E-ISSN: 3108-4192

APSSHS

Academic Publications of Social Sciences and Humanities Studies
2024, Volume 4, Page No: 163-175
Available online at: https://apsshs.com/

Asian Journal of Individual and Organizational Behavior

The Influence of Employee Engagement and Knowledge-Sharing on the Link between High-Performance Work Systems and Innovative Behavior

Pablo Hernández[1], Lucia Morales[1], Javier Torres[1]*, Diego Navarro[1]

1. Department of Business Organization, Universidad Autónoma de Madrid, Madrid, Spain.

Abstract

The current study explores how employees' perceptions of high-performance work systems (HPWS) indirectly stimulate innovative behaviour (IB) by examining two mediating pathways, focusing on the combined effect of work engagement and knowledge-sharing at the individual level. Drawing on a sample of professors and researchers from a Spanish state university, the study applies partial least squares structural equation modelling (PLS-SEM) to investigate how engagement and knowledge-sharing jointly mediate the relationship between HPWS perceptions and IB. The analysis demonstrates that work engagement and knowledge-sharing operate in a sequential mediating manner, suggesting that HPWS positively impact IB primarily when engagement is present. The findings emphasize the need for careful planning and implementation of HPWS to ensure employees are motivated and committed, thereby maximizing innovative outcomes. This research sheds light on the mechanisms linking HPWS to IB, highlighting the crucial roles of engagement and knowledge-sharing in translating high-performance work practices into innovative behaviour.

Keywords: Employees' Perceptions, Human Resource Management, High-Performance Work Systems, Knowledge-Sharing, Innovative Behaviour, Work Engagement

How to cite this article: Hernández P, Morales L, Torres J, Diego Navarro D. The Influence of Employee Engagement and Knowledge-Sharing on the Link between High-Performance Work Systems and Innovative Behavior. Asian J Indiv Organ Behav. 2024;4:163-75. https://doi.org/10.51847/AEW5rsQp3M

Received: 04 November 2023; **Revised:** 08 February 2024; **Accepted:** 11 February 2024
Corresponding author: Javier Torres
E-mail ✉ javier.torres.organization@gmail.com

Introduction

Universities and research institutions, as knowledge-driven organisations, rely heavily on key knowledge processes such as creation, dissemination, and organizational learning [1]. Individual faculty members and researchers play a central role in these processes, particularly in knowledge generation and dissemination through scholarly publications [2]. In this context, learning is critical for fostering both academic excellence and innovation [3]. Knowledge-sharing is a prerequisite for learning, especially in academic environments where collaboration and information exchange are essential for professional advancement [4].

In such institutions, knowledge-sharing significantly influences collaborative research outcomes [3]. Fullwood *et al.* [5] identify factors that encourage knowledge-sharing in universities, including a collaborative culture, frequent in-person interactions, and mutual trust. Engagement is another key determinant, as studies indicate that employees are more likely to share knowledge when they are highly engaged [6, 7]. Engaged employees are also associated with higher organisational performance, greater job satisfaction, and enhanced creativity [8]. Moreover, the deployment of strategic human resource (HR) practices is pivotal in stimulating creativity and, consequently, innovative behaviour (IB), particularly in service-oriented organisations [9]. This has led to growing interest in examining the effects of HRM systems on employees' IB [10-

14], as well as the underlying mechanisms of this relationship [13, 15], with engagement being highlighted as a significant explanatory factor.

Accordingly, understanding how HR practices drive knowledge-related processes—especially knowledge-sharing—has become a central focus in contemporary research [16, 17]. Although much of the existing literature focuses on private-sector organisations [2], there is increasing recognition of the importance of knowledge management in public-sector settings [18, 19]. Despite this, empirical studies on knowledge management in universities remain limited [2, 20].

Universities face mounting pressure to generate innovations and produce new knowledge. Yet, many institutions lack formal knowledge-management strategies [20]. Creating supportive contexts and strategic initiatives is essential to enhance knowledge processes within universities [21]. In the Spanish higher education context, there has been a shift from a general reluctance toward innovation to an environment where academics increasingly view innovation and entrepreneurship as integral to their roles [22]. This trend has been reinforced by the 2015 Spanish University Strategy, which emphasizes knowledge transfer and technological development as core elements of universities' missions [23].

Structurally, Spanish universities are highly formalized and stable, with employees enjoying significant job security and HR policies largely unchanged over the past decade. This stability is influenced by Spain's legislative framework, which establishes a unitary and homogeneous university system, resulting in similar organisational structures across institutions [24]. As noted by Sanchez-Barrioluengo [24], "although universities depend on regional government, a model of homogeneity prevails within the Spanish Higher Education system at the national level."

Nevertheless, Spanish universities have been affected by crises, economic recessions, and environmental changes [25]. These challenges have led to reductions in employee purchasing power, increased workloads due to sector competitiveness and workforce ageing, and recognition systems that are overly tied to individual performance. In this context, engagement and knowledge-sharing, which support professional and intellectual growth, are vital tools for motivating and retaining talent, making them central to this study.

Building on these insights, this research aims to clarify the extent to which employee engagement and knowledge-sharing function as mediating mechanisms between HR systems and IB. Furthermore, the study highlights the sequential influence of engagement followed by knowledge-sharing in explaining the relationship between HRM practices and innovative behaviour.

Theoretical Framework

The relationship between HRM systems and innovative behaviour

The link between high-performance work systems (HPWS) and innovative behaviour (IB) has emerged as a central research topic [9, 15]. Innovative behaviour is widely regarded as a critical driver of organisational effectiveness, efficiency, and long-term survival [26]. At the individual level, IB describes employees' capacity to generate novel ideas and perspectives and to translate them into actual innovations.

HPWS represent coherent bundles of human resource practices aimed at enhancing organisational performance by improving employees' abilities, motivation, and opportunities to contribute [27]. Although scholars do not fully agree on the exact composition of HPWS [28], leading studies typically identify core practices such as selective recruitment, extensive training, career development opportunities, performance-based appraisal, incentive compensation, and employment security [15].

When examining the influence of HPWS on IB, it is essential to distinguish between the intended design and managerial implementation of these practices and employees' actual perceptions of them [29-31]. Employees' subjective experience of HR practices—for instance, whether they view training as valuable and relevant—ultimately determines the practices' impact on attitudes and behaviours.

A growing body of research shows that HPWS can stimulate knowledge creation and innovation-related behaviours [13-15, 32, 33]. Prior studies consistently identify several mediating mechanisms, including knowledge and learning processes, motivational factors, and employee engagement [11, 12, 29, 34, 35]. Consequently, the relationship between HPWS and IB is generally considered indirect rather than direct. The present study therefore focuses on deepening our understanding of these mediating processes and exploring whether they operate sequentially to better explain how employees' perceptions of HPWS ultimately foster innovative behaviour.

The mediating role of employee engagement in the HPWS–innovative behaviour relationship

Since Kahn's [36] foundational contribution, the construct of employee engagement has received increasing theoretical and empirical attention, resulting in a variety of definitions, measurement approaches, and theoretical models [8, 37-39]. Schaufeli and Bakker [39] conceptualise work engagement as a positive, fulfilling, work-related state of mind characterised by vigour, dedication, and absorption. Building on this view, Alfes *et al.* [29] describe engagement as a positive attitude toward the organisation and its values, in which employees invest intellectual effort, experience positive emotions, and form meaningful connections with colleagues.

Most studies examining how HR practices influence performance rely on Social Exchange Theory [11, 29, 40], which suggests that HRM systems and employee engagement are deeply interconnected [29]. High-performance work systems (HPWS) are designed to provide supportive work environments that encourage engagement and productivity [41-44]. When employees perceive that their organization is genuinely investing in them through HR policies and managerial support, they tend to respond with higher engagement and improved performance [11]. Similarly, Huang *et al.* [43] argue that HPWS create expectations for employees to reciprocate with greater commitment and dedication.

Research consistently shows that engagement is positively linked to both individual performance [11, 45, 46] and innovative behaviors (IB) [29]. Because engaging in IB requires effort, employees are more likely to demonstrate it when they feel energized, focused, and challenged by their work [10], indicating a direct positive association between engagement and IB.

Further inquiry is needed to understand the pathways through which HRM practices shape behaviors like IB. For instance, Rabiul *et al.* [47] suggest that the effect of HR practices on engagement is indirect, operating through psychological states such as feelings of safety and availability. Other studies provide evidence that engagement acts as a mediator between HPWS and positive work outcomes [29, 44]. Engagement thus appears to be a critical mechanism linking HPWS to IB, given its influence on a wide spectrum of behavioral and attitudinal outcomes [46, 48, 49].

Specifically, engagement has been shown to mediate the relationship between supervisory support and IB [10], as perceived organizational support and sufficient job resources drive IB through heightened engagement. Employees who are highly engaged are more likely to introduce and experiment with novel ideas. Similarly, Salanova and Schaufeli [38] found that engagement fully mediates the impact of job resources on proactive behavior, which is closely related to IB, reflecting initiative and pursuit of challenges. Garg and Sharma [50] also demonstrated, using Social Exchange Theory, that engagement mediates the effect of HPWS on job performance.

Alfes *et al.* [11, 29] emphasize that employee engagement is crucial for translating HR practices into IB, as engaged employees are motivated to perform efficiently and explore innovative approaches. Huang *et al.* [43] note that HPWS shape the workplace climate, affecting moods, satisfaction, engagement, and subsequent behaviors. Similarly, Stirpe *et al.* [49] confirm that engagement mediates the link between satisfaction with HR practices and extra-role performance.

Based on these findings, work engagement is expected to mediate the connection between employees' perceptions of HPWS and IB. Employees who clearly recognize and understand HPWS are more likely to experience enthusiasm, energy, and positive workplace relationships, which, in turn, drive them to contribute novel ideas and behaviors, supported by the tools and resources provided by the organization. Accordingly, we propose the following hypothesis:

H1. Work engagement mediates the relationship between employees' perceptions of HPWS and IB.

The Role of Knowledge-Sharing in Connecting Employee Perceptions of HPWS to IB

Knowledge-sharing has been defined in multiple ways, reflecting its complex nature [34, 51]. Van den Hooff and de Ridder [52] describe it as the collaborative exchange of knowledge that allows new knowledge to emerge. HR practices, particularly HPWS, can play a crucial role in creating conditions that encourage such exchanges. Within the Ability–Motivation–Opportunity (AMO) framework, Radaelli *et al.* [12] emphasize that employees must see clear benefits in sharing knowledge to be motivated to do so, possess the necessary skills, and have organizational structures that enable this process. In line with this, Almadana *et al.* [53] highlight that fostering a supportive environment for knowledge-sharing is an explicit objective of HR practices, and Kuvaas *et al.* [54] show that intensive training—especially when aimed at shaping attitudes and values—facilitates employees' willingness and ability to share knowledge. Carmeli *et al.* [55] further suggest that engaging in knowledge-sharing promotes critical and creative thinking, which in turn helps generate novel ideas. Given that innovative behavior (IB) relies on creativity, proactivity, and risk-taking [32], knowledge-sharing emerges as a key enabler of IB.

Empirical support for the connection between knowledge-sharing and IB is still limited. Sousa *et al.* [56] argue that innovation originates at the individual level, where knowledge is processed and transformed into actionable ideas. Knowledge-sharing involves combining, adapting, and applying knowledge in new ways, and individuals engaged in this process are more likely to experiment with novel strategies and opportunities [12]. Recent research by Anser *et al.* [57] confirms that employees who actively share knowledge are more likely to exhibit IB, particularly in small business settings.

Regarding its mediating role, evidence suggests that knowledge-sharing can bridge HR practices and innovation outcomes. Chen and Huang [34] found that knowledge management capabilities, including knowledge-sharing, mediate the effect of strategic HR practices on innovation performance. More recent literature emphasizes that the influence of knowledge on individual employees is central to understanding how HR practices translate into knowledge-driven outcomes, including IB [30, 58-60]. This highlights the relevance of examining knowledge-sharing at the individual level, especially in diverse organizational contexts [60].

Studies adopting the AMO perspective further confirm this mediating role. Bhatti *et al.* [61] report that knowledge-sharing mediates the relationship between HPWS and innovation, particularly through practices that enhance employee ability and motivation. Anser *et al.* [62] similarly show that knowledge-sharing mediates the link between knowledge-management infrastructure capabilities (KMICs)—defined as mechanisms that support organizational learning—and IB, supported by HR

practices such as autonomy, participation, training, and performance-linked rewards. Nguyen and McGuirk [63] also find that commitment mediates the effects of autonomy and supervisor/co-worker support on IB.

Based on these findings, we propose that employees' perceptions of HPWS promote IB through knowledge-sharing: when employees perceive HPWS as supportive, they are more likely to share knowledge, which in turn stimulates innovative behaviors. Thus, we hypothesize:

H2. Knowledge-sharing at the individual level mediates the relationship between perceived HPWS and IB.

The Sequential Mediating Role of Engagement and Knowledge-Sharing in the HPWS–IB Link

A key contribution of this study lies in examining the sequential mediating effect of work engagement and knowledge-sharing in the relationship between employees' perceptions of HPWS and IB. Research exploring the connection between engagement and knowledge-sharing remains limited [6, 64, 65]. For instance, Jacobson *et al.* [65] analyzed organizational factors that drive researchers' involvement in knowledge transfer at universities, highlighting that HR practices—such as promotion policies—combined with long-term strategies for developing knowledge transfer infrastructure (including access to resources and training) are essential for prioritizing engagement in knowledge-sharing activities.

Work engagement fosters a collaborative climate grounded in trust, which supports broader organizational objectives such as innovation, change, and knowledge-sharing [66]. Empirical studies also show that engagement positively influences knowledge-sharing behaviors [6, 7, 64]. For example, Yadav *et al.* [67] demonstrate that transformational leadership encourages knowledge-sharing among freelancers by enhancing engagement, positioning engagement as an antecedent of knowledge-sharing. Similarly, Fullwood and Rowley [68], in a qualitative study of nonprofit and volunteer organizations, identify engagement, culture, socialization, and a positive work environment as drivers of both formal and tacit knowledge-sharing. Conversely, Fait *et al.* [69] argue that creating an environment conducive to knowledge-sharing can itself foster engagement, indicating a reverse causal pathway from what is proposed here.

Chen *et al.* [6] provide three primary explanations for why engagement promotes knowledge-sharing: (a) employees must be deeply involved in their work to accumulate sufficient expertise to share; (b) sharing knowledge requires that employees care about their work and perceive extra effort as worthwhile; and (c) engaged employees exhibit enthusiasm that motivates them to share knowledge to improve performance [6]. Engagement theory similarly suggests that highly engaged employees, being fully absorbed and committed, are more likely to engage in knowledge-sharing [70]. However, Ford *et al.* [70] also note that engagement can have potential downsides: through the lens of Adaptive Costs Theory [71, 72], highly engaged employees may focus so intensely on their primary tasks that they deprioritize additional tasks such as knowledge-sharing, which could be perceived as overly demanding.

Based on this reasoning, HPWS are expected first to enhance employee engagement [11, 43], which then encourages employees to share knowledge [6], ultimately fostering IB. This sequence forms the basis for the third theoretical proposition:

H3. Work engagement and knowledge-sharing sequentially mediate the relationship between employees' perceptions of HPWS and IB.

Figure 1 presents the conceptual model and the hypothesized relationships examined in this study.

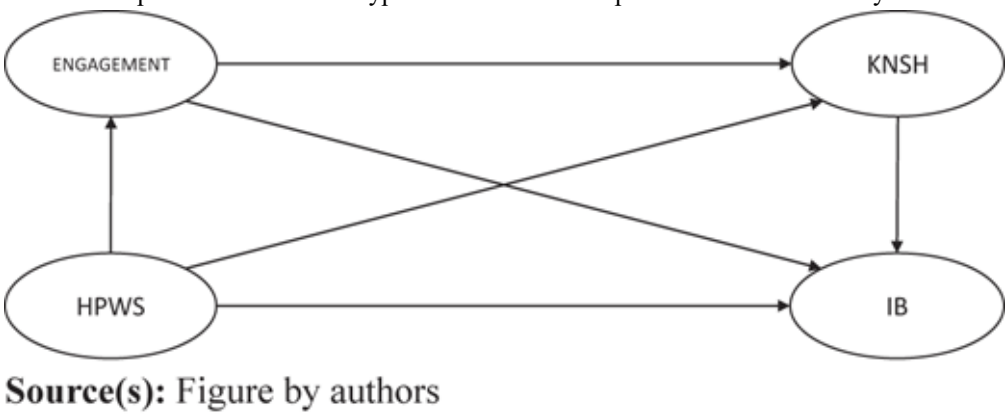


Figure 1. Theoretical framework

Research Methodology

Procedure and sample

A survey was designed to assess the constructs examined in this study, with all variables measured using multi-item seven-point Likert scales adapted from prior research [33, 54]. The questionnaire underwent a pre-test with thirty-one participants from the same faculty to ensure clarity of the items—particularly due to translation—and to verify that the scales effectively captured the intended information. Insights from the pre-test were used to refine the survey before its distribution. The final

version was emailed to approximately 2,500 employees from faculties and research institutes that agreed to participate, all affiliated with the University of Valencia, selected due to the nature of its research work and its prominence in international rankings. Primary data were collected from individuals as the unit of analysis. The survey targeted scholars and researchers across nine faculties and ten research institutes (out of the university's total of eighteen faculties and twelve institutes). The final dataset consisted of 304 valid responses, corresponding to a response rate of 12%, collected during 2014–2015.

Control variables were gathered from respondents and cross-checked against secondary sources. Non-response bias was assessed by comparing the demographic characteristics of respondents with the overall population, focusing on gender and educational level; no significant differences were found, supporting the representativeness of the sample. Common-method bias was examined using the procedure proposed by Kock [73] for PLS-SEM, with all variance inflation factor (VIF) values below 3.3, indicating that common-method bias was not a concern.

Measures

HPWS were measured using a scale adapted from Gaertner and Nollen [74], Vandenberg *et al.* [75], and Sun *et al.* [76], covering five HR practices: training and development (4 items), pay for performance (4 items), career development (3 items), job security (2 items), and participation in decision-making (4 items). Work engagement was assessed using the 9-item short version of the Utrecht Work Engagement Scale [39]. IB was measured with six items adapted from Scott and Bruce [26]. Knowledge-sharing was measured using an 8-item scale from De Vries *et al.* [77], as applied by Kuvaas *et al.* [54], capturing both the provision of knowledge to colleagues and acquisition of knowledge from them. All scales have been widely used in prior research [33].

Control variables included educational level (Dummy_1: 1 = degree; 0 = other higher studies; Dummy_2: 1 = PhD; 0 = lower studies), gender (1 = male; 0 = female), position (Dummy_3: 1 = teaching and research; 0 = technical or trainee researchers), and tenure. These were included because prior studies have indicated their potential impact on IB [26]. **Table 1** presents descriptive statistics and correlations for all variables.

Table 1. Descriptive and correlation analysis

	Mean	SD	1	2	3	4	5	6	7	8
1. HPWS	4.43	1.08								
2. Engagement	5.36	1.07	0.29**							
3. KNSH	5.43	1.02	0.16**	0.36**						
4. IB	5.11	1.141	0.25**	0.52**	0.31**					
5. Tenure	13.81	9.91	0.25**	0.10	−0.00	0.03				
6. Gender	–	–	0.09	0.01	0.01	0.02	0.10			
7. D1_Education	–	–	−0.07	−0.14*	0.01	−0.14*	−0.31**	−0.17**		
8. D2_Education	–	–	0.09	0.12*	−0.04	0.16**	0.40**	0.17**	−0.84**	
9. D3_Position	–	–	0.1	0.11	−0.09	−0.05	0.36**	0.14*	0.36**	0.45**

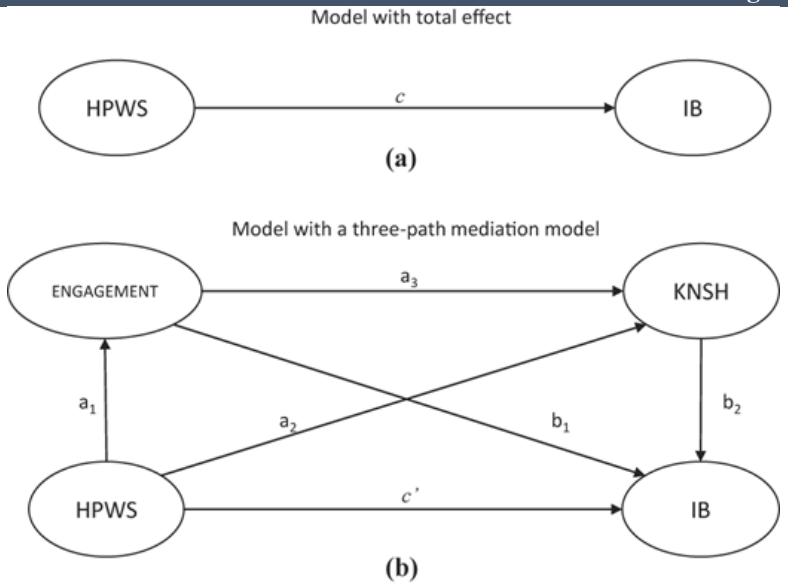
Note(s): *$p < 0.05$ and **$p < 0.01$

Source(s): Table by authors

Data Analysis

To examine the proposed hypotheses, analyses were conducted using SmartPLS 3.2 [78]. A bootstrapping procedure with 5,000 resamples was employed to generate standard errors, confidence intervals, and p-values, which allowed for an assessment of the significance of each parameter. Mediation hypotheses (H1–H3) were evaluated following the procedures recommended by Preacher and Hayes [79] and Castro and Roldán [80].

The study specifically tested a three-step mediation framework, assessing both direct and indirect effects [80-82]. The relationships and mediation paths hypothesized in this model are presented in **Figure 2**.



Source(s): Figure by authors

Figure 2. Three-path mediation framework.

In **Figure 2a**, the total influence of employees' perceptions of HPWS on innovative behavior (IB) is represented, with c indicating the overall path coefficient from HPWS to IB. This total effect emerges from both direct and indirect pathways [81]. As detailed in **Figure 2b**, the total effect can be decomposed into the direct effect plus multiple indirect effects, with indirect effects calculated by multiplying the coefficients along each mediating pathway [83]. Specifically, c = c' + a1b1 + a2b2 + a1a3b2, where the last three terms correspond to distinct indirect effects that together form the total indirect effect [81], while c' represents the direct impact of HPWS perceptions on IB after accounting for the mediating roles of engagement and knowledge-sharing [82]. This model also allows the investigation of sequential mediation through both mediators (a1a3b2) [84]. Bootstrapping was applied to derive standard errors and t-values.

Results

Measurement model

The properties of the measurement model were assessed based on the recommendations for partial least squares path modeling (PLSPM) by Hair *et al.* [85]. All indicators loaded significantly onto their respective constructs ($p < 0.01$) with standardized loadings of at least 0.7, demonstrating strong reliability [86]. **Table 2** provides the results for internal consistency and discriminant validity. Internal consistency was evaluated via composite reliability (CR), while convergent validity was assessed using average variance extracted (AVE). All constructs surpassed the 0.7 CR benchmark [87], with values ranging from 0.83 to 0.94 [88], and all AVE values met or exceeded 0.50, supporting the convergent validity of the measurement model.

Table 2. Assessment of Convergent and Discriminant Validity

	AVE	CR	1	2	3	4
1. HPWS	0.50	0.83	*0.71*			
2. Engagement	0.85	0.94	0.29**	*0.92*		
3. KNSH	0.64	0.91	0.16**	0.36**	*0.8*	
4. IB	0.60	0.88	0.25**	0.52**	0.31**	*0.77*

Note: The diagonal entries represent the square roots of the AVE values, while the values below the diagonal show the correlations among constructs.
Source: Table compiled by the authors

Discriminant validity was evaluated using two approaches. First, we verified that the square root of each construct's AVE **(Table 2)** exceeded all correlations between that construct and the others. In addition, we applied the more recent heterotrait–monotrait ratio (HTMT) criterion proposed by Henseler *et al.* [89], which requires HTMT values to remain below 0.85 [90]. As presented in **Table 3**, all HTMT values met this threshold. Furthermore, we ensured that each indicator loaded more strongly on its intended construct than on any other constructs, confirming appropriate item assignment and factor structure [91].

Table 3. HTMT values

	1	2	3
1. HPWS			

2. Engagement	0.339		
3. KNSH	0.228	0.391	
4. IB	0.287	0.559	0.361

Source(s): Table by authors

Structural model

The structural relationships were examined using partial least squares path modeling (PLSPM) implemented in SmartPLS 3.2. All constructs were modeled reflectively, with employees' perceptions of HPWS and work engagement specified as higher-order (second-order) constructs, whereas innovative behavior (IB) and knowledge-sharing were treated as single-level (first-order) constructs.

To evaluate the model's predictive accuracy, Stone–Geisser's Q^2 values were calculated via blindfolding [85]. **Table 4** shows that each endogenous variable had a Q^2 greater than zero, confirming the model's ability to predict these outcomes [92]. Furthermore, a post hoc power assessment using G*Power 3 [93] confirmed that the sample size was more than sufficient for detecting R^2 deviations from zero, with statistical power exceeding 95%, well above the commonly accepted 80% benchmark.

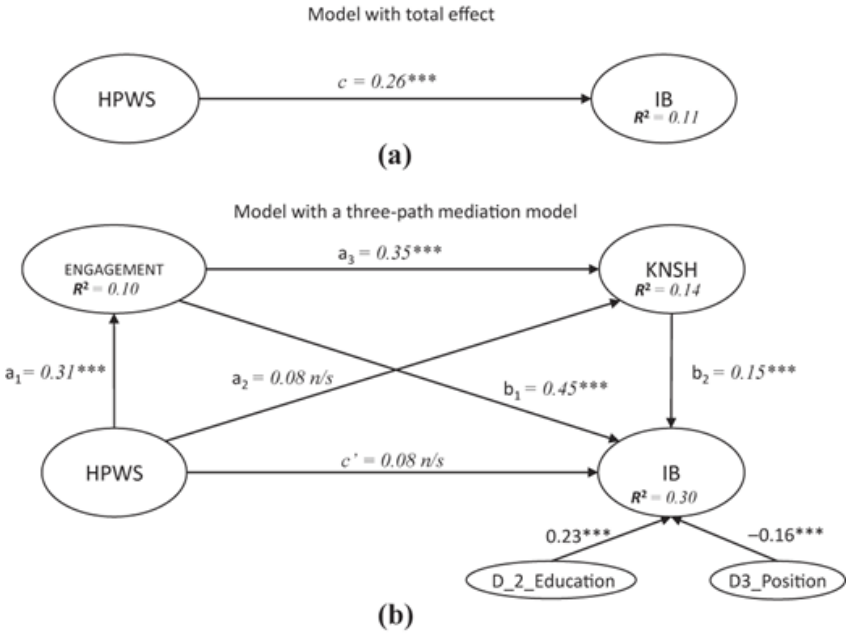
Table 4. Assessment of the Structural Model

	Q^2	R^2
Engagement	0.06	0.10
KN sharing	0.08	0.14
IB	0.16	0.30

Source: Table compiled by the authors

The proportion of variance in the dependent latent constructs explained by the model was assessed using R^2 values **(Table 4)**. Following Falk and Miller's [94] recommendation, R^2 values should exceed 0.10. As indicated in **Table 4**, all constructs met or surpassed this benchmark, with IB showing $R^2 = 0.30$, work engagement $R^2 = 0.10$, and knowledge-sharing $R^2 = 0.14$.

The results presented in **Table 5** and **Figure 3** reveal that four of the six hypothesized direct paths illustrated in **Figure 2b** reached statistical significance. Notably, the direct path from employees' perceptions of HPWS to IB was non-significant ($\beta = 0.08$, $p > 0.05$), consistent with prior research (e.g., Escribá-Carda *et al.* [15]), suggesting that HPWS influences IB primarily through indirect mechanisms rather than a direct effect.



Source(s): Figure by authors

Figure 3. Results of the Three-Path Mediation Structural Model

Table 5. Impact on Endogenous Constructs

Effects on endogenous variables	*T*-value	Direct effect
HPWS→Engagement	5.49	0.31***
Engagement→KNSH	5.05	0.35***
KNSH→IB	2.38	0.15**
HPWS→KNSH	1.13	0.08 n/s
Engagement → IB	8.29	0.45***

HPWS→IB	1.59	0.08 n/s
D_2_Education → IB	2.6	0.23**
D3_Position → IB	3.11	−0.16***

Note: *p < 0.05; **p < 0.01; ***p < 0.001. Only D_2 and D_3 had statistically significant impacts on IB.
Source: Authors' compilation

Mediation hypotheses (H1–H3) were examined following the methods proposed by Preacher and Hayes [79] and Taylor *et al.* [82]. Indirect effects were analyzed through the mediating variables—work engagement and knowledge-sharing—as reported in **Table 6**. In addition, the total (c) and direct (c') effects of employees' perceptions of HPWS on IB were calculated. **Figure 3a** and **Table 6** indicate that HPWS perceptions have a significant overall influence on IB; however, once the mediators are incorporated **(Figure 3b)**, the direct influence of HPWS on IB becomes non-significant, highlighting the mediating role of engagement and knowledge-sharing.

The mediation analysis revealed that only some paths were significant. Work engagement significantly carried the effect of HPWS to IB (H1: a1b1), whereas knowledge-sharing alone did not show a significant mediating impact (H2: a2b2). Notably, a combined sequential pathway was supported, showing that HPWS perceptions enhance engagement and knowledge-sharing, which together lead to increased IB (H3: a1a3b2).

Table 6. Overview of Mediation Analysis Results

Total effect of HPWS on IB		**Direct effect of HPWS on IB**			**Indirect effect of HPWS on IB**		
Coefficient	***t-value***	***Coefficient***		***t-value***		***Point estimate***	***t-value***
0.25***	4.54	Direct effect:c'	0.08 n/s	1.59	Total	0.17***	4.79
					H1: a_1b_1 (via Engagement)	0.14***	4.44
					H2: a_2b_2 (via KNSH)	0.01 n/s	0.94
					H3: $a_1a_3b_2$ (via Eng + KNSH)	0.02 *	1.74

Note(s): Statistical significance is indicated as *p < 0.05; **p < 0.01; ***p < 0.001.
Source(s): Authors' table.

Discussion and Implications

This study examined how engagement and knowledge-sharing mediate the relationship between employees' perceptions of HPWS and IB, including the potential for sequential mediation by these two factors. Regarding the isolated mediating role of engagement, prior research [10, 11, 38, 43, 49] confirms that work engagement links HRM practices with employees' attitudes and behaviors, including IB [29]. Our findings align with this literature **(Figure 3b and Table 5)**, indicating that, in universities, engagement is essential for HPWS to positively influence IB. Researchers who perceive practices such as continuous training programs, international research exchanges, consultancy projects, participative decision-making, job security, and career development positively are more likely to become engaged and intrinsically motivated [2, 5], which increases their likelihood of generating innovative ideas in their work. It is worth noting that recent legislation and economic constraints in the Spanish public higher education sector may have dampened enthusiasm among civil servants, yet relative to other economic sectors, working conditions remain favorable, suggesting that HRM practices—through job security, autonomy, and participation—can still effectively foster engagement and, subsequently, IB.

While empirical evidence on the impact of individual knowledge-sharing on IB remains limited [95], recent studies have begun to explore this relationship [57]. Our research contributes new empirical support for knowledge-sharing as a driver of IB. Previous studies have indicated that HRM practices enhance knowledge mechanisms, including knowledge-sharing [96], and that knowledge-sharing mediates the HPWS–IB link [34, 61]. However, our results do not confirm these relationships **(Tables 4 and 5)**. Although knowledge-sharing is positively and significantly associated with IB, HPWS does not significantly influence knowledge-sharing, offering no support for its mediating role, a finding partially echoed by Bhatti *et al.* [61] regarding opportunity practices within the AMO framework.

Several factors may explain this outcome. First, HRM practices in Spanish public universities tend to reward individual performance rather than collective efforts, fostering competitive rather than cooperative behaviors, which may inhibit knowledge-sharing. Second, a lack of cultural emphasis and formal training in knowledge-sharing further limits engagement in this practice. Third, excessive bureaucratic requirements in research activities may discourage knowledge-sharing, consistent with adaptive cost theory [70, 97]. These findings suggest that Spanish governmental bodies responsible for university compensation systems should redesign incentives to better support collective work.

Regarding the sequential mediation of knowledge-sharing and engagement in the link between HPWS and IB, prior research has emphasized the pivotal role of engagement in fostering knowledge-sharing [6, 7, 64]. Our findings align with this evidence, indicating that work engagement and knowledge-sharing act as sequential mediators between perceived HPWS and IB **(Table 5)**. Specifically, HPWS enhance researchers' engagement levels, which in turn encourages greater knowledge-sharing, as

motivated and enthusiastic individuals are more inclined to exchange and seek out new knowledge, ultimately influencing their innovative outputs. Thus, to mitigate knowledge-hiding—a topic of increasing interest in contemporary knowledge management literature [97]—it is crucial to cultivate knowledge-sharing behaviors among scholars, which in turn bolster IB. Although our data were collected before the pandemic, the economic and institutional context—characterized by declining purchasing power for academics and increased performance monitoring—parallels the current economic challenges. Therefore, our results remain applicable, considering the stability of HR policies and staff within the institution [24]. Theoretically, this study extends prior work by underscoring that work engagement is a necessary precursor to knowledge-sharing, which helps explain the HPWS–IB relationship. This suggests the benefit of integrating multiple, complementary frameworks such as knowledge management and HRM to better understand the drivers of individual-level innovation.

From a practical standpoint, our findings provide guidance for shaping HRM policies. Notably, we did not find a direct link between researchers' perceptions of HPWS and knowledge-sharing. This indicates that HRM strategies in public universities and governmental institutions should be adapted to actively facilitate both knowledge-sharing and IB. In modern academic settings, this is particularly important. Spanish universities typically maintain flat organizational structures promoting participation and teamwork, yet current pay-for-performance systems largely reward individual achievements rather than collective outcomes. Revising these systems to account for team contributions—such as jointly authored publications—while avoiding penalties for collaborative work would be beneficial.

Moreover, although teamwork is promoted, it often remains confined within specific departments or disciplines. To enhance interdepartmental knowledge-sharing, HRM practices should focus on lateral coordination mechanisms, such as forming multidisciplinary research teams, developing graduate and postgraduate programs that bring together scholars from diverse fields, and implementing IT tools that facilitate communication and knowledge exchange across organizational boundaries.

Conclusions

In innovative environments such as universities, where this study was conducted, it is crucial for individuals to be actively engaged with their institution and, as a result, participate in knowledge-sharing through the various channels provided. This dual sequential effect is expected to ultimately enhance innovative behavior (IB). The proposed sequential mediation suggests that employees' perceptions of high-performance work systems (HPWS) influence their psychological state—characterized by energy, enthusiasm, and commitment—which, in turn, encourages them to adopt knowledge-sharing practices and engage in IB promoted by the organization. Therefore, knowledge-intensive organizations aiming to stimulate IB should develop and implement HR practices that both elevate overall employee engagement and minimize obstacles to knowledge-sharing. This principle extends beyond universities to any organization where knowledge is a critical competitive asset.

Our hypotheses were tested within a knowledge-intensive setting involving researchers and faculty members, where sharing knowledge is essential for driving innovation (e.g., novel teaching methods, scientific findings, protocols, or applications). The findings indicate that for knowledge-sharing to occur at the individual level, employees must accurately perceive HPWS and feel genuinely engaged in their work. Beyond the academic context, these results highlight the importance of ensuring alignment between intended and perceived HR practices. Additionally, our study confirms that work engagement is a prerequisite for both knowledge-sharing and IB, emphasizing the need for carefully designed and well-implemented HPWS that foster employee motivation and commitment. The primary contribution of this research lies in demonstrating the sequential mediating role of engagement and knowledge-sharing in the relationship between perceived HPWS and IB from an individual perspective.

Despite these contributions, several limitations warrant future investigation. First, subsequent studies could explore additional HR practices (e.g., family-oriented or wellbeing-focused initiatives) to gain a more holistic view of the HR systems implemented. Examining other respondent groups, such as research teams, may also open new avenues for research. Moreover, longitudinal data would be beneficial to verify the causal relationships proposed. Finally, qualitative approaches (e.g., case studies) could build on our quantitative findings to provide deeper insights into how HPWS, engagement, knowledge-sharing, and IB interact. Specifically, it would be valuable to investigate the influence of internal communication strategies, organizational culture, and investments in collaborative IT tools on these dynamics.

Acknowledgments: None

Conflict of interest: None

Financial support: None

Ethics statement: None

References

1. Trifonova A, Ronchetti M. Hoarding content for mobile learning. Int J Mob Commun. 2006;4(4):459-76.
2. Fullwood R, Rowley J. An investigation of factors affecting knowledge sharing amongst UK academics. J Knowl Manag. 2017;21(5):1254-71.
3. Tan CNL. Enhancing knowledge sharing and research collaboration among academics: The role of knowledge management. High Educ. 2016;71(4):525-56.
4. Patel M, Ragsdell G. To share or not to share knowledge: An ethical dilemma for UK academics. J Knowl Manag Pract. 2011;12(2):420-27.
5. Fullwood R, Rowley J, McLean J. Exploring the factors that influence knowledge sharing between academics. J Furth High Educ. 2019;43(8):1051-63.
6. Chen ZJ, Zhang X, Vogel D. Exploring the underlying processes between conflict and knowledge sharing: a work-engagement perspective. J Appl Soc Psychol. 2011;41(5):1005-33. doi:10.1111/j.1559-1816.2011.00745.x
7. Tamta V, Rao MK. Linking emotional intelligence to knowledge sharing behaviour: Organizational justice and work engagement as mediators. Glob Bus Rev. 2017;18(6):1580-96.
8. Harter JK, Schmidt FL, Hayes TL. Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. J Appl Psychol. 2002;87(2):268-79.
9. Laursen K, Foss NJ. HRM practices and innovation. Handbook of innovation management: Oxford University Press; 2013. p. 506-29.
10. Agarwal UA, Datta S, Blake-Beard S, Bhargava S. Linking LMX, innovative work behaviour and turnover intentions: the mediating role of work engagement. Career Dev Int. 2012;17(3):208-30. doi:10.1108/13620431211241063
11. 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 Manag. 2013;52(6):839-59. doi:10.1002/hrm.21512
12. Radaelli G, Lettieri E, Mura M, Spiller N. Knowledge sharing and innovative work behaviour in healthcare: A micro-level investigation of direct and indirect effects. Creat Innov Manag. 2014;23(4):400-14.
13. Sanders K, Lin CH. Human resource management and innovative behaviour: Considering interactive, informal learning activities. Human resource management, innovation and performance: Palgrave Macmillan; 2016. p. 32-47.
14. Sanders K, Moorkamp M, Torka N, Groeneveld S, Groeneveld G. How to support innovative behavior? The role of LMX and satisfaction with HR practices. Technol Invest. 2010;1:59-68.
15. Escriba-Carda N, Balbastre-Benavent F, Canet-Giner MT. Employees' perceptions of high-performance work systems and innovative behaviour: The role of exploratory learning. Eur Manag J. 2017;35(2):273-81.
16. 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):544-60.
17. Sergeeva A, Andreeva T. Knowledge sharing research: Bringing context back. J Manag Inq. 2016;25(3):240-61.
18. Brown MM, Brudney JL. Learning organizations in the public sector? A study of police agencies employing information and technology to advance knowledge. Public Adm Rev. 2003;63(1):30-43. doi:10.1111/1540-6210.00262
19. Singh Sandhu M, Kishore Jain K, Umi Kalthom bte Ahmad I. Knowledge sharing among public sector employees: Evidence from Malaysia. Int J Public Sect Manag. 2011;24(3):206-26.
20. Veer-Ramjeawon P, Rowley J. Embedding knowledge management in higher education institutions (HEIs): A comparison between two countries. Stud High Educ. 2020;45(11):2324-40.
21. Sanchez-Barrioluengo M, Benneworth P. Is the entrepreneurial university also regionally engaged? Analysing the influence of university's structural configuration on third mission performance. Technol Forecast Soc Change. 2019;141:206-18.
22. Miranda FJ, Chamorro-Mera A, Rubio S. Academic entrepreneurship in Spanish universities: An analysis of the determinants of entrepreneurial intention. Eur Res Manag Bus Econ. 2017;23(2):113-22.
23. Arias-Coello A, Simon-Martin J, Gonzalo Sanchez-Molero JL. Mission statements in Spanish universities. Stud High Educ. 2020;45(2):299-311. doi:10.1080/03075079.2018.1512569
24. Sanchez-Barrioluengo M. Articulating the 'three-missions' in Spanish universities. Res Policy. 2014;43(10):1760-73.
25. Pascual Jimeno A, Conejero Lopez S. La desmotivacion del profesorado universitario y su relacion con variables sociodemograficas, laborales y de personalidad. Apuntes Psicol. 2015;33(1):5-16.
26. Scott SG, Bruce RA. Determinants of innovative behavior: A path model of individual innovation in the workplace. Acad Manage J. 1994;37(3):580-607.
27. Van de Voorde K, Beijer S. The role of employee HR attributions in the relationship between high-performance work systems and employee outcomes. Hum Resour Manag J. 2015;25(1):62-78.
28. Boxall PF, Purcell J. Strategy and Human Resource Management. Basingtoke and New York: Palgrave Macmillan; 2011.

29. Alfes K, Shantz AD, Truss C, Soane EC. The link between perceived human resource management practices, engagement and employee behaviour: a moderated mediation model. Int J Hum Resour Manag. 2013;24(2):330-51. doi:10.1080/09585192.2012.679950
30. Bowen DE, Ostroff C. Understanding HRM–firm performance linkages: the role of the strength of the HRM system. Acad Manag Rev. 2004;29(2):203-21. doi:10.5465/amr.2004.12736076
31. Ostroff C, Bowen DE. Reflections on the 2014-decade award: Is there strength in the construct of HR system strength? Acad Manage Rev. 2016;41(2):196-214.
32. Bednall TC, Sanders K, Runhaar P. Stimulating informal learning activities through perceptions of performance appraisal quality and human resource management system strength: a two-wave study. Acad Manag Learn Educ. 2014;13(1):45-61. doi:10.5465/amle.2012.0162
33. Kehoe RR, Wright PM. The impact of high-performance human resource practices on employees' attitudes and behaviors. J Manag. 2013;39(2):366-91.
34. Chen CJ, Huang JW. Strategic human resource practices and innovation performance—the mediating role of knowledge management capacity. J Bus Res. 2009;62(1):104-14. doi:10.1016/j.jbusres.2007.11.016
35. Jyoti J, Rani A. High performance work system and organisational performance: Role of knowledge management. Pers Rev. 2017;46(8):1770-95.
36. Kahn WA. Psychological conditions of personal engagement and disengagement at work. Acad Manage J. 1990;33:692-724.
37. Macey WH, Schneider B. The meaning of employee engagement. Ind Organ Psychol. 2008;1(1):3-30.
38. Salanova M, Schaufeli WB. A cross-national study of work engagement as a mediator between job resources and proactive behaviour. Int J Hum Resour Manag. 2008;19(1):116-31.
39. Schaufeli W, Bakker A. Utrecht work engagement scale: Preliminary manual. Occupational Health Psychology Unit, Utrecht University; 2004.
40. Jiang K, Takeuchi R, Lepak D. Where do we go from here? New perspectives on the black box in strategic human resource management research. J Manag Stud. 2013;50(8):1448-80.
41. Cooke FL, Cooper B, Bartram T, Wang J, Mei H. Mapping the relationships between high-performance work systems, employee resilience and engagement: A study of the banking industry in China. Int J Hum Resour Manag. 2019;30(8):1239-60.
42. De Oliveira LB, da Silva FFRA. The effects of high performance work systems and leader-member exchange quality on employee engagement: Evidence from a Brazilian non-profit organization. Procedia Comput Sci. 2015;55:1023-30.
43. Huang Y, Ma Z, Meng Y. High-performance work systems and employee engagement: Empirical evidence from China. Asia Pac J Hum Resour. 2018;56:341-59.
44. Karadas G, Karatepe OM. Unraveling the black box: The linkage between high-performance work systems and employee outcomes. Empl Relat. 2019;41(1):67-83.
45. Bailey C, Madden A, Alfes K, Fletcher L. The meaning, antecedents and outcomes of employee engagement: a narrative synthesis. Int J Manag Rev. 2017;19(1):31-53. doi:10.1111/ijmr.12077
46. Christian MS, Garza AS, Slaughter JE. Work engagement: a quantitative review and test of its relations with task and contextual performance. Pers Psychol. 2011;64(1):89-136. doi:10.1111/j.1744-6570.2010.01203.x
47. Rabiul MK, Mohamed AE, Patwary AK, Yean TF, Osman SZ. Linking human resources practices to employee engagement in the hospitality industry: The mediating influences of psychological safety, availability and meaningfulness. Eur J Manag Bus Econ. 2021;32(2):223-40.
48. Rich BL, Lepine JA, Crawford ER. Job engagement: Antecedents and effects on job performance. Acad Manage J. 2010;53(3):617-35.
49. Stirpe L, Profili S, Sammarra A. Satisfaction with HR practices and employee performance: A moderated mediation model of engagement and health. Eur Manag J. 2022;40(2):295-305.
50. Garg N, Sharma B. The mediating role of employee engagement in the relationship between high performance work practices and job performance. NMIMS Manag Rev. 2015;27:85-102.
51. Yi J. A measure of knowledge sharing behavior: Scale development and validation. Knowl Manag Res Pract. 2009;7(1):65-81.
52. Van den Hooff B, de Ridder JA. Knowledge sharing in context: The influence of organizational commitment, communication climate and CMC use on knowledge sharing. J Knowl Manag. 2004;8(6):117-30.
53. Almadana AV, Suharnomo S, Perdhana MS. Can generational differences and feeling trusted improve knowledge-sharing behavior? Consequences of high-performance work systems. J Workplace Learn. 2022;34(2):200-14. doi:10.1108/JWL-05-2021-0058
54. Kuvaas B, Buch R, Dysvik A. Perceived training intensity and knowledge sharing: Sharing for intrinsic and prosocial reasons. Hum Resour Manag. 2012;51(2):167-87.

55. Carmeli A, Gelbard R, Reiter-Palmon R. Leadership, creative problem solving capacity, and creative performance: the importance of knowledge sharing. Hum Resour Manag. 2013;52(1):95-121. doi:10.1002/hrm.21514
56. Sousa FC, Pellissier R, Monteiro IP. Creativity, innovation and collaborative organizations. Int J Organ Innov. 2012;5(1):26-64.
57. Anser MK, Yousaf Z, Yasir M, Sharif M, Nasir MH, Rasheed MI, et al. How to unleash innovative work behavior of SMEs' workers through knowledge sharing? Accessing functional flexibility as a mediator. Eur J Innov Manag. 2022;25(1):233-48. doi:10.1108/EJIM-11-2019-0332
58. Ahmed F, Hassan A, Ayub MU, Klimoski RJ. High commitment work system and innovative work behavior: the mediating role of knowledge sharing. Pak J Commer Soc Sci. 2018;12(1):29-51.
59. Minbaeva DB, Makela K, Rabbiosi L. Linking HRM and knowledge transfer via individual-level mechanisms. Hum Resour Manag. 2012;51(3):387-405.
60. Saleem T, Shahab H, Irshad M. High-performance work system and innovative work behavior: The mediating role of knowledge sharing and moderating role of inclusive leadership. Int J Bus Econ Aff. 2023;8(1):43-59.
61. Bhatti SH, Zakariya R, Vrontis D, Santoro G, Christofi M. High-performance work systems, innovation and knowledge sharing: an empirical analysis in the context of project-based organizations. Employee Relat. 2021;43(2):438-58. doi:10.1108/ER-10-2019-0403
62. Anser MK, Yousaf Z, Khan A, Usman M. Towards innovative work behavior through knowledge management infrastructure capabilities: mediating role of functional flexibility and knowledge sharing. Eur J Innov Manag. 2021;24(2):461-80. doi:10.1108/EJIM-09-2019-0250
63. Nguyen NP, McGuirk H. Evaluating the effect of multifactors on employee's innovative behavior in SMEs: Mediating effects of thriving at work and organizational commitment. Int J Contemp Hosp Manag. 2022;34(12):4458-79.
64. Gupta B. Employees' knowledge sharing behaviour and work engagement: The role of organisational politics. Int J Bus Excell. 2011;4(2):160-77.
65. Jacobson N, Butterill D, Goering P. Organizational factors that influence university-based researchers' engagement in knowledge transfer activities. Sci Commun. 2004;25(3):246-59.
66. Song JH, Kolb JA, Hee Lee U, Kim HK. Role of transformational leadership in effective organizational knowledge creation practices: Mediating effects of employees' work engagement. Hum Resour Dev Q. 2012;23(1):65-101.
67. Yadav M, Choudhary S, Jain S. Transformational leadership and knowledge sharing behavior in freelancers: A moderated mediation model with employee engagement and social support. J Glob Oper Strateg Source. 2019;12(2):202-24.
68. Fullwood R, Rowley J. The role of knowledge sharing in volunteer learning and development. Nonprofit Manag Leadersh. 2021;32(1):121-39.
69. Fait M, Cillo V, Papa A, Meissner D, Scorrano P. The roots of 'volunteer' employees' engagement: The silent role of intellectual capital in knowledge-sharing intentions. J Intellect Cap. 2023;24(2):399-429.
70. Ford D, Myrden SE, Jones TD. Understanding disengagement from knowledge sharing: Engagement theory versus adaptive cost theory. J Knowl Manag. 2015;19(3):476-96.
71. Cohen S. Environmental load and allocation of attention. Advances in environmental psychology. 1. Hillsdale, NJ: Lawrence Erlbaum Associates; 1978. p. 1-29.
72. Cohen S. Aftereffects of stress on human performance and social behavior: A review of research and theory. Psychol Bull. 1980;88(1):82-108.
73. Kock N. Common method bias in PLS-SEM: A full collinearity assessment approach. Int J E-Collab. 2015;11(4):1-10.
74. Gaertner KN, Nollen SD. Career experiences, perceptions of employment practices, and psychological commitment to the organization. Hum Relat. 1989;42(11):975-91.
75. Vandenberg RJ, Richardson HA, Eastman LJ. The impact of high involvement work processes on organizational effectiveness: A second-order latent variable approach. Group Organ Manag. 1999;24(3):300-39.
76. Sun LY, Aryee S, Law KS. High-performance human resource practices, citizenship behavior, and organizational performance: A relational perspective. Acad Manage J. 2007;50(3):558-77.
77. De Vries RE, Van den Hooff B, de Ridder JA. Explaining knowledge sharing: The role of team communication styles, job satisfaction, and performance beliefs. Commun Res. 2006;33(2):115-35.
78. Ringle CM, Wende S, Becker JM. SmartPLS 3. Boenningstedt: SmartPLS GmbH; 2015.
79. Preacher KJ, Hayes AF. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behav Res Methods. 2008;40(3):879-91.
80. Castro I, Roldán JL. A mediation model between dimensions of social capital. Int Bus Rev. 2013;22(6):1034-50. doi:10.1016/j.ibusrev.2013.02.004
81. Hayes AF. Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. Commun Monogr. 2009;76(4):408-20.
82. Taylor A, MacKinnon D, Tein J. Tests of the three-path mediated effect. Organ Res Methods. 2008;11(2):241-69.

83. Alwin DF, Hauser RM. The decomposition of effects in path analysis. Am Sociol Rev. 1975;40:37-47. doi:10.2307/2094445
84. Van Jaarsveld DD, Walker DD, Skarlicki DP. The role of job demands and emotional exhaustion in the relationship between customer and employee incivility. J Manag. 2010;36(6):1486-504.
85. Hair JF, Hult GTM, Ringle CM, Sarstedt M. A primer on partial least squares structural equation modeling (PLS-SEM). Thousand Oaks, CA: Sage; 2014.
86. Barroso C, Carrión GC, Roldán JL. Applying maximum likelihood and PLS on different sample sizes: studies on SERVQUAL model and employee behavior model. Berlin, Heidelberg: Springer; 2010. 427-47 p.
87. Bagozzi RP, Yi Y. On the evaluation of structural equation models. J Acad Mark Sci. 1988;16(1):74-94. doi:10.1007/BF02723327
88. Guenther P, Guenther M, Ringle CM, Zaefarian G, Cartwright S. Improving PLS-SEM use for business marketing research. Ind Mark Manag. 2023;111:127-42.
89. Henseler J, Ringle CM, Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modelling. J Acad Mark Sci. 2015;43(1):115-35.
90. Clark LA, Watson D. Constructing validity: basic issues in objective scale development. Psychol Assess. 1995;7(3):309-19. doi:10.1037/14805-012
91. Henseler J, Ringle CM, Sinkovics RR. The use of partial least squares path modeling in international marketing. Adv Int Mark. 202009. p. 277-319.
92. Chin WW. The partial least squares approach to structural equation modelling: Lawrence Erlbaum Associates; 1998. 295-358 p.
93. Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. Behav Res Methods. 2009;41(4):1149-60.
94. Falk RF, Miller NB. A primer for soft modelling. Akron, OH: University of Akron Press; 1992.
95. Kamasak R, Bulutlar F. The influence of knowledge sharing on innovation. Eur Bus Rev. 2010;22(3):306-17.
96. Jansen JJ, Van Den Bosch FA, Volberda HW. Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. Manag Sci. 2006;52(11):1661-74.
97. Issac AC, Baral R, Bednall TC. What is not hidden about knowledge hiding: Deciphering the future research directions through a morphological analysis. Knowl Process Manag. 2021;28(1):40-55.