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Unpacking the Impact of Socially Responsible HRM on Employee Innovation Performance: A Moderated Serial Mediation Model

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Abstract

Innovation by employees is essential for the sustained competitiveness of high-tech firms, and socially responsible human resource management (SRHRM) has emerged as an important managerial approach for supporting such outcomes. As an HRM practice grounded in corporate social responsibility principles, SRHRM can shape how employees think and behave at work. Guided by person–environment fit theory, this research develops a moderated serial mediation framework to clarify how SRHRM contributes to employee innovation performance (EIP). Data were collected through a cross-sectional survey of 440 employees working in Chinese high-tech companies. Results indicate that SRHRM not only enhances EIP directly but also operates through multiple psychological pathways. Specifically, person–organization fit (P–O fit) and work engagement (WE) each serve as mediators, both independently and in a sequential process. In addition, employees' individualism orientation (IO) alters the strength of these mechanisms: when IO is high, the positive impact of P–O fit on WE becomes stronger, and the overall serial mediation from SRHRM to EIP is amplified. The study contributes to HRM and innovation research by demonstrating how SRHRM promotes innovation through employee fit and engagement, and by emphasizing the role of individual cultural values in these relationships.

Keywords: Individualism orientation, SRHRMperson-organization fit, Employee innovation performance, Work engagement

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Introduction

China's shift toward high-quality economic growth has heightened the priority placed on innovation as a tool for restructuring and upgrading its economy. Strengthening firms' innovative capabilities is viewed as a crucial means of stimulating market vitality and supporting sustainable development [1, 2]. High-tech enterprises, in particular, are seen as central to driving technological progress [3]. Despite significant governmental support for innovation, however, China still trails leading developed nations. According to the Global Innovation Index 2023 [4], China ranks 12th—behind the U.S., U.K., France, and Germany. Although several Chinese companies are among the world's top investors in R&D, only a small number appear in global rankings of highly innovative firms [5]. This discrepancy suggests that heavy R&D spending does not always translate into strong innovation outcomes. One explanation points to deficiencies in employee innovation performance (EIP), a critical driver of organizational renewal and competitive advantage [6-9]. Because employees generate, refine, and apply novel ideas [10, 11], understanding what enhances EIP is essential.

A considerable body of research links HRM practices to innovative employee behavior [12-15]. However, contemporary organizations face increasing pressure to integrate ethical and socially responsible principles into their operations [16]. With CSR concepts becoming embedded in HRM systems [17], socially responsible HRM (SRHRM) practices—emphasizing

fairness, ethical conduct, and social contribution—have become a way to foster employee identification with their organization and encourage constructive work behaviors. While CSR has been widely examined, the link between SRHRM and innovation at the employee level remains underexplored [18-20]. To address this, our study draws on person–environment fit (P–E fit) theory [21], which posits that alignment between employees' values and the organizational context contributes to enhanced performance. In the context of SRHRM, this perspective implies that socially responsible policies may cultivate environments that support employee motivation, well-being, and engagement [22].

HRM research often describes the relationship between managerial practices and employee outcomes as a "black box," highlighting the need to investigate the mechanisms that explain this link [23, 24]. In alignment with this perspective and P–E fit theory, we incorporate two psychological constructs—person–organization fit (P–O fit) and work engagement (WE)—as sequential mediators. These constructs have been shown to shape employees' performance and innovation-related behaviors [25-27]. Given that one mediating process may influence another, modeling a sequential mediation path is appropriate for capturing the complexity of SRHRM's impact [28]. We propose that SRHRM enhances employees' perception that their values align with organizational values, which in turn elevates work engagement and ultimately promotes innovation.

Cultural values also play a role in shaping employees' engagement. Studies show that individualism–collectivism orientations influence how people derive motivation and involvement from their work [29-31]. Individuals with stronger individualistic tendencies tend to be more driven by personal goals and autonomy, whereas collectivistic individuals may be more motivated by group cohesion and shared purpose. Although China is widely perceived as collectivist, evidence shows that individuals vary considerably in their cultural orientations [32-35]. Prior research also suggests that individualism orientation (IO) can encourage innovative behavior [36-38]. This raises the question of whether IO strengthens the link between P–O fit and WE, thereby influencing innovation in a context where collectivist norms are dominant.

Addressing these gaps, this study pursues three objectives: (a) to examine how SRHRM influences EIP; (b) to analyze the sequential psychological mechanisms involving P–O fit and WE; and (c) to assess the moderating role of IO in shaping these relationships.

Our study contributes to the EIP literature in several important ways. First, we draw attention to the largely underexamined influence of socially responsible HRM on employee behavior, especially innovation. Yassin and Beckmann (2024) have argued that understanding employee outcomes in the context of CSR-integrated HR practices is essential for advancing research on innovation-related behaviors. Second, by applying person–environment fit theory, we extend existing work on EIP through a sequential model that clarifies the psychological pathways connecting SRHRM to employee innovation. Much of the earlier literature has tended to examine innovation drivers either from the standpoint of organizational context or from individual characteristics alone [39-41]. What has been largely overlooked is how the alignment between employees and their work environment predicts innovative behavior. To address this gap, our model integrates SRHRM, P–O fit, and work engagement to offer a more comprehensive understanding of how EIP emerges.

Review of Literature and Hypothesis Development

Employee innovation performance (EIP) and socially responsible HRM (SRHRM)

Emerging from the foundations of corporate social responsibility (CSR) [42], SRHRM represents a key organizational mechanism for supporting long-term sustainability goals [43, 44]. Orlitzky and Swanson [45] introduced the concept as a way of operationalizing CSR principles within HRM systems. SRHRM emphasizes practices that reflect ethical treatment, social responsibility, and concern for employee well-being [46]. As employees are central stakeholders in organizations [47, 48], SRHRM initiatives aim to create multidimensional value that extends beyond economic and legal considerations [49]. These practices include promoting safe working environments, offering compensation above legal requirements, supporting work–life balance, and ensuring fairness and kindness in organizational interactions [48, 50]. SRHRM also emphasizes equity, justice, and inclusive opportunities for development. It encourages democratic participation by involving employees in decision-making processes [48, 50]. Unlike traditional HRM, which often focuses narrowly on job performance, SRHRM seeks to develop employees as both effective workers and responsible societal contributors.

Given its importance for fulfilling organizational sustainability agendas, research examining how SRHRM shapes work-related outcomes has expanded [46-48, 50, 51]. Our study extends this line of inquiry by investigating EIP—defined as employees' generation, implementation, and advocacy of novel ideas that benefit the organization [52]—as an additional outcome of SRHRM.

HRM research generally argues that supportive HR practices influence employees' attitudes and behaviors by fostering positive work conditions that encourage engagement and constructive performance [53-55]. Extending this reasoning, we expect SRHRM to promote innovative behavior. HRM embedded with social responsibility frequently acts as an ethical steward within organizations [46, 56], helping create work environments that encourage creative expression and innovation. Practices that promote inclusivity and equal opportunity can foster diverse perspectives and empower employees to feel

valued, thereby increasing their willingness to propose and implement creative ideas [57]. Based on these arguments, we propose the following:

H1. SRHRM has a positive effect on EIP.

SRHRM, person–organization fit (P–O Fit), and EIP

Kristof [58] conceptualized P–O fit as the congruence between an individual and an organization. This construct has garnered considerable attention because of its relevance to strategic HRM and its documented influence on employees' attitudes and behavioral outcomes [59-61]. Prior studies consistently show that P–O fit fosters innovation-related behaviors such as creativity, innovative performance, and innovative work behavior [62-64].

Person–environment fit theory suggests that individuals perform better when their personal values are aligned with the environment in which they work [65, 66]. Employees who value ethical conduct and social responsibility are likely to perceive stronger alignment with organizations that implement SRHRM practices, as such practices mirror their own principles [48]. For example, organizations that hire employees based on ethical values and emphasize socially responsible behavior may foster stronger feelings of belonging and identification among workers, which can encourage innovation. Employees may view SRHRM practices as a form of organizational support, reinforcing their work-related values and motivating them to contribute creatively. Research indicates that employees perform more effectively when their work environment aligns with their values and expectations [47, 67, 68].

Therefore, we propose:

H2. P–O fit mediates the positive relationship between SRHRM and EIP.

SRHRM, work engagement (WE), and EIP

Schaufeli *et al.* [69] conceptualized work engagement (WE) as a positive, energized state in which employees experience vigor, dedication, and absorption in their work. Engaged individuals invest physical, cognitive, and emotional effort into their job tasks and show strong commitment to organizational objectives. WE has attracted increasing scholarly attention because it reliably links HRM-related antecedents to beneficial employee, team, and organizational outcomes [70, 71].

Since SRHRM emphasizes practices that support employee well-being beyond mere legal and financial obligations [49], it is reasonable to expect that such initiatives strengthen employees' engagement. When employees perceive that they are treated fairly, offered equal opportunities, and recognized for their contributions, they tend to feel more motivated and willing to invest discretionary effort in their work. Prior research indicates that engaged employees display stronger intrinsic motivation and actively look for creative solutions to workplace challenges [72-74]. Moreover, they are more inclined to help coworkers and exceed performance expectations, resulting in enhanced individual outcomes [75-77]. Thus, we argue that:

H3. WE mediates the positive effect of SRHRM on EIP.

SRHRM, P–O Fit, EIP, and WE

Earlier sections have explained how SRHRM may influence EIP through either P–O fit or WE independently. However, the black-box perspective of HRM suggests that organizational practices often exert indirect, layered, and interconnected effects on employee outcomes [28]. This reasoning indicates the possibility that P–O fit and WE may function together in a sequential manner rather than as isolated mediators.

Existing research provides support for this idea: employees who perceive a strong fit with their organization are more likely to feel engaged at work and subsequently display innovative behavior [78, 79]. Moreover, WE itself has been shown to enhance innovation performance [26]. Drawing from P–E fit theory, which posits that alignment between individuals and their work contexts drives performance [22], we suggest that SRHRM enhances employees' sense of fit, which then boosts their engagement and ultimately leads to higher innovation performance. Based on this reasoning, we propose:

H4. P–O fit and WE jointly mediate the positive relationship between SRHRM and EIP in a serial manner.

Individualism orientation (IO) as a moderator

Cultural orientation plays an important role in shaping how individuals interpret and respond to workplace environments [80]. Individualism–collectivism, a widely studied cultural dimension, reflects the degree to which people prioritize personal goals versus group interests [81]. Although often conceptualized as opposite poles of a continuum [82-84], contemporary research indicates that individuals—even within collectivist societies—may simultaneously display varying levels of both values [32-35]. Adopting this view, we examine IO as a person-specific characteristic.

Employees with higher IO tend to prioritize autonomy, personal achievement, and self-direction [85, 86]. Such individuals typically rely on their personal goals and preferences when forming work attitudes [87]. Prior evidence shows that IO can meaningfully shape innovation behavior [36, 38]. We therefore expect that SRHRM practices—which emphasize ethical behavior, fairness, and development opportunities—may resonate more strongly with individuals who value independence

and personal accomplishment. For these employees, SRHRM may strengthen their perceived fit with the organization, encouraging them to engage more fully and exhibit innovative performance.

In contrast, employees with low IO may prioritize collective goals and interdependence. Because SRHRM contains elements that reward personal responsibility and individual recognition, these practices may generate weaker perceptions of fit for such employees, potentially reducing their engagement and subsequent innovation.

Accordingly, we hypothesize:

H5. IO strengthens the positive relationship between P–O fit and WE; higher IO amplifies this linkage.

Considering both (a) the moderating role of IO on the P–O fit → WE relationship (H5), and

(b) the serial mediation of P–O fit and WE in the SRHRM → EIP relationship (H4),

IO is expected to shape the entire sequential process.

Thus, we propose:

H6. IO moderates the serial mediation from SRHRM to EIP through P–O fit and WE, such that the positive indirect effect is stronger for employees high in IO.

Figure 1 presents the overall proposed model.

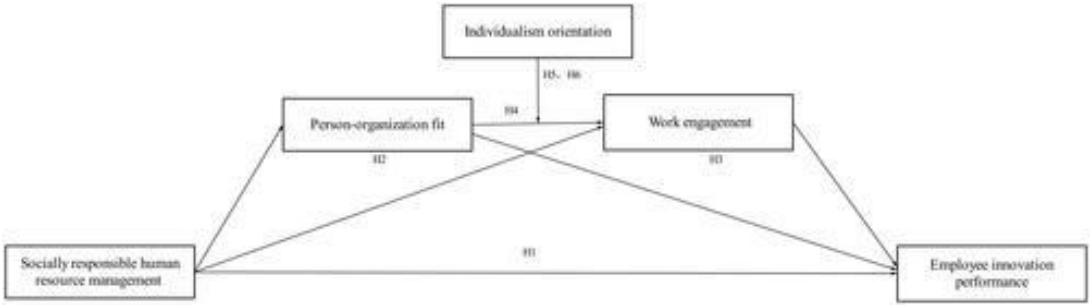

Figure 1. The proposed model

Method

Participants and procedure

Data were obtained through an online questionnaire administered to employees working in high-tech firms located in Zhuhai, Guangdong, China. Zhuhai was selected because it is one of the earliest special economic zones and hosts a large concentration of technology-driven enterprises, particularly in smart home appliance sectors. One researcher contacted potential firms through existing professional and personal networks and, after explaining the aims and practical requirements of the study, received permission from ten companies to invite their staff to participate. Because these organizations preferred electronic formats, the survey was created on the platform www.wjx.cn, which is widely used in China for professional data collection. Employees could access the survey using either a web link or a QR code distributed via email or WeChat, a commonly used communication tool. At the start of the survey, participants viewed a page describing the purpose of the study, how their data would be used, and assurances of voluntary participation and anonymity. Only after clicking a consent button could they proceed. They were also reminded that they could discontinue the survey at any moment without any negative consequences. These procedures were undertaken to reduce potential bias associated with survey research.

To further limit method-related bias, the questionnaire was divided into blocks, with each block corresponding to one construct. A participant could only advance to the next block after completing all items in the current one. Any missing responses triggered a notification to ensure completeness. The survey was administered entirely in Chinese, and to ensure conceptual equivalence with the original English items, a back-translation procedure was applied in accordance with Brislin's [88] recommendation. Ethical approval was obtained from the Walailak University Ethics Committee (Approval No. WUEC-23-292-01), confirming that all procedures aligned with the principles outlined in the Declaration of Helsinki. A total of 440 fully usable questionnaires were returned. The sample consisted predominantly of men, and respondents spanned a wide range of age groups, with most individuals falling between 26 and 45 years old. The workforce was generally well educated, with the majority holding at least a bachelor's degree and a smaller portion reporting postgraduate qualifications. Participants occupied a variety of positions, including technical, managerial, sales, and other professional roles.

Measures

The study employed validated measurement instruments for each construct, all of which used a five-point Likert scale ranging from "strongly disagree" to "strongly agree." Six items adapted from Shen and Benson's [48] measure were used to assess socially responsible human resource management, including statements about CSR training and the extent to which social performance is incorporated into employee evaluations. This scale demonstrated strong reliability and has been used successfully in prior studies within the Chinese context. Employee innovation performance was captured with nine items

developed by Janssen and Van Yperen [52], covering idea generation, promotion, and implementation. Reliability was exceptionally high, and previous research has confirmed the scale's suitability for Chinese samples. Person–organization fit was measured through six statements adapted from Memon *et al.* [89], which evaluate the perceived match between an individual and their employing organization. Work engagement was assessed using the Utrecht Work Engagement Scale introduced by Schaufeli and colleagues, a widely recognized instrument that has been validated in Chinese research. Individualism orientation was measured with seven items from Van Hooft and De Jong [90], a scale that captures the extent to which individuals prioritize independence and personal uniqueness; prior studies have shown its validity in Chinese cultural settings. The analyses also included several control variables—namely age, gender, education level, job role, length of employment, and ownership type of the organization—because these factors may shape employees' perceptions of HRM practices and tendencies toward innovation.

Results

Analysis

Data analysis was conducted using SPSS 26. Reliability values, descriptive statistics, assessments of common method bias, correlation coefficients, and regression analyses were generated. In addition, independent-samples t-tests and one-way ANOVA were used to examine differences in the main variables across demographic groups. Confirmatory factor analyses were performed using AMOS 25 to evaluate convergent and discriminant validity and to assess the overall fit of the proposed measurement model. To test mediation, serial mediation, and moderated mediation, Hayes's PROCESS macro (version 4.1) was employed. This analytical tool has been widely used in recent empirical work examining similar psychological mechanisms and was appropriate given the study's focus on a sequential chain of mediators and a moderator influencing one of the mediating paths.

Common method bias

A combination of procedural and statistical strategies was used to address potential common method bias. During the design phase, constructs were clearly separated, and respondents were informed that the measures of one variable had no inherent link to others, reducing the likelihood of artificially inflated correlations. The survey was anonymous, and respondents were reminded that participation was voluntary, minimizing pressure or social desirability effects. After data collection, Harman's single-factor test was conducted. The Kaiser–Meyer–Olkin value indicated sampling adequacy, and Bartlett's test of sphericity was significant. Five factors emerged with eigenvalues greater than one, accounting for nearly 60% of the total variance. The first unrotated factor explained less than 40% of the variance, which is below the recommended threshold, suggesting that common method bias was not a major concern.

Measurement

Internal consistency was examined using Cronbach's alpha, and values ranged from 0.837 to 0.944, exceeding the commonly accepted threshold of 0.70 and demonstrating the reliability of all scales. Convergent validity was then assessed using confirmatory factor analysis. All item loadings were above 0.5, composite reliability values surpassed 0.7, and average variance extracted values mostly exceeded 0.5 or fell within the acceptable lower range cited in prior literature. These results indicate that the measurement model possessed strong convergent validity and was suitable for subsequent hypothesis testing.

Table 1. Assessing the measurement model.

Construct	Item	SE	*p*	FL	Reliability and validity
EIP	EIP1	–	–	0.822	$\alpha = 0.944$; CR = 0.944; AVE = 0.652
	EIP2	0.047	***	0.816	
	EIP3	0.048	***	0.809	
	EIP4	0.047	***	0.794	
	EIP5	0.048	***	0.806	
	EIP6	0.046	***	0.801	
	EIP7	0.047	***	0.805	
	EIP8	0.048	***	0.796	
	EIP9	0.048	***	0.817	
SRHRM	SRHRM1	–	–	0.75	$\alpha = 0.888$; CR = 0.889; AVE = 0.571
	SRHRM2	0.062	***	0.742	
	SRHRM3	0.058	***	0.8	
	SRHRM4	0.058	***	0.767	
	SRHRM5	0.061	***	0.729	
	SRHRM6	0.06	***	0.746	

WE	WE1	–	–	0.674	α = 0.889; CR = 0.89; AVE = 0.473
	WE2	0.081	***	0.723	
	WE3	0.075	***	0.663	
	WE4	0.073	***	0.709	
	WE5	0.082	***	0.706	
	WE6	0.075	***	0.672	
	WE7	0.077	***	0.686	
	WE8	0.077	***	0.701	
	WE9	0.082	***	0.65	
P-O fit	P-O fit1	–	–	0.672	α = 0.837; CR = 0.839; AVE = 0.466
	P-O fit2	0.08	***	0.643	
	P-O fit3	0.078	***	0.689	
	P-O fit4	0.076	***	0.739	
	P-O fit5	0.089	***	0.673	
	P-O fit6	0.08	***	0.674	
IO	IO1	–	–	0.669	α = 0.859; CR = 0.86; AVE = 0.469
	IO2	0.084	***	0.626	
	IO3	0.078	***	0.71	
	IO4	0.082	***	0.721	
	IO5	0.088	***	0.656	
	IO6	0.08	***	0.717	
	IO7	0.082	***	0.688	

Note: ***$p < 0.001$; FL= factor loading; SE = standard error; CR = composite reliability; AVE = average variance extracted; α = Cronbach's alpha.

Table 2. Discriminant validity

	M	SD	EIP	SRHRM	WE	P-O fit	IO
EIP	3.622	0.973	(0.807)				
SRHRM	3.712	0.876	0.454**	(0.756)			
WE	3.865	0.727	0.48**	0.22**	(0.688)		
P-O fit	4.001	0.733	0.456**	0.261**	0.283**	(0.682)	
IO	3.134	0.654	0.069**	0.038**	0.051**	0.068**	(0.685)

Note: *M* = mean; SD = standard deviation; **Correlations are significant at 0.01 (two-tailed).

Following the criteria proposed by Fornell and Larcker [91], discriminant validity was assessed by comparing each construct's average variance extracted with the squared correlations between constructs. As presented in **Table 2**, the square roots of the AVE values exceed the corresponding inter-construct correlations, indicating adequate discriminant validity. **Table 3** summarizes the confirmatory factor analysis results for model fit, all of which fall within acceptable ranges. Although scholars differ on which fit indices should be prioritized, a common recommendation from Hair *et al.* [92, 93] and Holmes-Smith *et al.* [94] is to report at least three indices representing absolute, incremental, and parsimonious fit categories. In line with this guidance, our evaluation incorporated absolute fit measures such as the goodness-of-fit index, chi-square, RMSEA, adjusted goodness-of-fit index, and root-mean-square residual, alongside incremental indices including the normed fit index, comparative fit index, Tucker–Lewis index, and incremental fit index. The normed chi-square statistic was also included to represent parsimonious fit. Across all metrics, the values exceeded established benchmarks, confirming that the measurement models demonstrated strong overall fit.

Table 3. Goodness-of-fit indices for measurement models

Model fit summary	Criteria (assessment)	Thresholds	Obtained values	Criteria sources
Absolute fit	x^2		669.639	Marsh and Hocevar [95]; Bagozzi and Yi [96]
	RMSEA	≤0.08	<0.10	
	AGFI	≥0.9	0.917	
	GFI	≥0.9	0.927	
	RMR	<0.05	0.037	
Incremental fit	CFI	≥0.9	0.994	Browne and Cudeck [97]; Hair *et al.* [92]
	NFI	≥0.9	0.923	
	TLI	≥0.9	0.993	
	IFI	≥0.9	0.994	
Parsimonious fit	x^2/df	<3	1.082	Wheaton *et al.* (1977)

Analysis of direct, mediated, and sequential effects

To investigate the proposed relationships, we constructed a composite measure in SPSS 26 and applied Hayes's [98] PROCESS macro (version 4.1) for hypothesis testing. All analyses employed 5,000 bootstrap samples with confidence intervals set at 95%. Six types of effects were examined, including the direct influence of SRHRM, its indirect pathways, the sequential mediation process, moderation, and the moderated serial mediation mechanism.

Hypotheses 1 through 4 were evaluated using PROCESS Model 6, which is designed for testing serial mediation. In line with Hayes's recommendations, an effect was deemed significant when its confidence interval did not include zero. The bootstrap estimates for the direct, indirect, and mediated paths are summarized in **Tables 4** and **5**.

Four regression models were estimated, each controlling for demographic and organizational variables such as age, gender, educational attainment, job role, length of employment, and type of enterprise ownership. These controls were included in all models but are omitted from **Table 4** to keep attention on the central explanatory paths. Models 1 and 2 examined the extent to which SRHRM predicts the two mediators and assessed the connection between P–O fit and work engagement. Model 3 estimated the total effect of SRHRM on EIP, whereas Model 4 tested the adjusted direct effect of SRHRM on EIP once the mediators were incorporated into the analysis.

Table 4. Mediation results using PROCESS macro ($N = 440$)

Independent variables	Coefficient	SE	Lower CI	Upper CI
Model 1: Dependent variable = P-O fit (R^2 = 10.9%)				
SRHRM	0.212***	0.039	0.136	0.288
Model 2: Dependent variable = WE (R^2 = 11.4%)				
SRHRM	0.125**	0.040	0.047	0.203
P-O fit	0.229***	0.048	0.135	0.322
Model 3: Dependent variable = EIP (R^2 = 26.5%)				
SRHRM	0.489***	0.047	0.398	0.581
Model 4: Dependent variable = EIP (R^2 = 45.3%)				
SRHRM	0.343***	0.042	0.260	0.426
P-O fit	0.343***	0.052	0.242	0.445
WE	0.425***	0.051	0.325	0.525

Note: **$p \leq 0.01$; ***$p \leq 0.001$; CI = 95% confidence interval.

Table 5. The direct and mediated effects of SRHRM on EIP

Path	Effect	Boot SE	*t*	*p*	Boot LLCI	Boot ULCI
Total effect	0.489	0.047	10.463	0.000	0.398	0.581
Direct effect	0.343	0.042	8.102	0.000	0.26	0.426
Total indirect effect	0.147	0.026	–	–	0.08	0.18
Indirect effect (Xa → P-O fit → Yb)	0.073	0.016	–	–	0.034	0.098
Indirect effect (X → WE → Y)	0.053	0.018	–	–	0.014	0.083
Indirect effect (X → P-O fit → WE → Y)	0.021	0.006	–	–	0.008	0.031

Boot SE = bootstrap standard error; Boot LLCI = bootstrap lower confidence interval; Boot ULCI = bootstrap upper confidence interval.

[a] X = SRHRM.

[b] Y = EIP.

The analysis indicates that SRHRM exerts a significant influence on EIP. The total effect is 0.489, with the 95% confidence interval ranging from 0.398 to 0.581. Even after accounting for the mediating variables, the direct effect remains significant at 0.343 (95% CI [0.26, 0.426]). These results confirm support for H1.

The indirect pathways also yield significant findings. Both single-mediator routes—SRHRM influencing EIP through P–O fit (SRHRM → P–O fit → EIP) and through WE (SRHRM → WE → EIP)—produce confidence intervals that exclude zero, specifically [0.034, 0.098] and [0.014, 0.083], respectively. The sequential mediation involving both mediators (SRHRM → P–O fit → WE → EIP) is likewise significant, with a 95% confidence interval of [0.008, 0.031]. Together, these results substantiate H2 through H4.

Moderation and moderated serial mediation

Hypotheses 5 and 6 propose that the relationship between P–O fit and WE, as well as the full indirect chain from SRHRM to EIP, varies according to levels of IO. These propositions were tested using PROCESS Model 91, which accommodates moderated serial mediation. Three regression models were estimated. The first assesses how SRHRM shapes P–O fit. The second examines whether P–O fit predicts WE and whether this link differs across levels of IO, incorporating the interaction term between P–O fit and IO. The final model evaluates the downstream consequences of SRHRM for EIP through both

mediators while integrating IO as a moderator of the mediation sequence. Following recommendations by Aiken and West [99], Cohen *et al.* [100] and Hayes [98], all variables were mean-centered to facilitate interpretation of coefficients.

Model 2 **(Table 6)** shows that P–O fit has a significant positive effect on WE (β = 0.218, p < 0.001). The interaction between P–O fit and IO is also significant (β = 0.277, p < 0.001), indicating that the strength of the P–O fit → WE relationship depends on the level of IO. To visualize this interaction, the conditional effects were plotted at one standard deviation above and below the mean of IO. As illustrated in **Figure 2**, the association between P–O fit and WE becomes stronger when IO is high and weaker when IO is low. These findings corroborate H5.

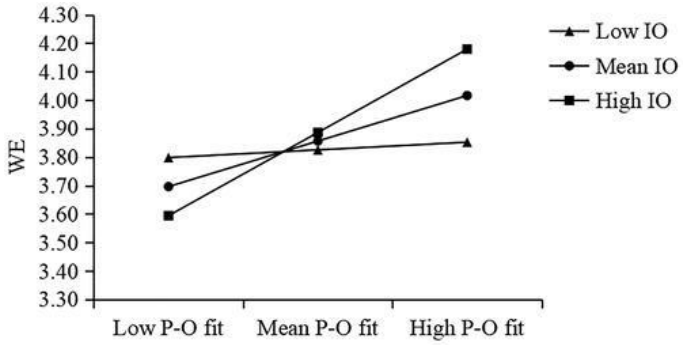

Figure 2. WE as a function of P-O Fit, illustrated at different levels of IO: mean, +1 SD and −1 SD

Table 6. Results of the moderated mediation analysis

Predictor	Model 1		Model 2		Model 3	
	Mediator variable P-O fit		Mediator variable WE		Dependent variable EIP	
	β	*t*	*β*	*t*	*β*	*t*
Constant	−0.810***	−5.509	3.384***	23.170	0.633**	2.695
	[−1.099,−0.521		[3.097,3.671]		[0.171,1.095]	
SRHRM	0.218***	5.660	0.127**	3.311	0.342***	8.100
	[0.143,0.294]		[0.052,0.202]		[0.259,0.425]	
P-O fit			0.218***	4.715	0.374***	7.282
			[0.127,0.309]		[0.273,0.475]	
IO			0.047	0.939		
			[−0.051,0.145]			
P-O fit × IO			0.277***	3.773		
			[0.133,0.421]			
WE					0.445***	8.692
					[0.344,0.546]	
R^2	0.068		0.132		0.428	
F	$F(1,438) = 32.037$, $p = 0.000$		$F(4,435) = 16.568$, $p = 0.000$		$F(3,436) = 108.646$, $p = 0.000$	

Note: **$p < 0.01$; ***$p < 0.001$; β = beta coefficient; t = t-value.

Table 7 presents results indicating that the conditional indirect effect rises with increases in the moderator. Additionally, the index of moderated mediation is statistically significant, with a bootstrapped 95% confidence interval of 0.01–0.049 and an effect size of 0.027. Thus, Hypothesis 6 was supported.

Table 7. Index of moderated serial mediation

Moderator value	The conditional indirect effect at mean and ±1 SD, with IO as the moderator			
	Effect	Boot SE	Boot LLCI	Boot ULCI
Low IO, −1 SD	0.004	0.008	−0.012	0.019
Mean	0.021	0.007	0.009	0.036
High IO, +1 SD	0.039	0.011	0.019	0.062
	Index of moderated mediation (SRHRM → P-O fit → WE → EIP)			
	Index	Boot SE	Boot LLCI	Boot ULCI
IO	0.027	0.01	0.01	0.049

Discussion

The purpose of this study was to investigate how SRHRM shapes EIP by considering the sequential roles of P–O fit and WE, and to assess whether IO conditions these processes. Drawing on P–E fit theory [101], which argues that favorable alignment

between individuals and their work environments leads to enhanced outcomes [102], we anticipated that SRHRM would promote stronger fit, increase engagement and ultimately improve innovation. The empirical results align with these expectations. SRHRM demonstrates a positive association with P–O fit, WE and employees' innovative behaviors. Beyond the independent contributions of P–O fit and WE, SRHRM also fosters EIP through a sequential pathway in which P–O fit enhances WE, which then supports innovative output. Moreover, this chain is strengthened when employees exhibit high IO. These findings underscore the usefulness of P–E fit theory in clarifying how SRHRM unfolds to influence employee innovation. The following sections outline the study's theoretical and practical value.

Theoretical contributions and implications

Several theoretical contributions emerge from this research. To begin with, the study enriches existing work on SRHRM and innovation by demonstrating that SRHRM contributes to higher levels of employee innovation within Chinese high-tech firms. This aligns with broader evidence suggesting that HRM practices play an important role in building innovative capacity and advancing sustainable organizational development [103]. Our findings also address recent calls, such as those by Yassin and Beckmann [104], for greater attention to the HRM–CSR–innovation nexus, thereby filling an underdeveloped area in the literature.

A key theoretical contribution lies in uncovering the sequential mechanism linking SRHRM to EIP. The discovery of a significant serial mediation process reinforces the "black-box" argument that organizational practices exert influence through multiple interdependent pathways [28]. Our results reveal that SRHRM improves employees' perceived fit with their organizations, which in turn fosters stronger engagement and paves the way for increased innovation. This aligns with prior studies that highlight the importance of P–O fit for engagement and downstream work-related outcomes [26, 105]. Moreover, consistent with research showing that WE fuels creativity and proactivity [106-108], our findings illustrate how engagement functions within a broader chain of influence. By spotlighting how one mediator shapes another, this research contributes a more refined perspective on the complexity of employee behavior in response to SRHRM—an area still only modestly explored in prior studies [109].

The study also confirms existing evidence that both P–O fit [25, 67, 110, 111] and WE [26, 112-114] serve as mediators of innovative performance. The presence of multiple effective paths suggests that SRHRM operates through several psychological mechanisms, encouraging future work to examine additional variables that may explain this multifaceted relationship.

A further theoretical advancement arises from the moderating role of IO. The results show that IO strengthens the positive effect of P–O fit on WE and amplifies the overall serial mediation from SRHRM to EIP. This aligns with research demonstrating that the impact of P–O fit can differ among individuals depending on their cultural orientations [115]. P–E fit theory helps clarify this finding: individuals with more individualistic values are especially responsive to perceptions of personal alignment with their environment. A good fit motivates them to invest effort in their tasks. Importantly, this evidence supports the notion that collectivist societies are more nuanced than commonly assumed [34, 116]. In contexts where autonomy, self-direction and achievement play roles in driving innovation [36, 38], SRHRM practices seem to resonate particularly strongly with employees high in IO. Including IO in the model therefore illustrates how cultural orientations shape the way individuals interpret workplace conditions, thereby broadening the theoretical reach of P–E fit across cultural settings.

Practical implications

This study also offers several implications for practice. First, organizations seeking to improve innovation should consider adopting SRHRM practices. Examples include recruiting talent committed to social responsibility, providing CSR-oriented development programs, supporting employees' personal and family needs and promoting autonomy and shared decision-making. These measures can enhance P–O fit and strengthen engagement, creating conditions that enable employees to perform innovatively.

Second, managers should evaluate HRM strategies through the lens of P–E fit. Hiring individuals whose personal values and goals align with organizational norms, offering training designed to help employees integrate with the organizational culture and maintaining open communication to understand employees' expectations can deepen emotional and motivational ties to their work. A supportive environment that offers adequate resources further boosts engagement, making employees more inclined to generate and implement innovative ideas.

Third, managers should recognize that employees' value orientations meaningfully influence their attitudes and responses to HRM practices. For employees with individualistic tendencies, SRHRM initiatives such as equitable compensation, opportunities for personal growth, open communication and involvement in socially responsible activities may be particularly effective. These practices help strengthen their perceived fit, thereby enhancing engagement. This is especially relevant in contemporary China, where individualistic values are increasingly visible among younger workers despite broader collectivist norms.

Limitations and future research

Although this study expands theoretical and practical understanding, several limitations suggest avenues for future research. Like most cross-sectional designs, this study cannot definitively establish causality. Longitudinal or experimental methods would better clarify temporal relationships among SRHRM, fit, engagement and innovation. Furthermore, SRHRM practices may vary across national, regional and sectoral contexts, raising questions about generalizability. While this study centers on China's high-tech sector, future research should examine diverse industries and countries to enhance external validity. Finally, the present study focuses on a single sequential mediation model. Additional variables rooted in P–E fit theory—such as person–job fit, person–supervisor fit, self-efficacy, mindfulness or knowledge-sharing behavior—may serve as further mediators. Likewise, moderators such as organizational innovation climate, transformational leadership or uncertainty avoidance could deepen understanding of the conditions under which SRHRM promotes innovation.

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