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Role of Flexibility-oriented HRM System in Promoting Human Resource Flexibility for Firm Innovation

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Abstract

Although the role of human resource management (HRM) systems in achieving superior firm innovation has gained prominence, the research on the mediating mechanisms has remained understudied. The present study examines the role of a flexibility-oriented HRM system in promoting human resource flexibility to achieve superior innovation. The hypothesized assumptions were tested using data gathered from 135 Pakistani businesses. Partial least squares structural equation modeling was applied to confirm the hypotheses. Findings suggest that a flexibility-oriented HRM system is essential in enhancing firm innovation performance. Furthermore, our study shows that flexibility-oriented HRM practices promote human resource flexibility, resulting in superior firm innovation. The influence of a flexibility-oriented HRM system on company innovation is transferred through human resource flexibility as an underlying mechanism. Our research advances both the theoretical and practical fields by demonstrating to HR professionals and upper management that creating and executing a flexible HRM system may help businesses outperform their competitors in terms of innovation.

Keywords: Flexibility-oriented HRM, Human resource, Flexibility, Firm innovation

1 Introduction

In a turbulent environment, innovation has emerged as a prominent source of competitive advantage (Alghamdi & Agag, 2024). When a company can launch new products and services into the market faster than its rivals, it is said to be innovative (Damanpour, 1991; Jiménez & Sanz, 2008). Scholars argue that firms can achieve superior innovation through systems and human resources flexibility, enabling them to respond quickly to rapidly changing customer demands (Zhang et al., 2023; Lakshman et al., 2022; Wright & Snell, 1998). In light of this,

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researchers in the field of strategic human resource management (HRM) have set up a system of HRM that is flexibility-oriented in order to facilitate the acquisition and development of flexible human resources by businesses, as well as to encourage them to promptly seek novel concepts and solutions (Shahzad et al., 2022; Chang et al., 2013).

Additionally, scholars have examined the role of flexibility-oriented HRM systems in promoting innovation (Chang et al., 2013; Lakshman et al., 2022; Lenart et al., 2023). On the other hand, researchers have also emphasized the importance of human resource flexibility in achieving superior innovation performance (Martínez et al., 2020; Do et al., 2016; Ketkar & Sett, 2009). Researchers have claimed that human resources' capacities, motivations, and opportunities to contribute significantly impact innovation performance (Appelbaum et al., 2000; Marin et al., 2016). They have done this by using the Ability-Motivation-Opportunity (AMO) framework. (Shahzad et al., 2019). It is further argued that firms can acquire and develop human resources through recruitment training and development practices and motivate them to pursue innovation through reward systems (Shahzad et al., 2019; Appelbaum et al., 2000; Jiang et al., 2012). Therefore, based on the AMO framework, a flexibility-oriented HRM is proposed to promote human resource flexibility for innovation performance. For instance, flexibility-oriented ability-enhancing practices (i.e., recruitment and selection) help firms acquire human resources with functional and skills flexibility. Further, training and development initiatives to promote functional and skills flexibility contribute to human resource flexibility (Chang et al., 2013). Similarly, motivation-enhancing and opportunity-to-contribute practices, such as reward systems, promote behavioral flexibility among employees, contributing to overall human resource flexibility in firms (Chang et al., 2013). In response, human resources with functional, skills, and behavioral flexibility (human resource flexibility) enable firms to achieve superior innovation performance (Beltrán et al., 2008).

Our study contributes to the emerging literature on flexibility by explaining the effect of a flexibility-oriented HRM system in promoting human resource flexibility to achieve superior innovation performance. Firstly, it adds to the future directions of recent systematic literature on strategically aligned human resource management systems to drive innovation (Lenart et al., 2023). Secondly, our study contributes to the recent systematic review of the AMO framework by incorporating the flexibility aspect into the AMO framework (Bos Nehles et al., 2023). Thirdly, the findings provide evidence to policymakers and top management that firms may achieve superior innovation by designing and implementing a flexibility-oriented HRM system to promote human resource flexibility in turbulent environments like Pakistan.

2 Theory and Hypotheses Development

A well-known theoretical paradigm for comprehending the relationship between HRM and innovation is the Ability-Motivation-Opportunity (AMO) framework (Appelbaum et al., 2000; Marin et al., 2016). (Shahzad et al., 2019; Do et al., 2016; Bos-Nehles et al., 2023). The AMO framework explains that a firm's performance relies on the abilities, motivation, and opportunity to contribute to its human resources (Appelbaum et al., 2000; Jiang et al., 2012). Furthermore, Jiang et al. (2012) explained that an HRM system comprising ability-enhancing, motivation-enhancing, and opportunity-enhancing practices works synergistically to improve employees' abilities and motivate them to pursue opportunities to achieve organizational goals. Accordingly, Shahzad et al. (2019) established that HRM systems enhance abilities, motivation, and employee voice behavior, contributing to innovation performance.

By employing the AMO framework, we contend that ability-enhancing, flexibility-oriented practices, such as the recruitment and selection process, aim to hire human resources with flexible abilities. Training and development programs also enhance employees' skills in their functional areas, enabling them to introduce innovative solutions for new products and services (Beltrán-

Martín et al., 2008). Similarly, opportunity-enhancing, flexibility-oriented practices, such as job rotations and platforms for sharing ideas and suggestions, contribute to fostering an innovation environment (Chang et al., 2013). Furthermore, motivation-enhancing, flexibility-oriented practices, like performance assessments and rewards, motivate employees to utilize their abilities in performing assigned tasks and encourage behavioral flexibility to pursue opportunities for organizational success. Therefore, we propose a theoretical model based on the AMO framework, as illustrated in Figure 1.

2.1 Flexibility-oriented HRM System and Firm Innovation

We contend that a flexibility-oriented HRM system fosters company innovation by employing the AMO framework. First, the flexibility-oriented HRM system's ability-enhancing practices, like the hiring process that selects workers based on their range of skills and experience, allow them to use for different tasks, improving the company's capacity to proactively respond to clients' rapidly changing needs (Chang et al., 2013). Moreover, efforts aimed at training and development—like offering different core knowledge training classes to staff members so they may learn new abilities to handle diverse jobs—help to enhance innovation performance (Lakshman et al., 2022).

Second, flexible-oriented activities that improve motivation—such as the performance evaluation procedure for efficient and prompt coordination among employees with core knowledge—improve an inventive culture that supports innovation performance (Botelho, 2020; Do et al., 2016). Third, employee sharing of creative ideas and suggestions to enhance existing products and services and launch new ones in response to shifting consumer demands is encouraged by opportunity-enhancing, flexibility-oriented practices (Shahzad et al., 2019; Rasheed et al., 2017; Zhang et al., 2023). Furthermore, empirical data indicates that HRM systems with a focus on flexibility foster intellectual capital, assimilation ability, and an adaptability culture that fosters business innovation (Chang et al., 2013; Lakshmana et al., 2022; Do et al., 2016). Therefore, we suggest that

H1. Flexibility-oriented HRM system has a positive effect on the firm innovation.

2.2 Flexibility-oriented HRM System, Human Resource Flexibility, and Firm Innovation

Using the AMO framework, we argue that a flexibility-oriented HRM system promotes human resource flexibility (functional, skills, and behavioral flexibility), thereby enhancing firm innovation. Firstly, ability-enhancing flexibility-oriented practices, such as a comprehensive recruitment and selection process to ensure the hiring of employees with core knowledge for undertaking different roles (Chang et al., 2013; De et al., 2014). Similarly, training and development initiatives aimed at improving functional flexibility and overall skills flexibility enable firms to enhance the core knowledge of employees related to their current responsibilities and develop them for new roles (Chang et al., 2013; De et al., 2014). This equips human resources to quickly respond to the changing needs of customers by sharing and implementing innovative ideas and solutions. In response, employees' functional and skills flexibility evolves through continuous interactions with customers, as they learn and apply new skills to enhance products and services (Donate et al., 2016). This skills flexibility boosts employee engagement, motivating them to invest substantial effort in creating cutting-edge goods and services (Bal & De Lange, 2015). Secondly, motivation and opportunity-enhancing flexibility-oriented practices, such as a flexibility-focused performance appraisal system and providing opportunities for employees to share their ideas and solutions for the introduction of new products and services (Chang et al., 2013). Thus, a flexibility-oriented HRM system promotes behavioral flexibility. Therefore, we propose below hypotheses.

H2. Flexibility-oriented HRM system has a positive effect on human resource flexibility.

H3. Human resource flexibility has a positive effect on firm innovation.

H2c. Human resource flexibility positively mediates flexibility-oriented HRM system - firm innovation link.

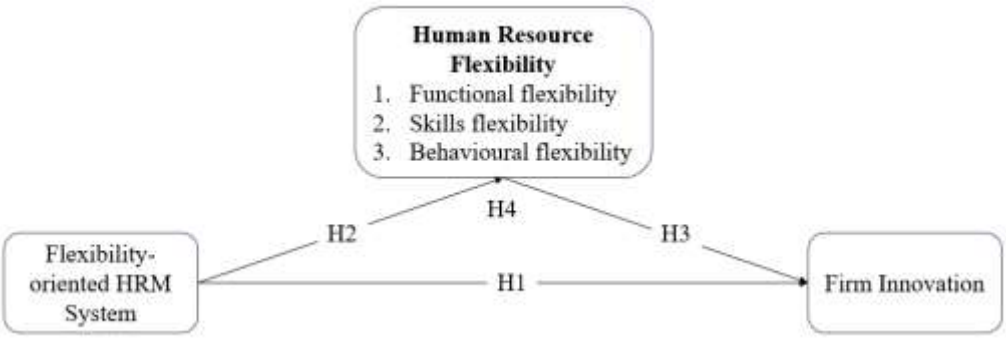

Figure 1. Theoretical Model

3 Methodology

Sampling Technique and Procedure

HR managers from different companies contacted personally and encouraged to take part in this research. The research aims and the confidentiality of the data submitted by their respective companies explained to the HR managers. Upon the HR managers' willingness to participate, a self-administered questionnaire along with a cover letter distributed to 280 firms. The cover letter explicitly stated that all provided information would be kept confidential, and only the study's overall findings would be reported. Additionally, participants were informed that there are no "wrong" or "right" responses, only their perceptions against the given statements. The questionnaire was designed in English, as the respondents were proficient in English. Previous studies conducted in Pakistan also utilized questionnaires in the English language. A 52.5% response rate was achieved from the 147 returned questionnaires out of the 280 sent. Due to incomplete replies, twelve (12) were disqualified. SPSS was used to enter the remaining 135 valid replies and analyze the data further.

Podsakoff et al. (2012) explained that collecting data simultaneously may lead to common method bias, potentially influencing the study's findings. Therefore, the variance inflation factors (VIFs) criterion was employed to verify the absence of common method bias. The VIF values, all below 3.3, confirm no issue with standard method bias (Kock, 2015).

3.1 Measures

The scales used for data collection related to the study variables were adopted from previous studies. Respondents were instructed to rate on a scale from 1 to 5, where "1" represented "to a little extent and strongly disagree," and "5" denoted "to a great extent and strongly agree."

Firm Innovation. A six-item measure adapted from Jiménez and Sanz, (2008) was used to evaluate firm innovation. The respondents were asked to rank the level of business innovation in terms of the launch of new goods and services, with a score of "1" denoting "below competitors" and a score of "5" denoting "above competitors." "Number of new products/services introduced during the past three years" and "Number of process changes introduced during the past three years" were two examples of sample items. According to Hair et al. (2019a), the scale showed respectable internal consistency, with a composite reliability (CR) score over 0.70 (CR=0.90).

Flexibility-oriented HRM System. Chang et al. (2013) used an 11-item scale to assess the

flexibility-oriented HRM system. "Provides core knowledge employees with job rotation opportunities to enable them to obtain a variety of skills" is an example item from the scale. According to Hair et al. (2019), the composite reliability value surpasses the minimal threshold of >0.70 (CR=0.91), hence confirming internal consistency.

Human Resource Flexibility. Beltrán et al. (2008) used an 11-item measure to assess human resource flexibility. 1) Functional flexibility, 2) skill malleability, and 3) behavior flexibility are all captured by the scale. Examples of statements include "Our employees can switch to more qualified jobs within a short time," "Employees in this department try to constantly update their skills and abilities," as well as "When employees detect problems in performing their jobs, they voluntarily try to identify the causes of these problems." The human resource flexibility scale's internal consistency is confirmed by the composite reliability value (CR=0.88) (Hair et al., 2019).

4 Data Analysis and Results

PLS-SEM is an advanced statistical technique that enables researchers to test complicated research models without imposing the conditions of normality and sample size. Therefore, PLS-SEM in SmartPLS software was used to test hypotheses. The step-by-step guidelines provided by Hair et al. (2019) to apply PLS-SEM were used in this study.

4.1 Internal Consistency, Convergent and Discriminant Validity

Using the measuring model, internal consistency, convergent validity, and discriminant validity were verified by Hair et al. (2019) recommendations. Internal consistency, convergent validity, and discriminant validity are established using factor loadings, composite reliability (CR), average variance extracted (AVE), and the Heterotrait-Monotrait (HTMT) ratio, which the measurement model provides. According to Hair et al. (2019), Table 1's findings indicate that the factor loadings against each corresponding item are greater than the allowable range. Additionally, all variables have composite reliability ratings greater than 0.70, indicating adequate internal consistency. Convergent validity is confirmed by the average variance extracted (AVE) values for every variable above 0.50 (Hair et al., 2019). Discriminant validity is further established by the HTMT ratio values in Table 2, which are less than 0.85 (Henseler et al., 2015; Hair et al., 2019).

Table 1. Factor loadings, Reliability and Convergent Validity

Variables	Items	Loadings	CR	AVE
Flexibility-oriented HRM System	FOHRM1	0.82	.91	.52
	FOHRM2	0.78		
	FOHRM3	0.73		
	FOHRM4	0.76		
	FOHRM5	0.75		
	FOHRM6	0.71		
	FOHRM7	0.78		
	FOHRM8	0.59		
	FOHRM9	0.65		
	FOHRM10	0.62		
	FOHRM11	0.73		
Humen Resource Flexibility	HRF1	0.57	.85	.63
	HRF2	0.82		
	HRF3	0.78		
	HRF4	0.73		
	HRF5	0.76		
	HRF6	0.75		
	HRF7	0.78		

	HRF8	0.78		
	HRF9	0.87		
	HRF10	0.76		
	HRF11	0.78		
Firm Innovation	FI1	0.75	.88	.56
	FI2	0.74		
	FI3	0.75		
	FI4	0.80		
	FI5	0.68		
	FI6	0.74		

Table 2. Heterotrait-Monotrait Ratio

Variables	**Firm Innovation**	**Human Resource Flexibility**	**Flexibility-oriented HRM System**
Firm Innovation	-		
Human Resource Flexibility	0.70	-	
Flexibility-oriented HRM System	0.62	0.68	-

Note: HRM: human resource management, HTMT<0.85.

4.2 Hypotheses Testing

According to the guidelines of Hair and colleagues, hypotheses were tested by applying a structural model (PLS-SEM) using 5,000 bootstraps (Hair et al., 2019) at a 95 percent confidence interval. The structural model provides the direct and indirect effects and values of significance (t-value, p-value, and lower-level confidence interval/upper-level confidence internal). The values in Table 3 show that a flexibility-oriented HRM system significantly and positively affects firm innovation (β=0.42, t-value=7.47, p<0.05, LL95%CI=0.30, UL95%CI=0.53). Thus, hypothesis 1 is accepted. Further, results highlight that a flexibility-oriented HRM system positively affects human resource flexibility (β=0.18, t-value=2.28, p<0.05, LL95%CI=0.04, UL95%CI=0.32), confirming hypothesis 2. Results also posit that human resource flexibility has a positive and significant effect on firm innovation (β=0.38, t-value=7.23, p<0.05, LL95%CI=0.27, UL95%CI=0.47). Hence, hypothesis 3 is accepted. Finally, the values of the indirect effect show that human resource flexibility serves as the mediating role between flexibility-oriented HRM systems and firm innovation (β=0.21, t-value=4.67, p<0.05, LL95%CI=0.12, UL95%CI=0.30). Thus, hypothesis 4 is accepted.

Table 3. Hypotheses Testing

Relationships	*B*	*S.D.*	*t*-values	LL95%CI	UL95%CI	Hypotheses Decision
FOHRMS and Firm Innovation	0.42***	0.06	7.47	0.30	0.52	H1: Accepted
FOHRMS and HR Flexibility	0.18**	0.07	2.58	0.04	0.32	H2: Accepted
HR Flexibility and Firm Innovation	0.38***	0.05	7.23	0.27	0.47	H3: Accepted
Mediating Role of HR Flexibility	0.21***	0.04	4.67	0.12	0.30	H4: Accepted

Note. n = 135, FOHRMS: flexibility-oriented human resource management system, HR: human resource.

5 Discussion

Using the AMO framework, this study examines the direct and mediated effects of the flexibility-oriented HRM system on firm innovation through human resource flexibility. First, the findings suggest that the flexibility-oriented HRM system substantially enhances firm innovation performance. This aligns with the AMO framework, indicating that the flexibility-oriented HRM system, through the recruitment and selection of human resources with flexible skills, motivates them to engage in flexible behavior facilitated by a flexible reward system, contributing to the introduction of new products and services (Chang et al., 2013; Zhang et al., 2023). Previous studies also support the findings of this research (Lakshman et al., 2022).

Second, the findings also indicate that the flexibility-oriented HRM system promotes human resource flexibility. This is consistent with the AMO framework (Marin-Garcia & Tomas, 2016; Jiang et al., 2012), which suggests that ability-enhancing flexibility-oriented HRM practices help firms acquire and develop functional and skills flexibilities to address dynamic customer needs. Furthermore, motivation and opportunity-enhancing practices of the flexibility-oriented HRM system promote behavioral flexibility (Jiang et al., 2012). Prior literature also supports the findings that the flexibility-oriented HRM system may promote human resource flexibility (Zhang, 2020).

Third, the results state that human flexibility—function, skill, and behavioral flexibility—assists businesses in enhancing their current offerings and launching new ones. This aligns with the AMO framework (Appelbaum et al., 2000), which describes how the skills, drive, and chance to contribute to human resources lead to better performance. Fourth, our research validates that business innovation and the flexibility-oriented HRM system are mediated by human resource flexibility. This aligns with the AMO paradigm and other research (Beltrán-Martín et al., 2008), which demonstrates that human resource flexibility is a mediator between the HRM-performance relationship.

5.1 Theoretical Implications

Our research makes three important contributions to the body of literature. First, by clarifying the function of the flexibility-oriented HRM system in fostering human resource flexibility and eventually resulting in higher innovative performance, the findings improve knowledge of human resource flexibility.

Second, our study contributes to the emerging literature on the Ability-Motivation-Opportunity (AMO) framework by addressing the call for future investigation in a recent systematic literature review by Bos-Nehles et al. (2023). Using the AMO framework, our study explicates human resource flexibility as an underlying mechanism between the flexibility-oriented HRM system and firm innovation. Third, our study extends our understanding of how firms can achieve superior innovation by leveraging human resource management, addressing a recent call for future research (Lenart-Gansiniec et al., 2023). Furthermore, it contributes to the innovation literature, particularly in a turbulent context such as Pakistan, which has been relatively less studied.

5.2 Practical Implications

Our study offers important implications for top management and HR practitioners. Findings highlight the importance of a flexibility-oriented HRM system in promoting human resource flexibility to gain superior innovation. Therefore, top management and HR practitioners may design and implement flexibility-oriented HRM systems that help firms hire human resources with functional, skills, and behavioral flexibility. Further, a flexibility-oriented HRM system may help firms improve human resource flexibility and contribute to innovation performance. Similarly, findings suggest that flexibility-oriented performance appraisal and reward systems motivate employees to acquire new knowledge to improve their functional and skills flexibility, which may help them contribute to firm innovation performance. In addition, it provides evidence to HR

practitioners that designing and implementing a flexibility-oriented HRM system is crucial for achieving innovative performance. By providing evidence for the importance of flexibility-oriented HRM systems and human resource flexibility in promoting innovation, which contributes to higher firm performance, this study highlights avenues for improvement that Pakistani firm owners and HR practitioners can address to compete effectively with Chinese and Indian enterprises in the region. Pakistani firms are underperforming as compared to their counterparts in the South Asian region (World Economic Forum, 2016). It may help Pakistan firms to increase their contribution to gross-domestic products (GDP), employment generation, and exports, which will help in poverty alleviation and improvement of quality of life in Pakistan.

5.3 Strengths, Limitations, and Future Directions

However, our research produces some interesting insights by explaining the relationships between flexibility-oriented HRM systems, human resource flexibility, and firm innovation. However, we found some limitations that future studies may address. First, the cross-sectional nature of the data may limit the cause of common method bias (CMB), which can artificially inflate the measure of the effect sizes (Podsakoff et al., 2012). Therefore, future studies may collect time-lagged multi-source data to reduce the likelihood of the CMB and explain the cause-and-effect relationships.

5.4 Conclusion

The findings of this study reveal that a flexibility-oriented HRM system substantially contributes to innovation performance. Further, a flexibility-oriented HRM system promotes human resource flexibility (functional, skills, and behavioral flexibility) that helps firms amplify innovation. Human resource flexibility is an underlying mechanism explaining flexibility-oriented HRM systems' effect on firm innovation.

Reference

Alghamdi, O., & Agag, G. (2024). Competitive advantage: A longitudinal analysis of the roles of data-driven innovation capabilities, marketing agility, and market turbulence. *Journal of Retailing and Consumer Services*, *76*, 103-547.

Appelbaum, E. (2000). *Manufacturing advantage: Why high-performance work systems pay off*. Cornell University Press. https://books.google.com/books?hl=en&lr=&id=WqfG1HDc3fsC&oi=fnd&pg=PR7&dq=Appelbaum,+Eileen,+Thomas+Bailey,+Peter+B.+Berg,+Arne+L.+Kalleberg,+and+Thomas+Andrew+Bailey.+2000.+Manufacturing+Advantage:+Why+High-Performance+Work+Systems+Pay+Off.+Cornell+University+Press.&ots=XKMLuxyIOM&sig=u7-zFeoApYBUcvQDNUHLDxZ0Iis

Bal, P. M., & De Lange, A. H. (2015). From flexibility human resource management to employee engagement and perceived job performance across the lifespan: A multisample study. *Journal of Occupational and Organizational Psychology*, *88*(1), 126–154. https://doi.org/10.1111/joop.12082

Baller, S., Dutta, S., & Lanvin, B. (2016). *Global information technology report 2016*. Ouranos Geneva. https://formatresearch.com/img/file/varie/2016/WEF_GITR_Full_Report.pdf

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Beltrán-Martín, I., Roca-Puig, V., Escrig-Tena, A., & Bou-Llusar, J. C. (2008). Human Resource Flexibility as a Mediating Variable Between High Performance Work Systems and Performance. *Journal of Management*, *34*(5), 1009–1044. https://doi.org/10.1177/0149206308318616

Bhattacharya, M., Gibson, D. E., & Doty, D. H. (2005). The Effects of Flexibility in Employee Skills, Employee Behaviors, and Human Resource Practices on Firm Performance. *Journal of Management*, *31*(4), 622–640. https://doi.org/10.1177/0149206304272347

Bos-Nehles, A., Townsend, K., Cafferkey, K., & Trullen, J. (2023). Examining the Ability, Motivation and Opportunity (AMO) framework in HRM research: Conceptualization, measurement and interactions. *International Journal of Management Reviews*, *25*(4), 725–739. https://doi.org/10.1111/ijmr.12332

Botelho, C. (2020). The influence of organizational culture and HRM on building innovative capability. *International Journal of Productivity and Performance Management*, *69*(7), 1373–1393.

Chang, S., Gong, Y., Way, S. A., & Jia, L. (2013). Flexibility-Oriented HRM Systems, Absorptive Capacity, and Market Responsiveness and Firm Innovativeness. *Journal of Management*, *39*(7), 1924–1951. https://doi.org/10.1177/0149206312466145

Chowhan, J. (2016). Unpacking the black box: Understanding the relationship between strategy, HRM practices, innovation and organizational performance. *Human Resource Management Journal*, *26*(2), 112–133. https://doi.org/10.1111/1748-8583.12097

Damanpour, F. (1991). Organizational innovation: a meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, *34*(3), 555–590. https://doi.org/10.2307/256406

Damanpour, F., Walker, R. M., & Avellaneda, C. N. (2009). Combinative Effects of Innovation Types and Organizational Performance: A Longitudinal Study of Service Organizations. *Journal of Management Studies*, *46*(4), 650–675. https://doi.org/10.1111/j.1467-6486.2008.00814.x

De La Lastra, S. F.-P., Martin-Alcazar, F., & Sanchez-Gardey, G. (2014). Functional flexibility in human resource management systems: Conceptualization and measurement. *International Journal of Business Administration*, *5*(1), 1.

Do, B.-R., Yeh, P.-W., & Madsen, J. (2016). Exploring the relationship among human resource flexibility, organizational innovation and adaptability culture. *Chinese Management Studies*, *10*(4), 657–674. https://doi.org/10.1108/CMS-01-2016-0022

Donate, M. J., Peña, I., & Sánchez De Pablo, J. D. (2016). HRM practices for human and social capital development: Effects on innovation capabilities. *The International Journal of Human Resource Management*, *27*(9), 928–953. https://doi.org/10.1080/09585192.2015.1047393

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2014). Multivariate data analysis (new international ed.). *Harlow: Pearson Education*.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Jiang, J., Wang, S., & Zhao, S. (2014). Does HRM facilitate employee creativity and organizational innovation? A study of Chinese firms. In *Whither Chinese HRM?* (pp. 83–105). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315829562-5/hrm-facilitate-employee-creativity-organizational-innovation-study-chinese-firms-jianwu-jiang-shuo-wang-shuming-zhao

Jiang, K., Lepak, D. P., Han, K., Hong, Y., Kim, A., & Winkler, A.-L. (2012). Clarifying the construct of human resource systems: Relating human resource management to employee performance. *Human Resource Management Review*, *22*(2), 73–85.

Jiang, K., Lepak, D. P., Hu, J., & Baer, J. C. (2012). How Does Human Resource Management Influence Organizational Outcomes? A Meta-analytic Investigation of Mediating Mechanisms. *Academy of Management Journal*, *55*(6), 1264–1294. https://doi.org/10.5465/amj.2011.0088

Jiménez-Jiménez, D., & Sanz-Valle, R. (2008). Could HRM support organizational innovation? *The International Journal of Human Resource Management*, *19*(7), 1208–1221. https://doi.org/10.1080/09585190802109952

Ketkar, S., & Sett, P. K. (2009). HR flexibility and firm performance: Analysis of a multi-level

causal model. *The International Journal of Human Resource Management*, *20*(5), 1009–1038. https://doi.org/10.1080/09585190902850240

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of E-Collaboration (Ijec)*, *11*(4), 1–10.

Lakshman, C., Wang, L., Adhikari, A., & Cheng, G. (2022). Flexibility oriented HRM practices and innovation: Evidence from China and India. *The International Journal of Human Resource Management*, *33*(12), 2473–2502. https://doi.org/10.1080/09585192.2020.1861057

Legate, A. E., Hair, J. F., Chretien, J. L., & Risher, J. J. (2023). PLS-SEM: Prediction-oriented solutions for HRD researchers. *Human Resource Development Quarterly*, *34*(1), 91–109. https://doi.org/10.1002/hrdq.21466

Lenart-Gansiniec, R., Sypniewska, B. A., & Chen, J. (2023). *Innovation-driven human resource management practices: A systematic review, integrative framework, and future research directions*. https://www.ceeol.com/search/article-detail?id=1129274

Marin-Garcia, J. A., & Tomas, J. M. (2016). Deconstructing AMO framework: A systematic review. *Intangible Capital*, *12*(4), 1040–1087.

Martínez-Sánchez, A., Vela-Jiménez, M. J., Pérez-Pérez, M., & De-Luis-Carnicer, P. (2009). Inter-organizational Cooperation and Environmental Change: Moderating Effects between Flexibility and Innovation Performance. *British Journal of Management*, *20*(4), 537–561. https://doi.org/10.1111/j.1467-8551.2008.00605.x

Martínez-Sánchez, Á., Vela-Jimenez, M.-J., Abella-Garces, S., & Gorgemans, S. (2019). Flexibility and innovation: Moderator effects of cooperation and dynamism. *Personnel Review*, *48*(6), 1548–1564.

Martínez-Sánchez, A., Vicente-Oliva, S., & Pérez-Pérez, M. (2020). The relationship between R&D, the absorptive capacity of knowledge, human resource flexibility and innovation: Mediator effects on industrial firms. *Journal of Business Research*, *118*, 431–440.

Nadeem, S., & de Luque, M. F. S. (2020). Developing an understanding of the human resource (HR) complexities in Pakistan with a GLOBE cultural lens. *Journal of Management & Organization*, *26*(4), 483–501.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of Method Bias in Social Science Research and Recommendations on How to Control It. *Annual Review of Psychology*, *63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Rasheed, M. A., Shahzad, K., Conroy, C., Nadeem, S., & Siddique, M. U. (2017). Exploring the role of employee voice between high-performance work system and organizational innovation in small and medium enterprises. *Journal of Small Business and Enterprise Development*, *24*(4), 670–688.

Sekhar, C., Patwardhan, M., & Vyas, V. (2017). Causal modelling of HR flexibility and firm performance in Indian IT industries. *Journal of Modelling in Management*, *12*(4), 631–651.

Shahzad, K., Arenius, P., Muller, A., Rasheed, M. A., & Bajwa, S. U. (2019). Unpacking the relationship between high-performance work systems and innovation performance in SMEs. *Personnel Review*, *48*(4), 977–1000.

Shahzad, K., De Sisto, M., Rasheed, M. A., Bajwa, S. U., Liu, W., & Bartram, T. (2022). A sequential relationship between entrepreneurial orientation, human resource management practices, collective organisational engagement and innovation performance of small and medium enterprises. *International Small Business Journal: Researching Entrepreneurship*, *40*(7), 875–903. https://doi.org/10.1177/02662426211056460

Tian, M., Deng, P., Zhang, Y., & Salmador, M. P. (2018). How does culture influence innovation? A systematic literature review. *Management Decision*, *56*(5), 1088–1107.

Way, S. A., Wright, P. M., Tracey, J. B., & Isnard, J. F. (2018). HR flexibility: Precursors and the contingent impact on firm financial performance. *Human Resource Management*, *57*(2),

567–582. https://doi.org/10.1002/hrm.21867

Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). Human resources and the resource based view of the firm. *Journal of Management*, *27*(6), 701–721. https://doi.org/10.1177/014920630102700607

World Economic Forum. 2016. "The Global Information Technology Report 2016." https://www.weforum.org/reports/the-global-information-technology-report-2016/.

Wright, P. M., & Snell, S. A. (1998). Toward a Unifying Framework for Exploring Fit and Flexibility in Strategic Human Resource Management. *The Academy of Management Review*, *23*(4), 756. https://doi.org/10.2307/259061

Zhang, B. (2020). Human resource change-agent role, state ownership, and employee behavioural flexibility. *Asia Pacific Journal of Human Resources*, *58*(2), 268–288. https://doi.org/10.1111/1744-7941.12213