and practitioners, some gaps remain in establishing the interrelationship of HRM practices, innovativeness and SOP. First, most of the research focuses on the exercise of innovation in developed countries, with studies undertaken in Europe, the USA, Japan, Singapore, Korea, New Zealand, and Russia.¹¹⁻²⁰ Meaningful research results and insights are in their infancy for emerging economies. Second, firms in the banking sector, including financial institutions and

other related organizations, are showing an inclination toward innovation, but are not a major focus of the literature. Third, a few studies have examined the direct relationship between HRM practices and OI or between HRM practices and SOP,^{21,22} but the three-way relationship between HRM practices, OI, and SOP is unexplored. Especially, studies have not considered OI as an intervening construct between HRM practices and SOP.

Based on the above-mentioned research impetus, the purpose of this study is to address these gaps in the framework of the RBV and KBV theories. This study emphasizes the intervening constructs of innovation to provide new dimensions for subscribing to sustainable organizational performance. Within the developed research framework the study addresses the following research questions:

RQ1. How do HRM practices (employee staffing, staff development, performance management, and compensation and benefits) bring about sustainable organizational performance (SOP)?

RQ2. How does organizational innovation (product, process, and knowledge innovation) intervene in the relationship between HRM practices and sustainable organizational performance (SOP)?

The remainder of paper is organized as follows. [Section 2](#) is devoted to the conceptual background. [Section 3](#) frames the hypotheses and outlines the theoretical framework. [Section 4](#) addresses the methodology. [Section 5](#) presents the results of the data analysis. [Sections 6 and 7](#) conclude the study and provide a discussion of the results and their implications, and suggestions for future research directions.

Literature Review

Background Of HRM Practices In China

Organizations in emerging countries are becoming aware of HRM practices and their importance. In China, a number of scholars have discussed the practical and theoretical issues with the implementation of HRM practices in modern Chinese firms. Wang²³ addressed the concept of HRM in Chinese culture, borrowing the concept of HRM from theories of organizational psychology, and presented his insights to Chinese firms.²⁴ Many HRM practices were also brought about in the mid-1990s by national changes, such as greater concern with the welfare of employees and changes in labor laws and regulations. Performance-based compensation, fixed-term employment contracts, employee relations and succession planning were introduced in this

period. In the late-1990s, Chinese firms came to realize that their HRM practices required several changes to promote innovation.²⁵ Since then, HRM practices have been extensively applied in Chinese firms from the perspective of innovativeness. However, the traditional economic systems did not necessarily provide support to changes in the labor market in China. Additionally, multinational organizations started investing in Chinese organizations toward the end of the 1990s, and these investments brought Western capital, corporate cultures, and management styles to Chinese firms. The organizational dynamism brought to China by organizations from developed countries opened the door for researchers to examine HRM in the Chinese context.²⁶ At the beginning of the 21st century, dynamic reforms in HRM-practices were launched in the international market that affected the Chinese labor market. China became a member of the WTO (World Trade Organization) in December 2001,²⁷ which brought many reforms into the Chinese economy and created a complex market and operational environment. These reforms further brought modern HRM practices into Chinese firms.²⁸

Concept Of Human Resource Management (HRM)

HRM can be defined as the policies and practices required to perform the routines of human resources in an organization, such as employee staffing, staff development, performance management, compensation management, and encouraging employee involvement in decision making.²⁹ Foss and Lyngsie (2011) give the following reasons for engaging in HRM practices: first, to assign duties to employees and teams; second, to develop and publicize incentives for knowledge sharing, individual achievements, and benefit sharing; third, as a medium for intra-organization information sharing about practices like job rotation and knowledge sharing; fourth, to generate internal and external training opportunities for employees; and last, to carry out retention, recruitment, and promotion policies to fulfill the organization's HR needs. The last two of these tasks are considered part of conventional HRM practice, whereas the first three are more modern HRM roles.³⁰

HRM practices are considered significant to attaining an organization's goals and gaining a competitive advantage.³¹ The success of any organization depends upon many factors, but RBV considers employees to be the most important resource. Organizations can achieve SOP by encapsulating the benefits of good HRM practices and innovation in

routine business processes.³² Past research has discussed these practices in the perspective of VRIN ("valuable, rare, imperfectly imitable and non-substitutable") resources, arguing that these qualities of human resources contribute to SOP.^{4,33} This means that HRM implementations are becoming critical to organizations. Management personnel are taking a keen interest in their organization's ability to exercise HRM practices to positively shape the working conduct of employees and fully utilize their capacity to deliver innovative business processes, help to meet organizational objectives, and ultimately realize SOP.³⁴

Therefore, the authors believe that HRM practices play a dual role in SOP. On the one hand, HRM practices and policies are used to manage and to organize the work, incorporating the organization's basic structure. HRM practices and policies serve to manage and employ people by incorporating individual administration tasks and the development of new procedures, either in consultation with or communicated to individuals and teams within the organization.³⁵ On the other hand, diverse HRM implementations can also be viewed as significant to support and stimulate creativity, primarily by empowering the sovereignty of workers and consequently giving rise to novel procedures.³⁶ With this dual role of HRM practices in mind, it is not just a question of managing work and representing business structures, there is also the potential for HRM to unlock the imagination of personnel. Therefore, it is conceivable that HRM practices and policies could be utilized to bring about innovativeness and thus create an innovation-driven path toward SOP.³⁷

Organizational Innovation (OI)

Since the inception of the Industrial Revolution, innovation has been considered an advantageous attribute for many organizations. OI provides a point of difference for those organizations that can viably use innovative systems to attain benefits and increase market share.³⁸ OI has been defined as "the acceptance of behavior or an idea to create value for the organization".³⁹ This entails that organizational advancement involves the appropriation of ideas from outside the organization and the generation of ideas within. Moreover, the literature suggests that organizations not only create ideas but also develop, and ultimately implements these ideas.⁴⁰ Ideas need to be followed up with implementation, which spans commencement, execution, and determination.⁴¹ Damanpour (1996) therefore argues that innovation in an organization means the successful implementation of unique ideas for product

development, processes development and knowledge development.⁴² Innovation also improves existing corporate practices through structural changes, improving organizational methods, and re-engineering management strategies.⁴³ OI applied to organizational design and structure can lead to improved intra-organizational coordination and cooperation instruments.⁴⁴

In this study, we adopt the classification of OI by Bruton & White⁴⁵ into product, process, and knowledge innovation. Product innovation introduces goods and related tangible or intangible services that have significantly new and improved characteristics or projected usage.⁴⁶ Process innovation is the implementation of significantly new and improved means of delivering production.⁴⁷ Knowledge innovation draws on the facts, information, and skills acquired by employees through their experiences and available resources.³⁴ Without creative ideas arising from employees, there is unlikely to be any innovation in an organization.

Sustainable Organizational Performance (SOP)

Sustainability, an ongoing concern for several developing economies, enterprises and organizations, is an approach to attaining organizational performance.⁴⁸ The United Nations characterizes sustainable development as that which “meets present needs without compromising the ability of future generations to meet their own needs”.⁴⁹ The SOP of an organization is mainly based on the execution of the firm’s plans of action, and involves the ideal positioning of its services and products amongst its competitors. Sustainability is seen as productive to the organization, such that sustainability is not just an idea but an ideology that posits a congruity of ecological, societal, and economic concerns.⁵⁰ Emphasizing sustainability throughout an organization will have an influence on elements of HRM.^{50,51} Firms accomplish sustainability partly by encouraging OI (in terms of product, process, and knowledge innovation) and pursuing human development-based business models. Organizations can make sustainable plans of action by acquiring information about their markets, customers, competitors, and future advances. Given that OI involves the acceptance of new ideas to create value, it therefore serves as a pivotal factor for SOP.

Organizational performance (OP) is one of the most highly researched outcome variables in the management literature.^{52,53} Some researchers exclusively focus on the

narrow financial performance of the organization while some focus on the larger economic performance of the organization.⁵⁴ However, in this study, we select SOP as an outcome variable. Increasingly, sustainability in organizations is being defined more broadly, and incorporates the economic, social and environmental effects of the organization’s production processes. SOP involves consistent financial success, maintaining the organization’s image, and sustainability-related outcomes.⁵⁵ Furthermore, Wiggins and Ruefli (2002) argue that SOP represents an organization’s capacity to achieve and sustain competitive advantages over time.

Hypotheses Framing And Theoretical Framework

In this study, the proposed model highlights that HRM practices can bring about an advancement in SOP through OI (product, process, and knowledge innovation). HRM practices and OI have long been major concerns among researchers and practitioners for their role in producing OP. HRM practices are being treated as an agent of competitive advantage,⁵⁶ and diverse effects on OP have been claimed by researchers in the field of HRM.^{57,58} The RBV contends that the execution of HRM-practices may make a significant difference to OP.⁵⁹ In dynamic business environments, HRM practices have an impact on the innovativeness of firms and constitute essential tools for firms to improve their SOP. Therefore, the authors of the present study contend that OI mediates the connection between HRM practices and SOP, and seek to explore the mediated effect of OI on the relationship between several HRM practices and SOP. The current study analyzes these relationships empirically and highlights the impact of HRM practices on SOP through OI in an emerging nation. This study also complements previous work by clarifying the role of HRM practices in shaping the OI that lead to SOP.

It is well established that firms can attain SOP by expanding their financial status when contrasted with their competitors. In fact, SOP has been defined as “the ability of a firm to generate a higher amount of economic worth than the economic worth of their competitors.”⁶⁰ However, SOP might also be evaluated in relation to the human resources of a firm’s competitors. It is now common practice for organizations to painstakingly analyze their HRM-practices against their competitors due to help them to achieve SOP.⁶¹ It is a challenging task for organizations to sustain their performance through human

resources, but an inclusive strategy can enable organizations to face this challenge.⁶² SOP needs to be considered with the end goal of making it one of a kind for a particular firm; otherwise, opponents can duplicate the business processes, thus opening the door for a loss of SOP. As Barney² argues, SOP requires VRIN resources, and the persistence of these traits ought to be confirmed to make SOP feasible.

Existing literature explains that HRM practices have a significant relationship with OI (product, process, and knowledge innovation) and sustainable outcomes for an organization.^{57,63} The key purpose of HRM practices is to achieve organizational goals through personnel and generating competitiveness within the organization.⁶⁴ However, firms are also in dire need of inventive employees who are flexible, risk taking, quick to make decisions and tolerant of different kinds of uncertainty.⁶⁵ Based on RBV and KBV theory, some scholars claim that workers' observations of a firm's high commitment to HRM practices have deep-rooted influences on employees' productivity in working toward organizational performance.⁶⁶ Furthermore, employee creativity enhances OI, which can then help the organization to improve SOP.⁶⁷ Based on these ideas, the proposed research model of the study is shown in Figure 1, which demonstrates all of the hypotheses.

HRM Practices And SOP

A large number of HRM researchers have highlighted the positive relationship between HRM practices (employee staffing, staff development, performance management, and

compensation and benefits) and SOP.^{61,68,69} Multiple studies have also been designed and published on the specific topic of effective HRM practices and their effects on SOP; these also support the existence of a positive relationship.⁷⁰ RBV theory also supports the notion that organizational resources are very important for sustainable success, and HRM is key among all resources of an organization.⁷¹ Furthermore, RBV states that different capabilities and organizational resources positively affect the sustainability of organizational outcomes.⁷² Some scholars with a universalistic approach have argued that HRM practices collectively improve SOP,⁷³ and recommend the use of HRM practices to enhance financial, operational, and organizational performance.¹⁴ Others suggest that particular forms of HRM practices promote SOP, such as profit sharing and result-oriented performance appraisals,⁷⁴ or selective recruitment and the practices of staff development and compensation and benefits.¹⁴ These findings have greatly helped in understanding the relationships between various HRM practices and SOP. Thus, the positive relationship between HRM practices with SOP is predicted with the following hypothesis:

H1a. Employee staffing positively influences sustainable organizational performance

H1b. Staff development positively influences sustainable organizational performance

H1c. Performance management positively influences sustainable organizational performance

H1d. Compensation and benefits positively influences sustainable organizational performance

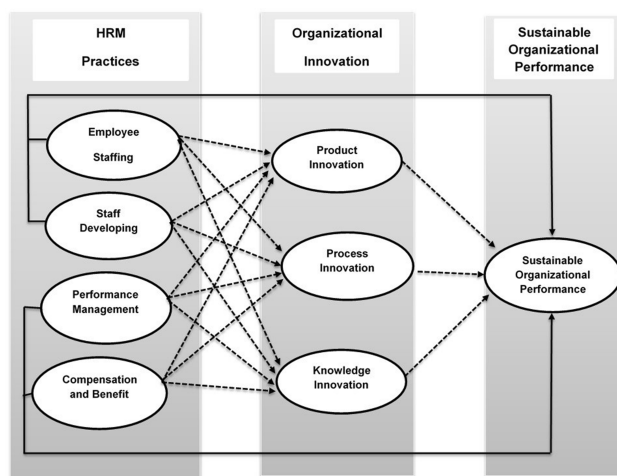


Figure 1 Proposed research model.

Note: Arrows indicate hypothesized positive relationship. Solid arrows suggest a direct relationship and dashed arrows suggest an indirect relationship in the model.

HRM Practices And Organizational Innovation

Human resources are a set of knowledge, skills, and expertise that people have, and are an important source of competitive advantage and organizational performance.⁷⁵ Chen and Huang (2009) suggest that HRM practices are effective in changing the attitudes, capacities, and behaviors of employees to attain the organizational goals in more efficient and effective ways. However, they argue that when companies are involved in innovative activities, they encounter relatively more uncertainty in the practice of innovation. According to the contemporary view of theory in management studies, different approaches are taken to innovation in human resources through managerial skills, attitudes, and abilities.⁷⁶ These skills include attitude, education, and interpersonal attributes,

such as social behavior and assertiveness. Further, it is ultimately the ability to innovate that gives the HRM framework the capacity to generate value for the organization.⁵⁹ Organizational outcomes emerge from HRM practices that push people towards creativity and sustainable organizational development.⁵⁸ This literature indicates that HRM practices and OI both have a positive and significant relationship to SOP.

Employee staffing and retention policies assure the flow of valuable high-standard employees into advanced organizations.⁷⁴ Human capital is the backbone of any organization that seeks to add creativity through employee staffing. OI and organizational knowledge also have a close relation. It is evident that OI is reliant upon the firm's knowledge, which starts by recruiting talented employees.⁷⁷ If the firm recruits the right people for the right jobs, they will play key roles in innovation. Thus, successful organizations establish a pool of innovative teams that carefully recruit employees and make the competitive recruiting network environment work for sustainably developing the organization.⁷⁸ Past literature shows that employee staffing has a positive and significant relationship with OI (product, process, and knowledge innovation).³⁴ In this spirit, we hypothesize the following in relation to employee staffing practices:

H2a. Employee staffing positively influences product innovation

H2b. Employee staffing positively influences process innovation

H2c. Employee staffing positively influences knowledge innovation

According to RBV, OI (product, process, and knowledge innovation) is central to achieving SOP.⁷⁹ Organizations that offer advanced products to their target markets, capture new customers and enhance employee performance generate sustainable competitive advantages.⁸⁰ If HRM practices support OI and innovation supports SOP, then OI has a direct connection or nexus with employee performance management.⁸¹ Studies have repeatedly shown that performance management as positively associated with OI.^{71,82} Hence, a positive association of performance management with OI is predicted in the following hypotheses:

H3a. Performance management positively influences product innovation

H3b. Performance management positively influences process innovation

H3c. Performance management positively influences knowledge innovation

Employees with extensive expertise, skills, and knowledge bring innovation to organizations.⁸³ OI therefore requires the broad application of staff development techniques.⁸⁴ Laursen and Foss (2003) found that OI had a positive relationship with internal and external staff development practices. A number of researchers have shown that staff development practices are positively connected with OI, but that characteristics of the employees moderate this association. For example, it has been suggested that not all employees will respond to staff development initiatives in the same way: employees who plan to remain for longer in the organization will participate more positively than those who are temporary.⁸⁵ Thus, the positive relationship between staff development practices and OI is predicted in the following hypotheses:

H4a. Staff development positively influences product innovation

H4b. Staff development positively influences process innovation

H4c. Staff development positively influences knowledge innovation

Compensation and benefits practices affect the behavior of employees and OI (product, process, and knowledge innovation). According to abilities, motivation, and opportunities theory (AMO), compensation and benefits form a part of the motivation goal of HR practices, affecting attitudes at work and bringing creativity to organizations.⁸⁶ Firms attract skilled workers through attractive compensation and benefits packages and innovative rewards systems.¹ The compensation and benefits system affects innovation in three ways: first, by attracting innovative employees to the organization and retaining them; second, by giving employees a general sense of motivation that then makes them more likely to engage in creative behavior; and third, by offering specific motivators, such as recognition, special incentives, and merits for creative ideas.³⁶ In line with these three ways that compensation and benefits practices can have a positive and significant association with OI, the following hypotheses are proposed:

H5a. Compensation and benefit positively influence product innovation

H5b. Compensation and benefit positively influences process innovation

H5c. Compensation and benefit positively influence knowledge innovation

Organizational Innovation And Sustainable Organizational Performance

A large number of scholars have developed theoretical models and concepts to bring out the relationship between OI (product, process, and knowledge innovation) and SOP. There is clear evidence that OI has a positive relationship with SOP.^{79,84,87-91} The literature consistently argues that innovation in firms affects financial and administrative performance.⁹² Also, new product development and new services deployment can increase profitability and SOP.⁴⁶ OI is strong in organizations that strive to break through, change the status quo, and develop new products, processes, and knowledge.⁹³ These arguments suggest that each of the three forms of OI (product, process, and knowledge) are positively related to SOP, which leads to the following hypotheses:

H6a. Product innovation positively influences sustainable organizational performance

H6b. Process innovation positively influences sustainable organizational performance

H6c. Knowledge innovation positively influences sustainable organizational performance

Mediating Effect Of Organizational Innovation

Most of the studies reviewed above indicate that OI has a direct effect on OP. However, Volberda, Van Den Bosch, and Heij⁹⁴ suggest in their study that OI plays a mediating role between HRM practices and SOP. Similarly, Tsang and Zahra (2008) confirm that organizational innovations are influenced by HRM practices, and then in turn enhance SOP.⁹⁵ Extant literature demonstrates that OI serves as a key mediator between HRM practices and SOP.⁹⁶ Hence, the following hypothesis is put forward:

H7. Organizational innovation (product, process, and knowledge innovation) mediates between the relationship

of HRM practices (employee performance, staff development, employee staffing, and compensation and benefits) and sustainable organizational performance

Research Methods

The banking sector in the emerging country of China is selected as the site of this study for the following reasons. Most studies related to this subject have been conducted in advanced countries, with relatively very few studies conducted in emerging countries with different OP perspectives. Recently, China has undergone much development in HRM practices, which creates an impetus for this research. While there is extensive utilization of modern HRM practices across Chinese companies, the banking sector is a major domain for innovation and constitutes a good site for this research, as well as being readily accessible to the authors.

Questionnaire Design

A questionnaire survey was used for this study, which is a common methodology to collect a wide range of responses in empirical research. Thirty-one items were included in the questionnaire, each offering respondents choices from a 5-point Likert scale. The items used in this research were adapted from related literature. With the exception of process innovation, each of the HRM practices (employee staffing, staff development, performance management, compensation and benefits) and fields of innovation (product innovation and knowledge innovation) were measured with four items, in line with the literature.^{25,34,60,64,98,99} SOP was measured with three items.⁶⁰ A pilot test of 20 participants with similar demographics as the final sample was performed to test the usability of the questionnaire. After making some minor corrections, it was confirmed that all of the items were well understood and the respondents had filled out the questionnaires successfully. The detail of the questionnaire (research instrument) and factor loading of each item is showing in the [Appendix](#).

Data Collocation

The data were collected from 20 Shanghai branches of five Chinese banks that exercise modern HRM practices and have incorporated modern innovation mechanisms into their businesses. Due to data confidentiality, we report the selected banks as Bank A, B, C, D, and E. The author distributed 365 questionnaires among banking employees, 15 of which were rejected because the banks were not proven to be appropriate for the survey. The final sample consists of 350 responses.

Measures

The items for employee staffing (ES) were adopted from Ngo, Lau, and Foley (2008).²⁵ Four items were used marked on a 5-point Likert scale (ranging from 1=strongly disagree to 5=strongly agree). Sample items included “Our organization staff selection process is rigorous,” and “Our organizational selection is based on the expertise and skills set of potential candidates.” Cronbach’s alpha for employee staffing was 0.805 (see Table 2).

Staff development (SD) items were adopted from Lu et al⁹⁸ and Chen and Huang (2009).³⁴ Four items were used marked on a 5-point Likert Scale (ranging from 1=strongly disagree to 5=strongly agree). Sample items included “In our organization, on-the-job training is more important than formal,” and “Our organization has formal training activities.” Cronbach’s alpha for staff development was 0.717 (see Table 2).

Performance management (PM) also used four items, adapted from Ali et al, Molleman and Timmerman,¹⁰⁰ and Ngo et al.²⁵ All items were marked on a 5-point Likert scale (ranging from 1=strongly disagree to 5=strongly agree). Sample items included “Employees behavior is an important factor for performance appraisal,” and “Employees who perform insufficiently carry less salary.” Cronbach’s alpha for performance management was 0.783 (see Table 2).

Compensation and benefits (CB) used four items developed by Molleman and Timmerman.¹⁰⁰ All items were marked on a 5-point Likert scale (ranging from 1=strongly disagree to 5=strongly agree). Sample items included “Our compensation package is more competitive than other organizations in the same industry,” and “Our remuneration package is intended to promote employee retention.” Cronbach’s alpha for compensation and benefits was 0.810 (see Table 2).

Product innovation (PDIn) used four items developed by Chen and Huang³⁴ and Prifti and Alimehmeti (2017).⁹⁹ All items were marked on a 5-point Likert scale (ranging from 1=strongly disagree to 5=strongly agree). Sample items included “In comparison with competitors, our organization has introduced more innovative products and services during the past three years,” and “We manage to cope with market demands and develop new products and services quickly through innovativeness.” Cronbach’s alpha for product innovation was 0.766 (see Table 2).

Process innovation (PCIn) was measured by three items adapted from Chen and Huang (2009).³⁴ However, the measurement of work productivity was modified

according to the needs of this research. Work productivity was calculated by averaging the items to ensure higher scale values represent higher levels of productivity. Sample items included, “New or significantly innovative processes improve of organizational services,” and “Our organization facilities new innovative processes to improve quality and cost reduction.” Cronbach’s alpha for process innovation was 0.843 (see Table 2).

Knowledge innovation (KIn) used four items developed by Akram, Goraya, Malik, and Aljarallah (2018).⁶⁰ All items were marked on a 5-point Likert scale (ranging from 1=strongly disagree to 5=strongly agree). Sample items included “Our organization has knowledge-based processes,” and “There exist formal processes in our organization to share the best practice among the different fields of activities.” Cronbach’s alpha for knowledge innovation was 0.917 (see Table 2).

Sustainable organizational performance (SOP) is the dependent variable, for which we used three items developed by Akram et al (2018).⁶⁰ All items were marked on a 5-point Likert scale (ranging from 1=strongly disagree to 5=strongly agree). Sample items included “Our creative products/services incorporate the concepts of environmental sustainability and organizational knowledge,” and “During production and service supply, our operational cost is low compared to our competitors.” Cronbach’s alpha for SOP was 0.791 (see Table 2).

Demographics

The selected banks were already exercising modern HRM-practices and aware of the innovation mechanisms that these practices bring about in achieving SOP. The majority of the respondents were male (54.6% males and 45.4% females); 30% of respondents had less than five years of work experience, 31.9% had 5–10 years, and 31.1% more than ten years; 16% of respondents were senior managers, 44.3% were middle managers, and 38.9% were administrative staff; 30.6% were under the age of 35 years, 28.3% were 35–44 years old, and 9.7% were aged more than 44 years; 41.7% had completed undergraduate studies, 45.7% graduate, and 12.6% post-graduate. Five major Chinese banks were considered for this study, with the distribution of the sample being as follows: Bank A, 21.7%, Bank B, 18.9%, Bank C, 20%, Bank D, 19.1%, and Bank E, 20.3%. The data are sufficient to run a path analysis in SmartPLS. Previous studies have had comparable sample characteristics.^{95,101} Table 1 displays the demographic statistics of respondents. A comprehensive research methodology flowchart is shown as Figure 2.

Table 1 Demographics

Measure	Item	Frequency	Percentage
Gender	Male	191	54.6
	Female	159	45.4
Working Experience	Less than five years	105	30
	5–10 years	136	38.9
	Above ten years	109	31.1
Position	Senior Managers	59	16.9
	Middle Managers	155	44.3
	Administrative Staff	136	38.9
Respondent Age	Less than 25 years	107	30.6
	25–34 years	110	31.4
	35–44 years	99	28.3
	Above 44 years	34	9.7
Education	Undergraduate	146	41.7
	Graduate	160	45.7
	Post Graduate	44	12.6
Banks	A	76	21.7
	B	66	18.9
	C	70	20
	D	67	19.1
	E	71	20.3

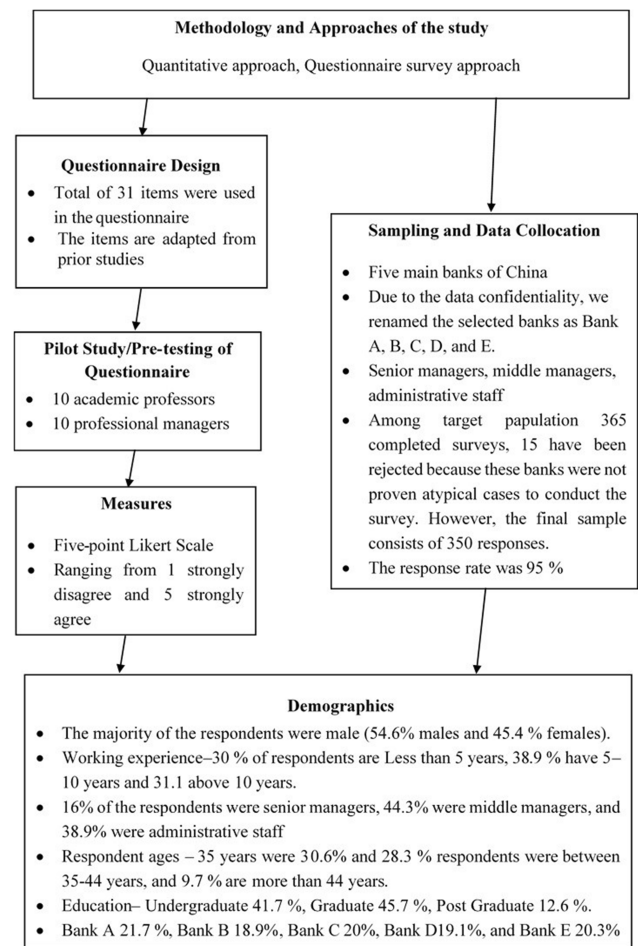


Figure 2 Research methodology flowchart.

Analysis And Results

A partial least squares structural equation modeling (PLS-SEM 3.2) approach was used to analyze the relationships drawn from the theoretical framework.¹⁰² The reason for selecting a variance-based structural equation modeling (SmartPLS) approach is that it is comparatively less sensitive to sample size when compared to covariance-based SEM approaches like AMOS.¹⁰³ We first examined the reliability and validity of the scales.¹⁰⁴ Table 2 presents the results of testing for the reliability and validity of all constructs. The reliability measures (i.e., Cronbach’s alpha, rho_A, and composite reliability) for all constructs were found to be greater than the threshold of 0.7,¹⁰⁵ and the AVE of each construct was greater than the threshold of 0.5.¹⁰⁶

To further test the reliability of constructs used and their specified convergent validity, discriminant validity was checked.¹⁰⁶ For this purpose, the square root of the AVE for each construct should be higher than the shared variance among constructs. Table 3 shows the diagonal values in bold to be higher than the inter-construct correlation values. The discriminant validity was therefore recognized.

Hypotheses Testing

Hypothesis testing was done through the bootstrapping mechanism in SmartPLS.¹⁰² Table 4 demonstrates the direct effects in the theoretical framework along with t-values and p-values. The results indicated that PM and CB positively influences SOP ($\beta=0.278, p<0.000$; $\beta=0.098, p<0.016$), but ES and

Table 2 Construct Reliability And Validity

Constructs	Alpha	rho_A	CR	AVE
Employee staffing (ES)	0.805	0.802	0.873	0.634
Staff development (SD)	0.717	0.714	0.826	0.545
Performance management (PM)	0.783	0.786	0.860	0.606
Compensation and benefit (CB)	0.810	0.822	0.875	0.636
Product innovation (PDIn)	0.766	0.769	0.851	0.588
Process innovation (PCIn)	0.843	0.853	0.895	0.681
Knowledge innovation (KIn)	0.917	0.921	0.942	0.802
Sustainable organizational performance (SOP)	0.791	0.792	0.878	0.706

Abbreviations: Alpha, Cronbach’s alpha; CR, composite reliability; AVE, average variance extracted.

Table 3 Discriminant Validity Of Constructs

	CB	ES	KIn	PCIn	PDIn	PM	SD	SOP
CB	0.798							
ES	0.331	0.796						
KIn	0.392	0.44	0.895					
PCIn	0.416	0.461	0.584	0.825				
PDIn	0.407	0.534	0.48	0.597	0.767			
PM	0.426	0.614	0.498	0.514	0.577	0.778		
SD	0.424	0.39	0.433	0.414	0.524	0.553	0.738	
SOP	0.449	0.517	0.568	0.579	0.596	0.637	0.462	0.84

Notes: Diagonal elements are the square root of AVE, whereas off-diagonal values are inter-construct correlations. The values appearing in bold indicate significance at 0.05 level.

Abbreviations: ES, employee staffing; SD, staff development; PM, performance management; CB, compensation and benefits; PDIn, product innovation; PCIn, process innovation; KIn, knowledge innovation; SOP, sustainable organizational performance.

Table 4 Path Model Results (direct Effect)

Hypothesis	Paths	Estimate	T-Values	P-Values
H1a-H1d	ES -> SOP	0.057	1.143	0.253
	SD -> SOP	0.000	0.008	0.994
	PM -> SOP	0.278	5.409	0.000
	CB -> SOP	0.098	2.416	0.016
H2a-H2c	ES -> PDIn	0.256	4.780	0.000
	ES -> PCIn	0.201	3.226	0.001
	ES -> KIn	0.183	2.941	0.003
H3a-H3c	SD -> PDIn	0.244	4.799	0.000
	SD -> PCIn	0.119	2.096	0.036
	SD -> KIn	0.169	2.736	0.006
H4a-H4c	PM -> PDIn	0.235	4.067	0.000
	PM -> PCIn	0.241	3.216	0.001
	PM -> KIn	0.222	2.828	0.005
H5a-H5c	CB -> PDIn	0.119	2.177	0.030
	CB -> PCIn	0.196	3.598	0.000
	CB -> KIn	0.165	2.837	0.005
H6a-H6c	PDIn -> SOP	0.179	3.163	0.002
	PCIn -> SOP	0.148	2.841	0.005
	KIn -> SOP	0.190	3.761	0.000
Control Variables	Experience -> SOP	-0.009	0.243	0.808
	Gender -> SOP	0.062	1.675	0.094

Abbreviations: ES, employee staffing; SD, staff development; PM, performance management; CB, compensation and benefits; PDIn, product innovation; PCIn, process innovation; KIn, knowledge innovation; SOP, sustainable organizational performance.

SD does not positively influence SOP ($\beta=0.057$, $p<0.253$; $\beta=0.000$, $p<0.994$), therefore H1c and H1d were accepted, and H1a and H1b were rejected. The direct effects of ES, SD, PM, and CB on PDIn were all shown to be positively

significant ($\beta=0.256$, $p<0.000$; $\beta=0.244$, $p<0.000$; $\beta=0.235$, $p<0.000$; $\beta=0.119$, $p<0.030$), thus H2a, H3a, H4a, and H5a were all accepted. Similarly, the direct effects of ES, SD, PM, and CB on PCIn were all shown to be positively significant ($\beta=0.201$, $p<0.001$; $\beta=0.119$, $p<0.036$; $\beta=0.241$, $p<0.001$; $\beta=0.196$, $p<0.000$), thus H2b, H3b, H4b, and H5b were all accepted. Moreover, the direct effects of ES, SD, PM, and CB on KIn were also shown to be positively significant ($\beta=0.183$, $p<0.003$; $\beta=0.169$, $p<0.06$; $\beta=0.222$, $p<0.005$; $\beta=0.165$, $p<0.005$), thus H2c, H3c, H4c, and H5c were all accepted. Furthermore, the direct effects of PDIn, PCIn, and KIn on SOP were also found to be significant ($\beta=0.179$, $p<0.002$; $\beta=0.148$, $p<0.005$; $\beta=0.190$, $p<0.000$), thus H6a, H6b, and H6c were accepted. Two control variables, namely experience and gender, were also tested. Of these, only gender showed a significant impact on SOP ($\beta=0.062$, $p<0.094$) (see Table 4).

Mediated Effects

In order to test the mediating effects of PDIn, PCIn, and KIn we first checked the indirect effects of ES, SD, PM, and CB on SOP, with the results shown in Table 5. Indirect effects were found for ES on SOP ($\beta= 0.110$, $p<0.000$), SD on SOP ($\beta= 0.093$, $p<0.000$), PM on SOP ($\beta= 0.120$, $p<0.000$), and CB on SOP ($\beta= 0.082$, $p<0.000$). Thus, PDIn, PCIn, and KIn mediate the relationship between ES, SD, PM, CB and the dependent variable (SOP). To identify the type of partial or full mediation, we observed the change in the effect size of ES, SD, and PM, CB on SOP through direct and indirect effects. In all cases, the total effects of ES, SD, PM, and CB on SOP ($\beta=0.057$, $p<0.253$; $\beta=0.000$, $p<0.994$; $\beta=0.278$, $p<0.000$; $\beta=0.098$, $p<0.016$) provided varied significance effects (Table 4). ES and SD were found to be not directly significant which translates to fully mediated effects of ES and SD on

Table 5 Indirect Effects

Relationship	Original Sample (O)	T-Values	P-Values	Upper	Lower
ES -> SOP	0.110	4.523	0.000	0.069	0.165
SD -> SOP	0.093	3.818	0.000	0.049	0.144
PM -> SOP	0.120	4.380	0.000	0.073	0.182
CB -> SOP	0.082	3.760	0.000	0.043	0.129

Abbreviations: ES, employee staffing; SD, staff development; PM, performance management; CB, compensation and benefits; SOP, sustainable organizational performance.

SOP through PDIn, PCIn, and KIn. However, the direct effects of PM and CB were found to be significant through both direct and indirect effects, which translates to partially mediated effects of the said constructs on SOP through PDIn, PCIn, and KIn. Hence, Hypothesis 7 was accepted. Figure 3 demonstrates the theoretical constructs with R² values.

Discussion

With its analyses of the interactions between HRM and innovation in affecting SOP, this research effort has ascertained

meaningful results based on a synthesized model framework. Prior to this study, most similar work has focused on cases in developed countries;^{14,16,17,20} only a limited amount of findings have been presented on emerging countries like China.^{13,15} Additionally, the limited studies that have been made in emerging countries reveal a scarcity of attention to the banking sector, belying its significant role in the socio-economic development of a country. To the best of the author's knowledge, this study is among the first to investigate the impact of HRM practices on SOP in the Chinese

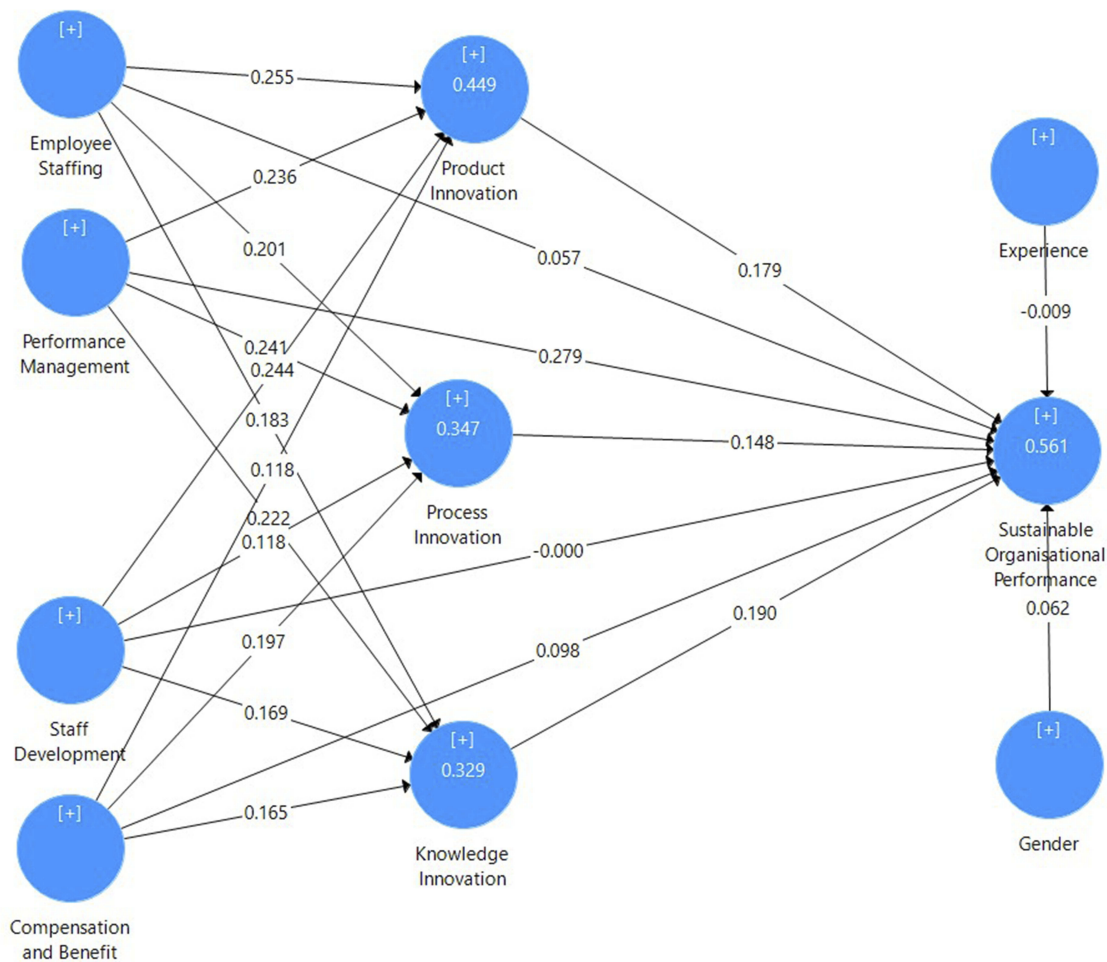


Figure 3 Theoretical constructs with R² values.

organizational context, particularly in considering OI as a mediating construct.

We first focused on the direct relationship between HRM practices and SOP, with the results showing that two HRM practices (performance management and compensation and benefits) significantly influence SOP, partially supporting our intuitions in hypotheses H1a–H1d. Prior studies have shown that HRM practices, including performance management and compensation and benefits, have a positive and significant relationship with SOP.^{69,107,108} In the Chinese context, (Law, Tse, and Zhou (2003)) conducted a large-scale survey of HR managers in China and found that HRM practices have a significant relationship with sustainable firm performance. However, in this study, the relationships of employee staffing and staff development to SOP are insignificant. A plausible reason for this result could be the ideology persisting among older employees in the Chinese banking sector, who often prefer to maintain traditional workplace practices and are reluctant to embrace modern work practices. These employees may also be unaware of, or uncomfortable with, technological devices and their use in today's organizations; an ambivalence toward such technologies might deter participation in technology-based staff development programs.

Second, this study found positive and direct effects of OI on SOP. Terziovski¹⁰⁹ showed in his study that OI has a positive and significant direct relationship with SOP. Moreover, Jimenez-Jimenez and Sanz-Valle⁸⁴ drew on a sample of 173 Spanish firms in finding that product and process innovations lead to SOP. They concluded that product and process innovation are resource building mechanisms in modern organizations and must be carefully treated in uplifting organizational performance. Additionally, in our study, the impact of knowledge innovation was ascertained. Based on the concept of knowledge-based economies, with the insights provided by the KBV, the findings of our study verify the impact of knowledge innovation on SOP. This points to the value of firms working to create by-products of their knowledge capabilities for the benefit of long-term organizational stability, competitive advantage, employee satisfaction, research and development, and other organizational goals.

Third, the mediated effect also shows significant results, which constitutes an original contribution in the context of an emerging or developing country like China. OI mediates in the relationship between HRM practices and SOP. The results showing the mediating role of OI

support the findings of past literature. Chowhan (2016)⁵ argued that new and improved product and process innovation management strengthens the desire for innovativeness in an organization. Similarly, Zehir, Üzmez, and Yıldız (2016) indicate that OI is a significant element for gaining SOP.¹¹⁰ The specific conceptualization of innovation used in this study maintains a distinction between new and old organizational or administrative practices in emerging countries; as a result, the multidimensionality of innovation is not neglected. In this light, knowledge-based innovation was also found to have an intervening effect on the relationship between HRM practices and SOP. The RBV suggests that knowledge innovation (inclusive of employee knowledge, skills, and abilities) mediates as a key resource for product and services development, which brings about sustainable competitive advantage.¹¹¹ Lopez-Cabrales, Pérez-Luño, and Cabrera (2009)¹¹² examined 86 Spanish organizations and their findings indicated that HRM practices were not directly connected with sustainable outcomes for the organization unless they took knowledge-based innovation as a mediator.¹¹³

Conclusions, Implications And Future Research Directions

Conclusions

The research model of this study was developed by drawing on insights provided by the previous literature and the RBV and KBV theoretical approaches. Our results support the link between HRM practices, OI, and SOP in emerging nations. The outcomes of this study indicate that two HRM practices (performance management and compensation and benefits) have a direct, positive, and significant influence on SOP. Two other HRM practices (employee staffing and staff development) are not significant influences on SOP when measured as a direct relationship. Moreover, our results indicate that all HRM practices (employee staffing, performance management, staff development, and compensation and benefits) have an indirect, positive, and significant influence on OI (product, process, and knowledge innovation). The outcomes of this study also testify that OI (product, process, knowledge innovation) positively influences SOP, and that OI (product, process, and knowledge) mediates in the relationship between HRM practices and SOP.

Our findings could be interpreted as follows. 1) In the banking sector, some employees prefer to hold on to traditional styles of working, whereas others try to

encapsulate the new innovative working mechanisms and engages with staff development programs. Those employees who keep working with the traditional working ethos may not make the contribution to SOP that is made by those who are more open to change and likely to engage with staff development. 2) Implementing improved HRM practices is associated with the likelihood of bringing more innovation to organizational dynamics, in the forms of process innovation, product innovation, and knowledge innovation. However, the magnitude of the impact of HRM practices on innovation varies. Some practices create more product innovation while some serve to enhance the process and knowledge innovation but, as a collateral benefit, all HRM practices contribute to the desire for innovativeness in various spheres of the firm among management personnel. 3) Innovation is an essential resource to any organization in achieving measures of long-term performance such as SOP.

Implications

Since the aptness of HRM practices and an OI approach are significant factors of SOP, the market conditions in which Chinese organizations operate should be considered. China has made major efforts to promote innovation, which is an important factor in SOP in a knowledge-based economy. These efforts are favorable to the development of the Chinese economy and can also be effective in other developing countries. For example, the Chinese government has developed National Innovation Systems (NIS) and enhanced the research and development (R&D) mechanisms for the banking sector.³ In an environment encouraging innovation, Chinese organizations are required to enhance and maintain their competitiveness by effectively fitting their HRM practices to OI needs. Therefore, the role of HRM should shift from traditional HRM practices into modern HRM practices.

The results of this study have numerous implications for practitioners. HR managers are encouraged to recruit knowledge-based employees to enhance knowledge-based innovation. Many organizations have opted to adopt new HRM practices (in, for example, employee staffing) in their various competitive business domains. HR managers may be encouraged to switch their HR practices from traditional performance evaluation practices to new performance evaluation practices (e.g., HR performance matrices and 360-degree performance evaluation). Effective performance management would construct a roadmap of employee motivations that will

maximize their effort towards achieving sustainable organizational goals. Moreover, at the time of the performance appraisal process, providing opportunities for feedback to employees will improve the gaps between actual performance and desired organizational goals. This study also finds that staff development had a positive effect on organizational innovation. Hence, employees ought to have access to extensive training opportunities, continuously or periodically, based on the requirement to meet global challenges. The knowledge, skills, and abilities acquired via staff development will enhance the product, process, and knowledge-based innovation, which in turn will help to improve SOP. Correspondingly, organizational managers should place more emphasis on the development of direct and indirect compensation methods for employees, because these act as motivating agents among employees and bring about improved performance.

Our results show that OI intervenes in the relationship between HRM practices and SOP. This result highlights the significance of OI. Thus, HR managers ought to manage their organization's employees through a variety of HRM practices to encourage their competencies in handling OI and its applications. Additionally, a higher level of OI can rouse innovative thoughts and knowledge that may eventually lead to an increase in SOP. As previous research has noted, to facilitate the link between HRM practices and favorable SOP, HR managers first need to identify the importance of OI. Then they should apply HRM practices to promote a sound level of OI, which in turn will result in favorable and sustainable outcomes.³⁴

Limitations And Future Research

The findings of this study are limited by its focus on the banking industry of China. Further research could be done in other sectors, such as manufacturing and IT, to generalize the results or indicate a need to modify the concepts. A further limitation of our study is the low response rate of the survey respondents, a future study with a higher response rate may provide more reliable insights. Last, a future study could seek to enlarge the present framework by merging RBV and KBV with other performance-based theories. RBV and KBV both point out that, alongside human resources, many other factors, such as IT capabilities, organizational culture, and work-place environment, also play a key role in SOP. Therefore, future research may explore the relationship between these factors and SOP. In

this study, the authors have considered OI as a mediating variable. Other mediating constructs, such as motivating agents, learning capabilities, or technological innovation could also be usefully explored. We believe that future studies which address these issues would provide further insights to gain a better understanding of human resource management practices and their effects on sustainable organizational performance.

Ethics Statement

The research ethics committee of Guangzhou University and Shanghai University approved this study, and it was survey-based research. The research participants (senior managers, middle managers and administrative staff) of the Chinese banking sector gave consent over the telephone for conducting the questionnaire survey. Participants were identified through their supervisors, and they filled in the questionnaires willingly.

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Author Contributions

All authors have equally contributed to drafting the manuscript, data collection, analysis, and interpretation of data, reading, and approving the final manuscript. Moreover, all authors are confirming that the agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Disclosure

The authors declare that they have no conflicts of interest in this work.

References

1. Laursen K, Foss NJ. New human resource management practices, complementarities and the impact on innovation performance. *Cambridge J Econ.* 2003;27(2):243–263. doi:10.1093/cje/27.2.243
2. Rasool SF, Maqbool R, Samma M, Zhao Y, Anjum A. Positioning Depression as a Critical Factor in Creating a Toxic Workplace Environment for Diminishing Worker Productivity. *Sustainability.* 2019;11(9):2589.
3. April Chang WJ, Chun Huang T. Relationship between strategic human resource management and firm performance: a contingency perspective. *Int J Manpow.* 2005;26(5):434–449. doi:10.1108/01437720510615125
4. Ayub U, Kausar AR, Qadri MM. Linking human capital and organisational innovative capabilities of financial institutions: evidence from a developing country of South Asia. *J Inf Knowl Manage.* 2017;16(4):1750042. doi:10.1142/S0219649217500423
5. Chowhan J. Unpacking the black box: understanding the relationship between strategy, HRM practices, innovation and organizational performance. *Hum Resour Manage J.* 2016;26(2):112–133. doi:10.1111/hrmj.v26.2
6. Fu N, Flood PC, Bosak J, Morris T, O'Regan P. How do high performance work systems influence organizational innovation in professional service firms?. *Employee Relat.* 2015;37(2):209–231. doi:10.1108/ER-10-2013-0155
7. Baregheh A, Rowley J, Sambrook S. Towards a multidisciplinary definition of innovation. *Manage Decis.* 2009;47(8):1323–1339. doi:10.1108/00251740910984578
8. Chang S, Gong Y, Shum C. Promoting innovation in hospitality companies through human resource management practices. *Int J Hospitality Manage.* 2011;30(4):812–818. doi:10.1016/j.ijhm.2011.01.001
9. Alfes K, Truss C, Soane EC, Rees C, Gatenby M. The relationship between line manager behavior, perceived HRM practices, and individual performance: examining the mediating role of engagement. *Hum Resour Manage.* 2013;52(6):839–859. doi:10.1002/hrm.v52.6
10. Jiménez-Jiménez D, Sanz-Valle R. Innovation, organizational learning, and performance. *J Bus Res.* 2001;64(4):408–417. doi:10.1016/j.jbusres.2010.09.010
11. Ahmad S, Schroeder RG. The impact of human resource management practices on operational performance: recognizing country and industry differences. *J Oper Manage.* 2003;21(1):19–43. doi:10.1016/S0272-6963(02)00056-6
12. Bae J, Lawler JJ. Organizational and HRM strategies in Korea: impact on firm performance in an emerging economy. *Acad Manag J.* 2000;43(3):502–517.
13. Chand M, Katou AA. The impact of HRM practices on organisational performance in the Indian hotel industry. *Employee Relat.* 2007;29(6):576–594. doi:10.1108/01425450710826096
14. Delaney JT, Huselid MA. The impact of human resource management practices on perceptions of organizational performance. *Acad Manag J.* 1996;39(4):949–969.
15. Fey CF, Björkman I. The effect of human resource management practices on MNC subsidiary performance in Russia. *J Int Bus Stud.* 2001;32(1):59–75. doi:10.1057/palgrave.jibs.8490938
16. Guthrie JP. High-involvement work practices, turnover, and productivity: evidence from New Zealand. *Acad Manag J.* 2001;44(1):180–190.
17. Morishima M. Changes in Japanese human resource management: implications for firm performance. Proceedings of the Annual Meeting of the Industrial Relations Research Association. Madison, WI 1998;1:198–207.
18. Ngo H-Y, Turban D, Lau C-M, Lui S-Y. Human resource practices and firm performance of multinational corporations: influences of country origin. *Int J Hum Resour Manage.* 1998;9(4):632–652. doi:10.1080/095851998340937

19. Vlachos I. The effect of human resource practices on organizational performance: evidence from Greece. *Int J Hum Resour Manage.* 2008;19(1):74–97. doi:10.1080/09585190701763933
20. Wan D, Ong CH, Kok V. Strategic human resource management and organizational performance in Singapore. *Comp Benefits Rev.* 2002;34(4):33–42. doi:10.1177/0886368702034004006
21. Lin L-H. Electronic human resource management and organizational innovation: the roles of information technology and virtual organizational structure. *Int J Hum Resour Manage.* 2011;22(2):235–257. doi:10.1080/09585192.2011.540149
22. Seeck H, Diehl M-R. A literature review on HRM and innovation-taking stock and future directions. *Int J Hum Resour Manage.* 2017;28(6):913–944. doi:10.1080/09585192.2016.1143862
23. Wang T. *A General Treatise Of Human Capital.* Tianjin: Tianjin Renmin Press; 1985.
24. Zhao L. *Labor Employment And The Building Of Labor Market.* Nanjing: Jiangsu Renmin Press; 1998.
25. Ngo HY, Lau CM, Foley S. Strategic human resource management, firm performance, and employee relations climate in China. *Hum Resour Manage.* 2008;47(1):73–90. doi:10.1002/hrm.20198
26. Zheng C, Lamond D. A critical review of human resource management studies (1978–2007) in the People's Republic of China. *Int J Hum Resour Manage.* 2009;20(11):2194–2227. doi:10.1080/09585190903239609
27. Chang M, Jang H-B, Li Y-M, Kim D. The relationship between the efficiency, service quality and customer satisfaction for state-owned commercial banks in China. *Sustainability.* 2017;9(12):2163. doi:10.3390/su9122163
28. Zhao S, Du J. Thirty-two years of development of human resource management in China: review and prospects. *Hum Resour Manage Rev.* 2012;22(3):179–188. doi:10.1016/j.hrmr.2012.02.001
29. Armstrong M, Taylor S. *Armstrong's Handbook of Human Resource Management Practice.* Kogan Page Publishers; 2014.
30. Teece DJ. Explicating dynamic capabilities: the nature and micro-foundations of (sustainable) enterprise performance. *Strategic Manage J.* 2007;28(13):1319–1350. doi:10.1002/(ISSN)1097-0266
31. Bombiak E, Marciniuk-Kluska A. Green human resource management as a tool for the sustainable development of enterprises: polish young company experience. *Sustainability.* 2018;10(6):1739. doi:10.3390/su10061739
32. Den Hartog DN, Boselie P, Paauwe J. Performance management: a model and research agenda. *Appl Psychol.* 2004;53(4):556–569. doi:10.1111/apps.2004.53.issue-4
33. Adam M. The role of human resource management (HRM) for the implementation of sustainable product-service systems (PSS)—an analysis of fashion retailers. *Sustainability.* 2018;10(7):2518. doi:10.3390/su10072518
34. Chen C-J, Huang J-W. Strategic human resource practices and innovation performance—the mediating role of knowledge management capacity. *J Bus Res.* 2009;62(1):104–114. doi:10.1016/j.jbusres.2007.11.016
35. Boxall P, Purcell J. *Strategy and Human Resource Management.* Macmillan International Higher Education; 2011.
36. Bratton J, Gold J. *Human Resource Management: Theory and Practice.* Palgrave; 2017.
37. Jiang K, Lepak DP, Hu J, Baer JC. How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Acad Manage J.* 2012;55(6):1264–1294. doi:10.5465/amj.2011.0088
38. Özbağ GK, Esen M, Esen D. The impact of HRM capabilities on innovation mediated by knowledge management capability. *Procedia Soc Behav Sci.* 2013;99:784–793. doi:10.1016/j.sbspro.2013.10.550
39. Damanpour F, Gopalakrishnan S. The dynamics of the adoption of product and process innovations in organizations. *J Manage Stud.* 2001;38(1):45–65. doi:10.1111/1467-6486.00227
40. Hsu Y. Organizational innovation, design and NPD performance: the role of co-creation strategy. *Int J Innovation Manage.* 2017;21(04):1750033. doi:10.1142/S1363919617500335
41. Spender J, Kessler EH. Managing the uncertainties of innovation: extending Thompson (1967). *Hum Relat.* 1995;48(1):35–56. doi:10.1177/001872679504800103
42. Ling TC, Nasurdin AM. Human resource management practices and organizational innovation: an empirical study in Malaysia. *J Appl Bus Res.* 2010;26(4):105. doi:10.19030/jabr.v26i4.311
43. Fındıklı MA, Yozgat U, Rofcanin Y. Examining organizational innovation and knowledge management capacity: the central role of strategic human resources practices (SHRPs). *Procedia Soc Behav Sci.* 2015;181:377–387. doi:10.1016/j.sbspro.2015.04.900
44. Azar G, Ciabuschi F. Organizational innovation, technological innovation, and export performance: the effects of innovation radicalness and extensiveness. *Int Bus Rev.* 2016;16(2):324–336.
45. Bruton GD, White MA. *Strategic Management of Technology and Innovation.* South-Western Cengage Learning; 2011.
46. Tajeddini K. Financial orientation, product innovation and firm performance—an empirical study in the Japanese SMEs. *Int J Innovation Technol Manage.* 2016;13(03):1640005. doi:10.1142/S0219877016400058
47. García-Sánchez E, García-Morales VJ, Martín-Rojas R. Influence of technological assets on organizational performance through absorptive capacity, organizational innovation and internal labour flexibility. *Sustainability.* 2018;10(3):770. doi:10.3390/su10030770
48. Buys L, Mengersen K, Johnson S, van Buuren N, Chauvin A. Creating a Sustainability Scorecard as a predictive tool for measuring the complex social, economic and environmental impacts of industries, a case study: assessing the viability and sustainability of the dairy industry. *J Environ Manage.* 2014;133:184–192. doi:10.1016/j.jenvman.2013.12.013
49. Longoni A, Golini R, Cagliano R. The role of new forms of work organization in developing sustainability strategies in operations. *Int J Prod Econ.* 2014;147:147–160. doi:10.1016/j.jppe.2013.09.009
50. Lopes CM, Scavarda A, Hofmeister LF, Thomé AMT, Vaccaro GLR. An analysis of the interplay between organizational sustainability, knowledge management, and open innovation. *J Clean Prod.* 2017;142:476–488. doi:10.1016/j.jclepro.2016.10.083
51. Tseng S-M, Lee P-S. The effect of knowledge management capability and dynamic capability on organizational performance. *J Enterp Inf Manage.* 2014;27(2):158–179. doi:10.1108/JEIM-05-2012-0025
52. Alaarj S, Abidin-Mohamed Z, Bustamam USBA. Mediating role of trust on the effects of knowledge management capabilities on organizational performance. *Procedia Soc Behav Sci.* 2016;235:729–738. doi:10.1016/j.sbspro.2016.11.074
53. Sambasivan M, Siew-Phaik L, Abidin Mohamed Z, Choy Leong Y. Impact of interdependence between supply chain partners on strategic alliance outcomes: role of relational capital as a mediating construct. *Manage Decis.* 2011;49(4):548–569. doi:10.1108/00251741111126486
54. Enticott G, Walker RM. Sustainability, performance and organizational strategy: an empirical analysis of public organizations. *Bus Strategy Environ.* 2008;17(2):79–92. doi:10.1002/(ISSN)1099-0836
55. Carmeli A, Gilat G, Waldman DA. The role of perceived organizational performance in organizational identification, adjustment and job performance. *J Manage Stud.* 2007;44(6):972–992. doi:10.1111/joms.2007.44.issue-6
56. Zheng W, Yang B, McLean GN. Linking organizational culture, structure, strategy, and organizational effectiveness: mediating role of knowledge management. *J Bus Res.* 2010;63(7):763–771. doi:10.1016/j.jbusres.2009.06.005
57. Fay D, Shipton H, West MA, Patterson M. Teamwork and organizational innovation: the moderating role of the HRM context. *Creativity Innovation Manag.* 2015;24(2):261–277. doi:10.1111/caim.2015.24.issue-2

58. Rasool S, Koser M. Two folded layers of organizational justice. *Int J Res.* 2016;3(14):368–381.
59. Maruyama UGR, Braga MAB. Human resources strategic practices, innovation performance & knowledge management: proposal for Brazilian organizations. *Independent J Manage Prod.* 2014;5(3):710–732. doi:10.14807/ijmp.v5i3.188
60. Akram M, Goraya M, Malik A, Aljarallah A. Organizational performance and sustainability: exploring the roles of IT capabilities and knowledge management capabilities. *Sustainability.* 2018;10(10):3816. doi:10.3390/su10103816
61. Koser M, Rasool SF, Samma M. High performance work system is the accelerator of the best fit and integrated HR-practices to achieve the goal of productivity: a case of textile sector in Pakistan. *Global Manage J Acad Corporate Stud.* 2018;8(1):10–21.
62. Gutierrez-Gutierrez LJ, Barrales-Molina V, Kaynak H. The role of human resource-related quality management practices in new product development: a dynamic capability perspective. *Int J Oper Prod Manage.* 2018;38(1):43–66. doi:10.1108/IJOPM-07-2016-0387
63. Katou AA, Budhwar PS. Causal relationship between HRM policies and organisational performance: evidence from the Greek manufacturing sector. *Eur Manage J.* 2010;28(1):25–39. doi:10.1016/j.emj.2009.06.001
64. Ali M, Lei S, Wei X-Y. Mediating role of employee relations climate between strategic-HRM and organizational performance: an empirical study of Chinese banking sector. *J Innovation Knowl.* 2017.
65. Wang Z, Chen J, Stjernholm Madsen A, Ulhøi JP. Technology innovation, human resources and dysfunctional integration. *Int J Manpow.* 2005;26(6):488–501. doi:10.1108/01437720510625412
66. Katou AA. Measuring the impact of HRM on organizational performance. *J Ind Eng Manage.* 2018;1(2):119–142.
67. Guan J, Ma N. Innovative capability and export performance of Chinese firms. *Technovation.* 2003;23(9):737–747. doi:10.1016/S0166-4972(02)00013-5
68. Collins CJ, Smith KG. Knowledge exchange and combination: the role of human resource practices in the performance of high-technology firms. *Acad Manage J.* 2006;49(3):544–560. doi:10.5465/amj.2006.21794671
69. Subramony M. A meta-analytic investigation of the relationship between HRM bundles and firm performance. *Hum Resour Manage.* 2009;48(5):745–768. doi:10.1002/hrm.v48:5
70. Guthrie JP, Flood PC, Liu W, MacCurtain S. High performance work systems in Ireland: human resource and organizational outcomes. *Int J Hum Resour Manage.* 2009;20(1):112–125. doi:10.1080/09585190802528433
71. Li Y, Zhao Y, Liu Y. The relationship between HRM, technology innovation and performance in China. *Int J Manpow.* 2006;27(7):679–697. doi:10.1108/01437720610708284
72. Anjum A, Ming X, Siddiqi AF, Rasool SF. An empirical study analyzing job productivity in toxic workplace environments. *Int J Environ Res Public Health.* 2018;15(5):1035. doi:10.3390/ijerph15061188
73. Geringer JM, Frayne CA, Milliman JF. In search of “best practices” in international human resource management: research design and methodology. *Hum Resour Manage.* 2002;41(1):5–30. doi:10.1002/hrm.10017
74. Delery JE, Doty DH. Modes of theorizing in strategic human resource management: tests of universalistic, contingency, and configurational performance predictions. *Acad Manage J.* 1996;39(4):802–835.
75. Marvel MR, Lumpkin GT. Technology entrepreneurs’ human capital and its effects on innovation radicalness. *Entrep Theory Pract.* 2007;31(6):807–828. doi:10.1111/etap.2007.31.issue-6
76. Wichitchanya W, Durongwatana S. Human resource management and organizational innovation. *Bus Rev.* 2012;20(1):221–227.
77. Subramaniam M, Youndt MA. The influence of intellectual capital on the types of innovative capabilities. *Acad Manage J.* 2005;48(3):450–463. doi:10.5465/amj.2005.17407911
78. Jiang J, Wang S, Zhao S. Does HRM facilitate employee creativity and organizational innovation? A study of Chinese firms. *Int J Hum Resour Manage.* 2012;23(19):4025–4047. doi:10.1080/09585192.2012.690567
79. Li H, Atuahene-Gima K. Product innovation strategy and the performance of new technology ventures in China. *Acad Manage J.* 2001;44(6):1123–1134.
80. Alegre J, Lapedra R, Chiva R. A measurement scale for product innovation performance. *Eur J Innovation Manage.* 2006;9(4):333–346. doi:10.1108/14601060610707812
81. Diaz-Fernandez M, Bornay-Barrachina M, Lopez-Cabrales A. HRM practices and innovation performance: a panel-data approach. *Int J Manpow.* 2017;38(3):354–372. doi:10.1108/IJM-02-2015-0028
82. Byron K, Khazanchi S, Nazarian D. The relationship between stressors and creativity: a meta-analysis examining competing theoretical models. *J Appl Psychol.* 2010;95(1):201. doi:10.1037/a0017868
83. Mumford MD. Managing creative people: strategies and tactics for innovation. *Hum Resour Manage Rev.* 2000;10(3):313–351. doi:10.1016/S1053-4822(99)00043-1
84. Jiménez-Jiménez D, Sanz-Valle R. Could HRM support organizational innovation? *Int J Hum Resour Manage.* 2008;19(7):1208–1221. doi:10.1080/09585190802109952
85. Diaz-Fernandez M, Bornay-Barrachina M, Lopez-Cabrales A. Innovation and firm performance: the role of human resource management practices. Paper presented at *The Evidence-based HRM: a Global Forum for Empirical Scholarship.* UK: 2015. doi:10.1108/EBHRM-10-2012-0012
86. Lepak DP, Liao H, Chung Y, Harden EE. A conceptual review of human resource management systems in strategic human resource management research. *Research in Personnel and Human Resources Management.* Emerald Group Publishing Limited; 2006:217–271 Available from: <https://www.emeraldgroupublishing.com/products/books/series.htm?id=0742-7301>.
87. Afcha Chávez SM. Innovaciones organizacionales y su efecto sobre el desempeño empresarial. *Revista Venezolana De Gerencia.* 2011;16:56.
88. Lopez-Valeiras E, Gomez-Conde J, Naranjo-Gil D. Sustainable innovation, management accounting and control systems, and international performance. *Sustainability.* 2015;7(3):3479–3492. doi:10.3390/su7033479
89. Lopez-Valeiras E, Gonzalez-Sanchez MB, Gomez-Conde J. The effects of the interactive use of management control systems on process and organizational innovation. *Rev Manage Sci.* 2016;10(3):487–510. doi:10.1007/s11846-015-0165-9
90. Naranjo-Valencia JC, Jiménez-Jiménez D, Sanz-Valle R. Studying the links between organizational culture, innovation, and performance in Spanish companies. *Rev Latinoam Psicol.* 2016;48(1):30–41. doi:10.1016/j.rlp.2015.09.009
91. Zhang MJ. Firm-level performance impact of IS support for product innovation. *Eur J Innovation Manage.* 2011;14(1):118–132. doi:10.1108/14601061111104724
92. Das P, Verburg R, Verbraeck A, Bonebakker L. Barriers to innovation within large financial services firms: an in-depth study into disruptive and radical innovation projects at a bank. *Eur J Innovation Manage.* 2018;21(1):96–112. doi:10.1108/EJIM-03-2017-0028
93. Zhao J, Ordóñez de Pablos P. School innovative management model and strategies: the perspective of organizational learning. *Inf Syst Manage.* 2009;26(3):241–251. doi:10.1080/10580530903017781
94. Volberda HW, Van Den Bosch FA, Heij CV. Management innovation: management as fertile ground for innovation. *Eur Manage Rev.* 2013;10(1):1–15. doi:10.1111/emre.12007
95. Krašnicka T, Glód W, Wronka-Pošpiech M. Management innovation, pro-innovation organisational culture and enterprise performance: testing the mediation effect. *Rev Manage Sci.* 2017;12(3):737–769. doi:10.1007/s11846-017-0229-0

96. Damanpour F, Evan WM. Organizational innovation and performance: the problem of “organizational lag”. *Adm Sci Q.* 1984;29(3):392–409. doi:10.2307/2393031
97. Han JK, Kim N, Srivastava RK. Market orientation and organizational performance: is innovation a missing link? *J Mark.* 1998;62(4):30–45. doi:10.1177/002224299806200403
98. Lu K, Zhu J, Bao H. High-performance human resource management and firm performance: the mediating role of innovation in China. *Ind Manage Data Syst.* 2015;115(2):353–382. doi:10.1108/IMDS-10-2014-0317
99. Prifti R, Alimehmeti G. Market orientation, innovation, and firm performance—an analysis of Albanian firms. *J Innovation Entrepreneurship.* 2017;6(1):8. doi:10.1186/s13731-017-0069-9
100. Molleman E, Timmerman H. Performance management when innovation and learning become critical performance indicators. *Personnel Rev.* 2003;32(1):93–113. doi:10.1108/00483480310454745
101. Ali Z, Sun H, Ali M. The impact of managerial and adaptive capabilities to stimulate organizational innovation in SMEs: a complementary PLE–SEM approach. *Sustainability.* 2017;9(12):2157. doi:10.3390/su9122157
102. Hair JF Jr, Hult GTM, Ringle C, Sarstedt M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* Sage Publications; 2016.
103. Bhattacharjee A, Perols J, Sanford C. Information technology continuance: a theoretic extension and empirical test. *J Comput Inf Syst.* 2008;49(1):17–26. doi:10.1080/08874417.2008.11645302
104. Anderson JC, Gerbing DW. Structural equation modeling in practice: a review and recommended two-step approach. *Psychol Bull.* 1988;103(3):411. doi:10.1037/0033-2909.103.3.411
105. Nunnally J, Bernstein I. *Psychometric Theory.* New York: McGraw-Hill; 1978.
106. Fornell C, Larcker DF. Evaluating structural equation models with unobservable variables and measurement error. *J Mark Res.* 1981;18(1):39–50. doi:10.1177/002224378101800104
107. Barrick MR, Thurgood GR, Smith TA, Courtright SH. Collective organizational engagement: linking motivational antecedents, strategic implementation, and firm performance. *Acad Managet J.* 2015;58(1):111–135. doi:10.5465/amj.2013.0227
108. Guest DE. Human resource management and performance: still searching for some answers. *Hum Resour Manage J.* 2011;21(1):3–13. doi:10.1111/j.1748-8583.2010.00164.x
109. Terziovski M. Innovation practice and its performance implications in small and medium enterprises (SMEs) in the manufacturing sector: a resource-based view. *Strategic Manage J.* 2010;31(8):892–902.
110. Zehir C, Üzmez A, Yıldız H. The effect of SHRM practices on innovation performance: the mediating role of global capabilities. *Procedia Soc Behav Sci.* 2016;235:797–806. doi:10.1016/j.sbspro.2016.11.088
111. Camelo-Ordaz C, Garcia-Cruz J, Sousa-Ginel E, Valle-Cabrera R. The influence of human resource management on knowledge sharing and innovation in Spain: the mediating role of affective commitment. *Int J Hum Resour Manage.* 2011;22(7):1442–1463. doi:10.1080/09585192.2011.561960
112. Lopez-Cabrales A, Pérez-Luño A, Cabrera RV. Knowledge as a mediator between HRM practices and innovative activity. *Hum Resour Manage.* 2009;48(4):485–503. doi:10.1002/hrm.v48:4
113. Laursen K, Foss NJ. Human resource management practices and innovation. In: *Oxford Handbook of Innovation Management.* Oxford University Press; 2014:505–530. doi:10.1093/oxfordhb/9780199694945.013.009

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