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HPWS and Employee Outcomes among Healthcare Professionals: The Moderating Role of Organizational Justice, and the Mediating Role of Employee Engagement in Shaping Employee Performance and OCB

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Abstract

In an ever-evolving, high-demand, and resource-constrained healthcare environment, it is imperative that healthcare administrators and policy makers understand both theoretically and practically the influence of organizational practices on employees' behaviour. This study, drawing on Resource-Based View (RBV), AMO-Framework, JD-R Model, and Social Exchange Theory (SET), examines the impact of High-Performance Work Systems (HPWS) on healthcare professionals' performance and organizational citizenship behaviour (OCB), with employee engagement serving as a mediating mechanism. Furthermore, the moderating effects of organizational justice on the relationship between HPWS and employee engagement. The research contributes to achieving SDG 3, SDG 8, SDG 10, and SDG 16. The survey Data was collected from a sample of 500 healthcare professionals (medical doctors and nurses) across public and private hospitals in five purposively selected cities of Pakistan. The test of hypothesized relationships was performed using PLS-SEM method and applying SmartPls 4 software. The results revealed that employee engagement significantly partially mediates the relationship between HPWS and both employee performance and OCB. Additionally, the strength of HPWS-Engagement link is contingent upon organizational justice, suggesting that justice-driven engagement enables HPWS to foster employees' performance and citizenship behaviour. The study findings contribute to SHRM and OB literature by foregrounding the underlying socio-psychological mechanism through which HPWS drives sustainable employee behaviours in healthcare settings. It further highlights the role of strategic HR practices in advancing the UN 2030 Agenda, linking inclusive management, employee well-being, and institutional stability supporting the SDG 3, SDG8, SDG 10, and SDG 16.

Keywords: High-Performance Work System, Employee Engagement, Organizational Citizenship Behaviour, Employee Performance, Organizational Justice, Healthcare Professionals, Sustainable Healthcare, SDGs

Introduction

In today's dynamic and highly competitive organizational landscape, organizations are continuously endeavoring to foster superior organizational performance. Organizations, in this regard, being well-cognizant of the pivotal role of human capital, especially in the contemporary era of knowledge-driven economy, do recognize strategic human resource management as the key determinant of organizational success (Mebratie et al., 2025). This increasing recognition of human resources as the most valued asset of an organization has emerged as a strategic approach that seeks to transform organizational employees into efficient, rare, inimitable, and non-substitutable resources who could prove to be the decisive and vital source of sustainable competitive advantage (Barney, 1998; Ubeda-Garcia et al., 2022; Madgavkar et al., 2023; Wujarso & Dameria, 2023; Faugoo, 2024). Thus, for organizations, effective people management, through synergistic human resource practices, has become essential to achieve higher levels of organizational performance and competitive advantage. One of the most influential strategic HRM approaches, is the concept of High-Performance Work System (HPWS) which through the integration of coherent HR practices such as selective staffing and recruitment, training and development, information sharing, participative decision making and team work, performance-based appraisal and rewards, work-life balance etc., helps in the strategic alignment of individual efforts with that of the organizational goals where organizational members, due to enhanced motivation, commitment and identification contribute to long-term organizational prosperity (Diaz-Carrion, 2020; Ubeda-Garcia et al., 2022). HPWS, as cited in extant literature, impacts various individual and organizational outcomes, especially employee performance and organizational citizenship behaviour. However, the underlying mechanism through which it functions to influence these outcomes remains an area of ongoing investigation across sectors particularly in high-stress and service-intensive sectors such as the healthcare sector where the delivery of high-quality patient care does not only depend upon clinical expertise but also on the motivation, commitment, and other collaborative behaviours of the healthcare professionals. The healthcare organizations, owing to heightened service demands, resource constraints, and ever evolving healthcare systems are under immense pressure to optimize workforce potential and keep them engaged to drive sustainable organizational outcomes, and this calls for a specialized SHRM focus for quality healthcare services. The implementation of HPWS can be instrumental in enhancing employees' competence and engagement benefiting both individuals and organizations with enhanced performance (Odiaka & Chang, 2024; Bharadwaj et al., 2025).

This study delves into the impact of HPWS on Healthcare professionals' performance and organizational citizenship behaviour (OCB), and the underlying mechanism of employee engagement functioning as a mediator through which HPWS affects Healthcare professionals' individual performance and discretionary extra-role behaviour (OCB) as HPWS by channelizing healthcare professionals' cognitive, emotional, physical involvement in their work may drive enhanced performance and organizational citizenship behaviour. Additionally, this study also explores the moderating role of organizational Justice in the relationship between HPWS and employee engagement, as the healthcare professionals' perception of fairness in the

processes, interactions, and outcomes could be a key contextual factor that may strengthen or weaken the effectiveness of HPWS in making employees to reciprocate with higher levels of engagement which further translates into both enhanced individual performance and organizational citizenship behaviour.

Thus, this study extends the existing SHRM and OB literature by integrating perspectives from the Resource-Based View (RBV), AMO framework, social exchange theory (SET), and the Job demands-resources model (JD-R Framework), examines HPWS, employee engagement, employee performance, organizational citizenship behaviour, and organizational justice within a single integrated framework. Furthermore, this study while addressing the contextual and sectoral gap by testing this integrated model empirically in the healthcare sector of Pakistan, provides insights into the role of employee engagement as an underlying mechanism linking HPWS with healthcare professionals' performance and discretionary citizenship behaviour. Additionally, it broadens the understanding of organizational justice by testing its conditional role in shaping HPWS and employee engagement relationship within the high-demand, critically responsible, and high-coordination and teamwork dependent healthcare context of a developing country, Pakistan and thereby offering practical insights for designing justice driven high-performance work environments that enable healthcare organizations to succeed in developing and retaining engaged, high-performing, and citizenship-oriented healthcare professionals.

Literature Review and Hypothesis Development

Theoretical Background

This study investigates as to how HPWS affects healthcare professionals' performance and organizational citizenship behaviour (OCB), and while studying this relationship, it also examines the mediating role of employee engagement and moderating role of organizational justice. In order to underpin the relationship between the study variables, the theoretical perspectives such as Barney's (1990) Resource Based View (RBV), Adam's (1965) Equity Theory, Bakker & Demerouti's (2017) Job Demands-Resources (JD-R) Model, and Balu's (1964) Social Exchange Theory (SET) have been utilized.

The RBV (Barney, 1991) proposes that focusing on the strategic management of human resources can be source of completive advantage and effective management through the set of interrelated HR practices (HPWS) aimed at enhancing employees' skills, motivation, and empowerment can lead to heightened engagement, performance, and discretionary efforts benefiting organization. The RBV is complemented by Appelbaum's (2000) framework as enhanced abilities through skills, motivation through fair rewards, and opportunities through empowerment, and alignment of the same using HPWS significantly affects engagement, performance and OCB. Accordingly, as posited by JD-R Model (Bakker & Demerouti, 2017) balancing of Job Demands, and provision of resources through HPWS influences employee engagement which furthers employees' performance and OCB. Moreover, drawing on Adam's (1965) Equity theory, employees' perception of fairness in the workplace resulting from the implementation of fair organizational practices in the form of HPWS furthers employee engagement which in turn provokes employees for enhanced performance and going extra miles. Similarly, Balau's (1964) SET leverages the underpinning of HPWS and employees' both in-role and extra-role behaviours as employees on perceiving organizational

support and fair treatment in the workplace facilitated by the implementation of HPWS reciprocate with increased levels of engagement, performance and OCB.

This study, integrating the above stated theoretical perspectives, proposes that HPWS through its skill enhancing, motivation enhancing, and empowerment enhancing practices influences employees' engagement which mediates HPWS and employee outcomes linkage. Moreover, employees' perception of organizational justice in the workplace strengthens HPWS and engagement linkage.

Hypothesis Development

HPWS and Employee Performance

One of the core objectives of Human Resource Management is to enhance employee performance and organizational effectiveness (Huselid, 1995, Becker & Huseelid, 1998; Knies et al., 2024; Guest, 2025) and this is why studying the role of HRM in promoting employee performance has garnered significant attention of the strategic HRM and an extensive body of SHRM research has documented the benefits of designing and implementing skill-enhancing (Capelleras et al., 2024; Groenewald et al., 2024; Robert & Mori, 2025), motivation-enhancing (Jumakil & Dewi, 2024; Languerre & Barnes-Ferrell, 2024), and opportunity enhancing practices (Paros, 2021; Zhang, Yang, & Huo, 2021; Nasir & Benoliel, 2024). These effective AMO-Enhancing HR practices lead to the creation of a supportive environment encouraging higher levels of performance and sustained organizational success (Guest, 2025). Many researchers, using a systematic HRM approach have stressed the implementation of HR practices as a coherent system rather than discrete 'best practices', as according to them, to achieve enhanced performance effects, the HR practices should not be implemented in isolation but strategically bundled into an integrated system (Appelbaum et al., 2000; Sanders, 2022; Bhoir & Sinha, 2024). The HR practices implemented as integrated system create synergistic effects, leading to the enhancement of employees' skills, motivation, and opportunities in a more comprehensive manner (Edgar, Zhang, & Blaker, 2021). This approach known as High-Performance Work System (HPWS) through its cohesively bundled HR practices fosters a holistic environment that encourages higher levels of performance and sustained organizational success (Pathhnaik & Sahoo, 2021; Wojtczuk-Turek & Turek, 2021; Jalali et al., 2023; Chen & Chen, 2023; Paauwe, 2024; Riaz et al., 2024). Therefore, based on the findings of aforementioned studies, and especially of studies conducted in the Healthcare sector (Rubel et al., 2021; Khalid & Boraji, 2024; Kilroy, 2024; Padamata & Vangapandu, 2024 & 2025), it can be stated that HPWS positively affects employee performance.

H_1: HPWS positively affects Employee Performance

HPWS and Organizational Citizenship Behaviour

In scholarly literature, researchers have long been suggesting a positive relationship between HPWS and OCB (Beker & Huselid, 1998; Comb et al., 2006; Alfes et al., 2013; Vu, 2018; Ghalawat & Kundu, 2020; Ma Teng, & Yan, 2024; Arefin et al., 2023). HPWS, comprising a set of skill enhancing, motivation enhancing, and opportunities enhancing practices are found to influence OCB significantly positively (Appelbaum et al., 2000; Takeuchi et al., 2009; Edgar et al., 2021).

The relationship between HPWS and OCB can be better explained using 'norm of reciprocity' perspective (Gouldner, 1960 & 2023) and 'social exchange' perspective (Blau, 1964 & 2017) as the mentioned perspectives provide a conceptual framework explaining the mutually reinforcing cycle of positive exchanges between employees and their organization. HPWS through its AMO enhancing signals organizational members that organization values them and believes in investing in their development and well-being (Li et al., 2019; Edgar et al., 2021; Wojtczuk-Turek & Turek, 2021). Employees perceiving organization's investments in their development are likely to feel a sense of obligation to reciprocate, and such a reciprocation is often manifested in the form of OCB (Ubeda-Garcia et al., 2022). Thus, HPWS comprising complementary HR practices designed to enhance employee skills, motivation, and opportunities can be used as a tool to encourage high quality exchange relationship making employees indulge in discretionary, citizenship behaviours benefiting organization (Edgar et al., 2021; Yang & Zhang, 2022 & 2023; Arefin et al., 2023; Gupta et al., 2024). As a result, it can be proposed that employees with positive perception of their HPWS respond with higher levels of OCB.

H_2: HPWS positively affects Employee Performance.

HPWS and Employee Engagement

The study of relationship between HPWS and employee engagement has gained significant attention in SHRM literature. The researchers using the lens of AMO Framework (Malik & Lenka, 2019; Boxall & Purcell, 2022; Malik et al., 2024), the insights from Job Demands-Resource (JD-R) Model (Beker et al., 2023; Kato, Chiba, & Shimazu, 2021), and the reciprocity rule of SET (Blau, 1964; Cropanzano & Mitchell, 2005) have tried to explain the pivotal role of HPWS in enhancing employee engagement.

The researchers explaining the HPWS-Engagement interaction through the lens of AMO framework posit that HPWS intensifies employee engagement by enhancing their abilities through rigorous training, motivation through performance-based rewards and incentives and recognition, and opportunities to participate through job enrichment and empowerment (Edgar et al., 2021; Johar et al., 2024; Padamata & Vangapandu, 2024). Similarly, using JD-R model they claim that HPWS reduces the strain of job demand by providing job resources, such as autonomy, support, and feedback which leads to higher levels of employee engagement (Mazzetti et al., 2023). Furthermore, they using the reciprocity rule of SET (Blau, 1964), substantiate that incorporation of HPWS manifesting investments of organization in their employees through extensive trainings, career development opportunities, fair compensation, and supportive work environment contribute to the establishment of high-quality exchange relationship obligating employees to reciprocate by showing high engagement at work (Arefin et al., 2019; Soomro, Abro, & Ahmed, 2024). Thus, based on the aforementioned extant research, it is suggested that HPWS and employee engagement are positively related.

H_3: HPWS positively affects Employee Engagement

Employee Engagement mediating the relationship between HPWS and Employee Performance

A growing body of research claims a positive relationship between HPWS and employee performance. HPWS, through its interrelated HR practices such as selective staffing,

comprehensive training, participative decision making, performance-based reward, and information sharing encourages positive employee attitudes and behaviours, leading to enhanced employee performance (Sun et al., 2006; Takeuchi et al., 2007; Alfes et al., 2013; Guest, 2025). Employees perceiving that organization values them, and invests in their development and well-being, develop feelings of trust, recognition, partnership, and reciprocity, furthering their job satisfaction, motivation, commitment, and identification with the organizational goals (Robbins, Judge, & Vohra 2019). These factors collectively enhance employee engagement, making them indulge in their job roles cognitively, emotionally, and physically to contribute to organization (Kahn, 1990; Maulia & Ali, 2024).

In this context, enhancing employee engagement using HPWS designed around the principles of ability, motivation, and opportunity (AMO) framework (Appelbaum et al., 2000) has fast emerged as an effective management strategy aimed at enkindling affective commitment, cultivating a sense of ownership and belonging, strengthening trust in leadership and colleagues, nurturing loyalty, and unleashing employee discretion to make decisions and take initiatives to enhance both individual and organizational performance (Kerking, 2023; Kim, Chang, & Kim, 2023; Bos-Neheles et al., 2023; Paauwe, 2024). Recent studies, in order to explain the linkage between HPWS and performance have emphasized the critical role of employee engagement, and researchers using the guidelines provided by SET (Blau, 1964) and AMO Framework (Appelbaum, 2000) have reported a mediating role of employee engagement in the relationship between HPWS and employee performance (Alfes et al., 2013; Akhtar et al., 2016; Muduli, Verma, & Datta, 2016; Li et al., 2019; Odiaka, 2020; Jatoi et al., 2024; Jaya et al., 2024).

The proposition, employee engagement mediating the relationship between HPWS and employee performance is congruent with the claim that HPWS through the provision of adequate support and resources succeeds in achieving higher levels of employee motivation and involvement, encouraging employees to invest in their work cognitively and emotionally for optimal performance, thus providing a key mechanism through which HPWS is transformed into superior employee performance. Therefore, based on the critical role of employee engagement in deciphering the black-box mechanism between HPWS and employee performance cited in empirical research, it is hypothesized that employee engagement mediates the relationship between HPWS and employee performance.

H_4: Employee Engagement positively mediates the relationship between HPWS and employee performance.

Employee Engagement mediating the relationship between HPWS and Organizational Citizenship Behaviour

Organizational experts fleshing out the scope and structure of HPWS posit that these systems congruent with Applebaum's (2000) AMO Framework, enhance employees' abilities in the form of developed skills and knowledge, motivate employees to apply self and going extra mile, and ensure employee participation in decision making, thereby positively affecting employee attitudes and behavior in alignment with organizational goals (Saks, 2006; Takeuchi, 2007; Edgar et al., 2021; Paauwe, 2024; Pak & Ju, 2024). Of the attitudes that HPWS affects positively, employee engagement is the most notable one as the increased employee engagement characterized by cognitive, emotional, and behavioral commitment makes

employees to perform in the best interest of the organization (Kahn, 1990). Employee engagement emerging as a function of HPWS furthers employees' motivation to step out of the bounds of their formal job roles and indulge in discretionary citizenship behavior contributing to organizational success (Bakker & Demerouti, 2007; Luu, 2019; Klautsiniotis & Mahail, 2020; Bhutto et al., 2021). The exhibition of extra-role behaviour on part of employees is rooted in theories such as norm of reciprocity (Gouldner, 1960), social exchange (Blau, 1964), psychological contract (Rosseau, 1989), and motivational pathway of Job-Demand-Resources (JD-R) theory (Bakker & Demerouti, 2007), as employees on experiencing mutually beneficial and constructive exchanges feel motivated to be fully involved in their work, care about the organization, extend support to fellow colleagues, and go above and beyond the formal call of duty (Nadeem et al., 2019; Kloutsiniotis & Mahail, 2020; Aboramadan et al., 2022; Zhang et al., 2022; Lim et al., 2024). Therefore, based on the empirical evidence proposing emergence of employee engagement as a function of the implementation of HPWS, and further leading to enhanced OCB following hypothesis is proposed.

H_5: Employee Engagement positively mediates the relationship between HPWS and OCB.

Moderating Role of Organizational Justice in the relationship between HPWS and Employee Engagement

Organizational Justice, a multidimensional construct citing employees' perception of fairness within an organization (Greenberg, 1990, Colquitt, 2001) is thought to be a universal predictor of employee and organizational outcomes (Pan et al., 2018; Gupta et al., 2025), as employees' behavioural reactions are guided by their perception of fairness within the workplace (Colquitt et al., 2001, Chen & Khuangga, 2021; Colquitt et al, 2023; Ho, 2024). Organizations considering the importance of organizational justice in developing the desired attitudes and behaviours of their organizational members try creating an overall climate of organizational justice, and they in line with this aim, implement HPWSs, which through its interrelated HR practices such as highly selective staffing, training and development, performance-based appraisal and rewards, information sharing, teams and participative decision making, work-life balance, employment security sends signals of fairness, recognition, autonomy, and wellbeing furthering employees' satisfaction, commitment, motivation, and engagement (Huselid, 1995; Zacharatos, 2005; Takeuchi, 2007; Badru, Karadas, & Oglubade, 2024; Padamata & Vanagapandu, 2024). The researchers recognizing the importance of committed and involved work force in aiding the organizations to maintain sustainable competitive advantage and perform better have studied the impact of HPWS on employees' engagement and have reported a significantly positive relationship between HPWS and employee engagement (Combs et al., 2006; Takeuchi et al., 2007; Albrecht et al., 2015; Huang et al., 2017; Arefin et al., 2019; Pak & Ju, 2024). However, despite the HPWS-employee engagement linkages determined over time by SHRM researchers, there remains a critical need to identify the factors that shape the nature of these linkages. One of such factors that may change the strength and/ or direction of HPWS and employee engagement is the perception of fairness in the workplace as employees seek for equity between inputs and outputs (Adam, 1963 & 1965, Colquitt et al., 2001; Saks, 2006; Hughes et al., 2019; Bashir, Wright,& Hassan, 2023), fairness associated with the procedures used to determine the outcomes (Colquitt et al., 2013; Ha & Lee, 2022; Peacock et al., 2023), and fairness pertaining to communication and treatment in day-to-day interactions (Colquitt et al., 2001; Fouquereau et al., 2020; Macias,

Chapman, & Rai, 2024; Richards, Albert, & Schat, 2024), thus, a strong perception of organizational justice can enhance the effectiveness of HPWS in fostering employee engagement. Therefore, based on the foregoing and understanding the pivotal role of organizational justice between HPWS-engagement relationship using the lenses of social exchange theory (Blau, 1964), norm of reciprocity (Gouldner, 1960), psychological contract theory (Rosseau, 1989), it can be inferred that organizations despite having HPWS implemented, will depend on employees' perception/ judgement of fairness within the organization to achieve higher levels of employee engagement, and thus amplifying the role of organizational justice as a moderator that influence the strength and direction of the relationship between HPWS and employee engagement (Peprah, 2020).

H_6: Organizational Justice moderates the relationship between HPWS and Employee Engagement.

Based on the literature review and proposed hypotheses, the conceptual framework of the study is presented in the following figure 1.

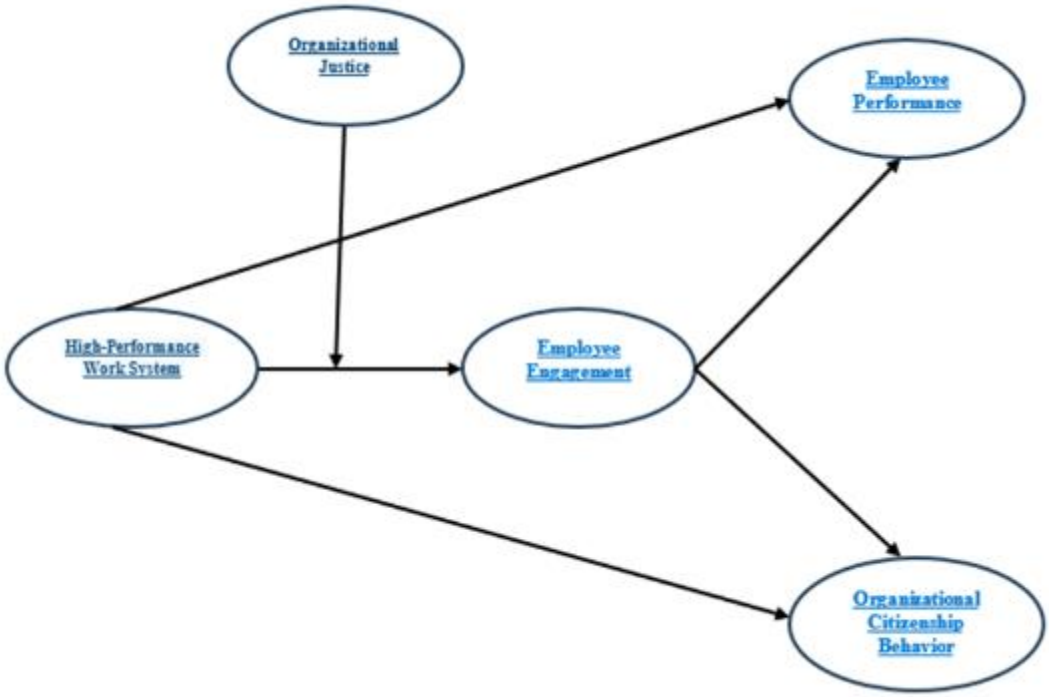

Figure 1 Conceptual framework
Source: developed by authors

Methodology

Figure 1 illustrates the main constructs explored in the present study, providing the schematic description of the research model.

Research Design

This study employed quantitative (Hair, Page, & Brunweld, 2019) and cross-sectional (Cresswell, 2014) research design to study the impact of HPWS on healthcare professionals' performance and organizational citizenship behaviour, with employee engagement as a mediating variable and organizational justice as a moderator. The data, aligned with cross-

sectional approach, was collected at a single point in time to investigate the relationship between the latent constructs present in the study model, based on the perceptions of healthcare professionals.

Population and Sampling

The population for the study comprised of the healthcare professionals (doctors and nurses) working in the public and private sector hospitals in Pakistan. The unit of analysis was the individual healthcare professional. The present study employed a combination of purposive (Cresswell, 2014) and snowball sampling techniques (Biernacki & Waldorf, 1981). First, using purposive sampling technique (Cresswell, 2014), five major cities considering their geographical diversity, their population density, and high concentration of public and private sector hospitals providing healthcare services to a large rural and urban population were selected. Next, five leading public sector tertiary care hospitals and five leading private sector tertiary care hospitals were identified from each of the five purposively selected cities in consultation with senior medical professors, experienced physicians, and senior officers in the Ministry of Health in Pakistan. In the third stage, using the snowball sampling technique (Biernacki & Waldorf, 1981), 500 healthcare professionals (doctors and nurses) working in the public and private sector hospitals located in the selected cities were recruited. The targeted sample size was calculated using G*Power 3.1 software (Faul et al., 2009) based on the parameters including, power level of 0.80, significance level of 0.05, a medium effect size ($f^2 = 0.15$), and the number of predictor variables in the structural model. And, the present study while considering PLS-SEM best practices and aligning with the recommendations of Hair et al. (2022) employed a sample of 500 respondents. Table 1 shows the respondents' profile.

Table 1
Respondent Profiles Respondents (N = 500)

Demographic Variable	**Category**	**Frequency**	**Percentage**
Respondent Category	Doctor	305	61
	Nurse	195	39
Gender	Male	197	39.4
	Female	301	60.2
	Rather not say	2	0.4
Age	20 - 30 years	165	33
	31 - 35 years	142	28.4
	36 - 40 years	79	15.8
	41 - 45 years	56	11.2
	50 years and above	58	11.6
Qualification	Bachelor	180	36
	Masters/ Fellowship	230	46
	Professional Course	71	14.2
	PhD	6	1.2
	Any other	13	2.6
Designation (Doctors)	House Officer	15	3
	Medical Officer	156	31.2
	Registrar	29	5.8
	Snr. Registrar	29	5.8

	Asst. Professor	43	8.6
	Assoc. Professor	16	3.2
	Professor	14	2.8
	Deputy Medical Superintendent	2	0.4
	Medical Superintendent	1	0.2
Designation (Nurses)	Asst. Nurse	70	14
	Head Nurse	64	12.8
	Supervisor	44	8.8
	Asst. Chief	9	1.8
	Matron Nursing	8	1.6
Experience	1 - 5 years	177	35.4
	6 - 10 years	140	28
	11 - 15 years	85	17
	16 years and above	98	19.6
Tenure in present Hospital	1 - 4 years	307	61.4
	5 - 9 years	109	21.8
	10 years and above	84	16.8
Marital Status	Single	229	45.8
	Married	263	52.6
	Divorced	6	1.2
	Widow	2	0.4

Data Collection

Data was collected using a structured, self-administered questionnaire. The questionnaire comprised two sections: the first section included 9 different aspects pertaining to the demographic characteristics of the respondents, while the second section included the measures of the latent variables included in the study. The constructs included in the study model were measured using adopted and previously validated scales, and items of these scales were rated on a 5-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree).

Measures

High-Performance Work System (HPWS)

The HPWS was included as a Higher-order constructs and it had 8 sub-dimensions. Data pertaining to the 4 dimensions of HPWS (employment security, information sharing, selective hiring/ staffing, and self-managed teams & participative decision making) using an adapted version of Zachratos et al. (2005) which comprised 21 items. Training and development and clear job design were measured using Delery and Doty's (1996) scale, with each sub-dimension measured through 4 items. Incentive pay based on performance appraisal was measured using a 3-item scale adopted from Wright et al. (2003), and work/life was measured using Brough et al.'s (2003) scale. HPWS, following Becker and Gerhart (1996) and Zachratos et al. (2005) is presented as a single score measure comprising 8 sub-dimensions.

Employee Performance (EP)

Employee Performance was measured using a validated scale adopted from Rodwell, Kienzle and Shadur (1998) comprising 8 items. The Cronbach's Alpha (α) for this scale was 0.752

Organizational Citizenship Behaviour (OCB)
Organizational citizenship behaviour was measured using Podsakoff et al.'s (1990) 16-item scale. This scale focused on 5 sub-dimensions of OCB including altruism (2 items), curtesy (2 items), sportsmanship (4 items), civic virtue (3 items) and conscientiousness (5 items). However, it has been used as a single score measure comprising 5 sub-dimensions. The Cronbach's Alpha (α) for OCB's scale as a whole was found to be 0.725 for the study

Organizational Justice (OJ)
The healthcare professionals' perception about Organizational Justice was measured using the justice scale developed by Colquitt J. A. (2001). The OJ scale comprising 20 items focused on healthcare professionals' distributive justice (4 items), procedural justice (7 items), and interactional justice (9 items). OJ was used as a single measure and the Cronbach's Alpha (α) for OJ's scale as a whole was found to be 0.746 for the study

Employee Engagement (EE)
Employee engagement of healthcare professionals was measured using 9-item Utrecht Work Engagement (UWES-9) scale developed by Schaufelli, Bakker, and Salanova (2006). The UWES-9 measured the three sub-dimensions of employee engagement including vigor (3 items), dedication (3 items), and absorption (3 items). The Cronbach's Alpha (α) for EE's scale as a whole was found to be 0.813 for the study.

Statistical Analyses
Data analysis was performed using Partial Least Square Equational Modeling (PLS-SEM), particularly the variance based PLS-Sem for its being considered an appropriate choice for complex study models. It is a preferred choice of researchers for its ability to i) examine a structural model with a relatively smaller sample size (Hair et al, 2019), ii) measure both reflective and formative measurement models at once (Chin, 1998; Vinzi et al., 2010; Diamantopoulos & Winklhofer, 2001), and iii) effectively analyze non-normal data (Goodhue et al., 2012; Hair et al., 2019). SmartPLS 4 software was utilized to conduct SEM analysis as it aligns well with PLS-SEM for handling complex models including both formative and reflective latent constructs, for studies with small to medium sample sizes, and non-normally distributed data (Hair et al., 2016; Hair et al., 2022). The data was analyzed following the two-staged approach, i) assessment of measurement model, and ii) assessment of structural model (Sarstedt et al., 2016; Hair et al., 2022).

Results
Measurement model
The present study included both reflective and formative measurement constructs. The determination of constructs either as reflective or formative was performed following the guidelines provided by Sarstedt et al. (2016) and Hair et al. (2017). Employee engagement (EE), organizational justice (OJ), employee performance (EP), and organizational citizenship behaviour (OCB) were categorized as reflective constructs, whereas HPWS was categorized as a formative construct. Similarly, the assessment of reflective measurement model and formative measurement model was performed using Hair et al.'s (2017) guidelines.
Following the Hair et al.'s (2017) guidelines to assess the reflective measurement model, firstly the first-order model was analyzed as apart from employee performance (lower-order

construct) and HPWS (formative construct) the remaining constructs were multidimensional. Therefore, the indicators' reliability (outer loadings), internal consistency (Cronbach's Alpha and composite reliability), convergent validity (AVE), and discriminant validity (Fornell-Larker Criterion and HTMT) were examined.

Firstly, in order to assess individual reliability standardized factor loadings were examined. It was ensured that all the indicators were loaded onto their respective constructs and showed loading exceeding the recommended threshold of 0.70. The items with loading $< .70$ were further evaluated, specifically, the items with loadings $< .40$, or whose deletion resulted in the improvement of average variance extracted (AVE) of their respective construct.

Therefore, 3 items of employee performance (EP) scale, EP1, EP3, EP8 were removed which meaningfully improved EP's convergent validity, and one item, WLB4 from the scale of work-life balance (WLB) was deleted due to its loading being lower than 0.40. However, those items were retained whose loadings were between 0.40 and 0.70 and their respective composite reliability (CR) and AVE were greater than 0.70 and 0.50 respectively as their removal would not have resulted in significant improvement in the convergent validity of their respective construct (Hair et al., 2017).

Secondly, in order to determine the internal consistency, both Cronbach's alpha and composite reliability (CR) were assessed. The CR criterion was followed primarily to assess internal consistency as it is considered a better reliability measure than Cronbach's alpha (Fornell & Larcker, 1981; Hair et al, 2019). In all cases, the CR value was found to be $>$. indicating satisfactory internal consistency of the first-order measurement scales.

Next, the convergent validity of each construct was established by assessing their average variance extracted (AVE). The AVE values for all the constructs were $\geq .50$ thus meeting the recommended threshold (Hair et al., 2019); indicating that 50% variance in its indicators was explained by the respective latent construct, thereby demonstrating adequate convergent validity (Hair et al., 2022). Table 2 shows the results of reliability and convergent validity.

Table 2
Construct validity

Construct/ Indicators	***Loading***	***Cronbach's alpha***	***CR***	***AVE***
Absorption		0.644	0.807	0.583
EEA1	0.801			
EEA2	0.759			
EEA3	0.728			
Altruism		0.646	0.844	0.731
OCBA1	0.79			
OCBA2	0.915			
Clear Job Design		0.835	0.901	0.752
CJD1	0.884			
CJD2	0.886			
CJD3	0.829			
Conscientiousness		0.774	0.846	0.524
OCBCon1	0.616			

OCBCon2	0.763			
OCBCon3	0.735			
OCBCon4	0.766			
OCBCon5	0.73			
Courtesy		0.630	0.841	0.726
OCBCY1	0.899			
OCBCY2	0.802			
Civic Virtue		0.662	0.813	0.592
OCBCV1	0.699			
OCBCV2	0.794			
OCBCV3	0.81			
Dedication		0.752	0.857	0.668
EED1	0.851			
EED2	0.885			
EED3	0.706			
Distributional Justice		0.923	0.946	0.814
OJDJ1	0.872			
OJDJ2	0.922			
OJDJ3	0.913			
OJDJ4	0.9			
Employee Performance		0.752	0.831	0.517
EP1	0.695			
EP4	0.707			
EP5	0.723			
EP6	0.785			
EP7	0.604			
Employment Security		0.673	0.821	0.697
ES1	0.883			
ES2	0.785			
Interactional Justice		0.895	0.916	0.577
OJIJ1	0.777			
OJIJ2	0.714			
OJIJ3	0.721			
OJIJ4	0.751			
OJIJ5	0.822			
OJIJ6	0.809			
OJIJ7	0.713			
OJIJ8	0.76			
Incentive Pay based on Appraisal		0.758	0.855	0.664
IPBPA1	0.818			
IPBPA2	0.848			
IPBPA3	0.776			
Information Sharing		0.888	0.911	0.597
IS1	0.832			
IS2	0.789			

IS3	0.833			
IS4	0.804			
IS5	0.768			
IS6	0.739			
IS7	0.624			
Procedural Justice		0.901	0.922	0.628
OJPJ1	0.793			
OJPJ2	0.804			
OJPJ3	0.811			
OJPJ4	0.792			
OJPJ5	0.824			
OJPJ6	0.79			
OJPJ7	0.73			
Selective Hiring and Staffing		0.823	0.869	0.527
SHS1	0.723			
SHS2	0.73			
SHS3	0.647			
SHS5	0.814			
SHS6	0.714			
SHS7	0.717			
Self Managed Teams & Participative Decision Making		0.780	0.859	0.607
SMTPDM1	0.793			
SMTPDM2	0.864			
SMTPDM3	0.833			
SMTPDM4	0.599			
Sportsmanship		0.663	0.800	0.505
OCBSP1	0.742			
OCBSP2	0.741			
OCBSP3	0.529			
OCBSP4	0.801			
Training & Development		0.893	0.926	0.757
TD1	0.884			
TD2	0.889			
TD3	0.877			
TD4	0.829			
Vigor		0.668	0.815	0.604
EEV1	0.553			
EEV2	0.888			
EEV3	0.847			
Work-life Balance		0.821	0.893	0.735
WLB1	0.823			
WLB3	0.879			
WLB4	0.869			

Source: Compiled by authors

Following the assessment of reliability and convergent validity, the discriminant validity of the measurement model was assessed to ensure the distinctness of the latent constructs included in the study model (Hair et al, 2021). The discriminant validity was assessed using Heterotrait-Monotrait (HTMT) ratio (Henseler et al., 2015) and Fornell & Larcker criterion (Fornell & Larcker, 1981). The square root of the AVE of each construct was found to be greater than its correlation with other constructs indicating discriminant validity (as shown in Table 3).

Similarly, the HTMT ratio, the most preferred measure for being comprehensive in establishing discriminant validity (Henseler et al., 2015) also showed the HTMT values lower than the threshold value 0.90; indicating adequate discriminant validity (as shown in Table 3).

Table 3
Discriminant validity

Constructs	***1***	***2***	***3***	***4***
Fornell-Larcker Criterion				
1. Employee Engement (EE)	***0.854***			
2. Employee Performance (EP)	0.504	***0.709***		
3. Organizational Citizenship Behaviour (OCB)	0.536	0.583	***0.704***	
4. Organizational Justice (OJ)	0.466	0.514	0.433	***0.82***
Heterotrai-Monotrait (HTMT)				
1. Employee Engement (EE)				
2. Employee Performance (EP)	0.646			
3. Organizational Citizenship Behaviour (OCB)	0.665	0.765		
4. Organizational Justice (OJ)	0.597	0.683	0.605	

Source: Compiled by authors

Structural Model

Once the assessment of measurement model was completed and reliability and validity of the constructs included in the study were established, the next stage involved the assessment of structural model as shown in figure 2. The assessment of structural model was performed following the steps proposed by Hair et al. (2022). Firstly, it was ensured that there were no collinearity issues, next, path coefficients and their significance were assessed. Thirdly, R^2 was assessed to determine as to how much variance in endogenous variable was explained by the predictor variable (s), and fourthly, f^2 (effect size) was evaluated. At the final step, Q^2 (predictive relevance) was examined.

The results of the assessment of collinearity indicated no multicollinearity issue as the VIF values ranged from 1.192 to 3.711 which are well below the recommended threshold value of 5 (Hair et al., 2021).

Next, the PLS algorithm was used to generate the coefficients of determination for dependent variables. According to Hair et al. (2022), the R^2 values of 0.75, 0.50, and 0.25 represent substantial, moderate, and low predictive power, and for this study adjusted R^2 values of dependent variable have been used to evaluate model's predictive power. The results showed R^2 values of 0.309, 0.338, and 0.348 for employee engagement (EE), employee performance (EP), and organizational citizenship behaviour (OCB) respectively, suggesting weak to moderate level explanatory power of the model. These findings suggest modest, yet

acceptable predictive power of the model and furnish substantive foundation for the interpretation of path relationship among the constructs included in the structural model.

Following the estimation of Coefficient of determination (R^2) values of the endogenous constructs, the effect size (f^2) was calculated to measure contribution of exogenous variable (HPWS). According to Cohen (1988), f^2 values of .02, .15, and .35 refer to small, medium, and large effect sizes of specific exogenous construct on the endogenous construct. The results showed that HPWS had the highest f^2 value towards EP i.e. 0.127, followed by the effect size of HPWS on EE i.e. 0.123. The third highest effect size was that of HPWS on OCB i.e. 0.093.

The next step involved the calculation of Q^2 values (Stone 1974; Geisser 1974) employing blindfolding procedure to determine the predictive relevance of the model for a given endogenous construct. The Q^2 values of 0.220, 0.153, and 0.157 for EE, EP, and OCB respectively were found greater than 0.000, signifying small predictive relevance (Stone 1974; Geisser 1974).

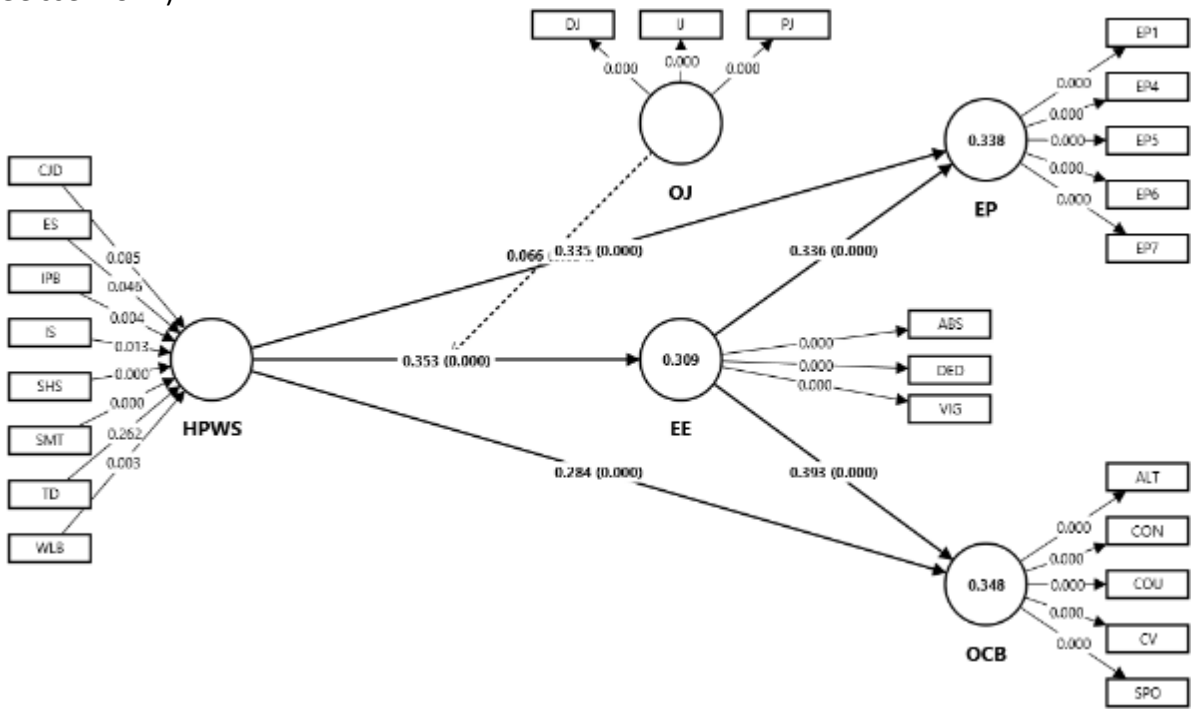

Figure 2 Structural model
Source: Developed by authors

Path Coefficients and Hypothesis Testing
The bootstrapping procedure with 10,000 subsamples was used to generate the path coefficients and their significance level for direct, indirect and moderating relationships. The decisions pertaining to the acceptance and rejection of hypotheses were made on the basis of t-values $>$ 1.96 and P $<$ 0.05 (Hair et al., 2019)

Direct Relationship
The hypothesized direct relationships (H_1 to H_3) were assessed performing bootstrapping procedure in PLS-SEM. The results, based on the standard criteria of a t-value $>$ 1.96 and P $<$ 0.05, supported all the hypotheses (as shown in Table 4). Specifically, H_1 proposed that HPWS

positively affects Employee Performance, which was supported ($\beta = 0.335, t = 7.009, p < 0.001$). H_2 predicted a positive effect of HPWS on Organizational Citizenship Behaviour ($\beta = 0.284, t = 5.376, p < 0.001$), while H_3 confirmed that HPWS positively affects Employee Engagement ($\beta = 0.353, t = 7.497, p < 0.001$).

Table 4
Hypothesis Testing

Hypotheses	***β***	***SE***	***t-values***	***p- values***	***Decisions***
H1: HPWS -> EP	0.335	0.048	7.009	0.000	Supported
H2: HPWS -> OCB	0.284	0.053	5.376	0.000	Supported
H3: HPWS -> EE	0.353	0.047	7.497	0.000	Supported

Note. HPWS: High-Performance Work System, EE: Employee Engagement, EP: Employee Performance OCB: Organizational Citizenship Behaviour

Mediation Analysis

The mediation of EE in the relationship between HPWS and EP was evaluated using the bootstrapping procedures in PLS-SEM. The results (as shown in Table 5) showed a significant indirect direct effect of HPWS on EP through EE (H_6: $\beta = .119, t = 4.197, p < .001$). The total effect of HPWS on EP was found to be significant ($\beta = .0.453, t = 11.613, p < .001$), and with the inclusion of mediator (EE), the effect of HPWS on EP was still significant ($\beta = ..335, t = 7.009, p < .001$). Both direct and indirect effects between HPWS and EP were found to be statistically significant which indicate a complementary partial mediating role of EE in the relationship between HPWS and EP. Furthermore, the Variance Accounted For (VAF) test was also conducted and the VAF value of 26.26% also confirmed partial mediation (Hair et al, 2019).

Table 5
Mediation Results - HPWS -> EE -> EP

Total Effects (HPWS -> EP)			**Direct Effect (HPWS -> EP)**			**Indirect Effects of HPWS on EP**						
β	***t-value***	***p-value***	***β***	***t-value***	***p-value***	***Hypothesis***	***β***	***SE***	***t-value***	***p-value***	***Percentile bootstrap 95% confidence interval***	
											Lower	***Upper***
0.453	11.613	0.000	0.335	7.009	0.000	H4: HPWS -> EE -> EP	0.119	0.024	4.197	0.000	0.081	0.161

Note. HPWS: High-Performance Work System, EE: Employee Engagement, EP: Employee Performance, SE: Standard Error

The mediation of EE in the relationship between HPWS and OCB was assessed using the bootstrapping procedures in PLS-SEM. The results (as shown in Table 6) showed a significant direct effect of HPWS on OCB through EE (H_7: $\beta = .139, t = 5.813, p < .001$). The total effect of HPWS on OCB was found to be significant ($\beta = .0.423, t = 8.890, p < .001$), and with the

inclusion of mediator (EE), the effect of HPWS on OCB was still significant ($\beta = .284, t = 5.3767, p < .001$) which indicate a complementary partial mediating role of EE in the relationship between HPWS and OCB. Furthermore, the Variance Accounted For (VAF) test was also conducted and the VAF value of 32.86.26% also confirmed partial mediation (Hair et al, 2019).

Table 6
Mediation Results - HPWS -> EE -> OCB

Total Effects (HPWS -> OCB)			**Direct Effect (HPWS -> OCB)**			**Indirect Effects of HPWS on OCB**						
β	***t-value***	***p-value***	***β***	***t-value***	***p-value***	***Hypothesis***	***β***	***SE***	***t-value***	***p-value***	***Percentile bootstrap 95% confidence interval***	
											Lower	***Upper***
0.423	8.890	0.000	0.284	5.376	0.000	H5: HPWS -> EE -> OCB	0.139	0.024	5.813	0.000	0.102	0.181

Note. HPWS: High-Performance Work System, EE: Employee Engagement, OCB: Organizational Citizenship Behaviour, SE: Standard Error

Moderation Analysis

The moderating role of Organizational Justice on the relationship between HPWS and Employee Engagement (EE) was tested using PLS-SEM employing two-staged approach through SmartPls 4. The results showed that on including the interaction term (HPWS*OJ) the explained variance (R^2) of EE increased from 0.252 to 0.309, resulting in improvement in the model fit. Next, the analysis of the significance of OJ's moderating effect was also found to be statistically significant (H_8:$\beta = 0.066, t = 2.821, p < 0.05$; 95% CI $[0.252, 0.419]$) providing evidence of OJ's significantly positive moderating effect (see Table 7). Furthermore, the analysis of the Cohen's (1988) effect size was found to be 0.021, suggesting a weak yet meaningful moderating effect of OJ on the link between HPWS and EE.

Table 7
*Moderation Results - (HPWS*OJ) -> EE*

Relationship	***Coefficient***	***SE***	***t-value***	***p-value***
Moderation Effect (HPWS*OJ) -> EE	0.066	0.036	2.821	0.031
TL -> EE	0.147	0.047	3.133	0.001

Note. HPWS: High-Performance Work System, OJ: Organizational Justice, EE: Employee Engagement, SE: Standard Error

Additionally, the Slope analysis, as shown in figure 3 also revealed that the positive relationship between HPWS and EE varies across levels of OJ as the steeper upward slope of OJ indicates a stronger positive effect of HPWS on EE in perceived justice context, supporting the hypothesized moderating role of OJ on the link between HPWS and EE.

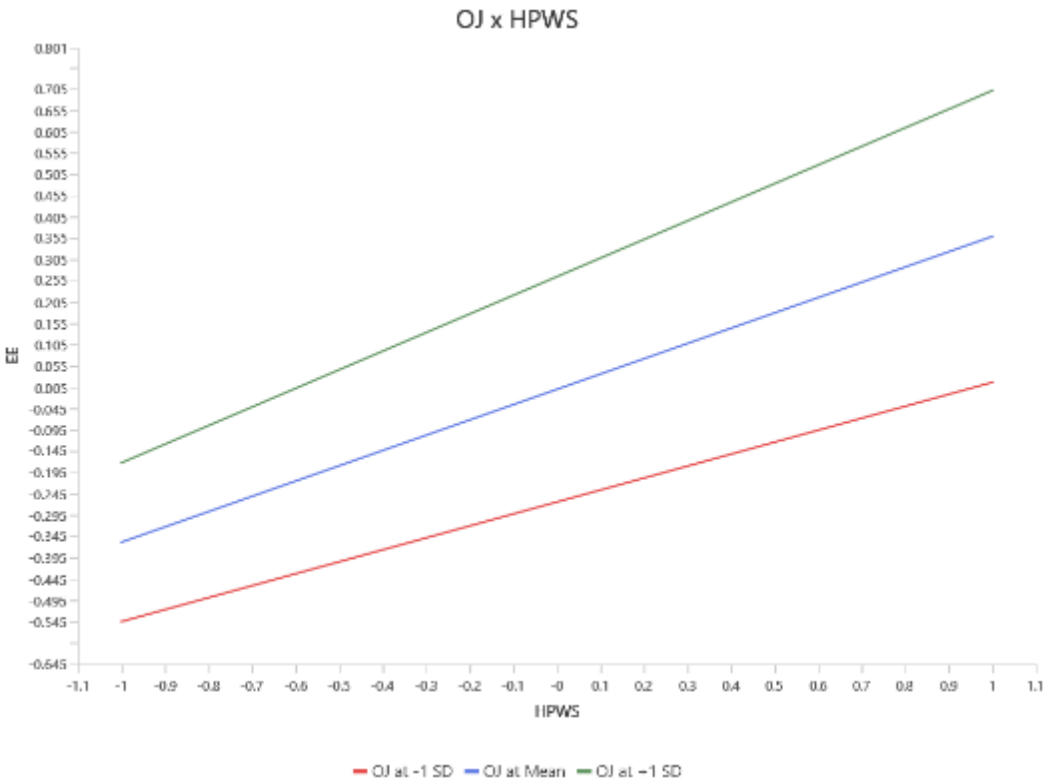

Figure 3 Moderation effect

Discussion

The study aimed to investigate the impact of HPWS on Healthcare professionals' performance and organizational citizenship behaviour, including employee engagement (EE) as a mediator and Organizational Justice as a moderator. The findings, consistent with Barney's (1991) Resource-Based View (RBV) confirmed that HPWS, through its strategically aligned HR practices reinforces human capital which leads to sustained performance. Similarly, consistent with Appelbaum et al.'s (2000) AMO framework, the HPWS functions to enhance healthcare professionals' capabilities, motivation, and opportunities to perform.

Furthermore, employees, as explained by Balu's (1964) SET, on perceiving organization's investment in them in the form of enhanced skills, abilities, and opportunities to perform feel psychologically engaged and reciprocate not only by performing their job roles but also indulge in discretionary citizenship behaviour, further confirming that EE serves as the underlying psychological mechanism through which HPWS yield positive employee outcomes such as enhanced performance and discretionary citizenship behaviour. These findings are in line with findings of previous studies conducted in the services sector (Akhtar et al., 2016; Muduli, et al., 2016; Arefin et al., 2019; Luu, 2019), and especially healthcare-focused studies (Salsabil, Adam, & Chan, 2022; Devi & Abadi, 2023; Karthik & Devi, 2023; Mankar, 2024; Padmata & Vangapandu, 2024 & 2025; Mach, Abrantes, & Alvarado, 2025). The study findings also confirmed that Healthcare professionals' perception of justice strengthens the link between HPWS and employee engagement as in the context of higher levels of fairness and equity, the motivational functioning of HPWS is magnified significantly which leads to higher levels of employee engagement, a finding consistent with the findings of Peprah (2020).

Conclusion

This study investigated the impact of HPWS on healthcare professionals' performance and OCB. Additionally, it explored the mediating role of employee engagement between the relationship of HPWS and outcome variables, and moderating role of organizational justice in the relationship between HPWS and employee engagement. Grounded in the theoretical perspectives of Resource-Based View, Ability-Motivation-Opportunity framework, and Job Demands-Resource (JD-R) model, the findings offer empirical evidence for all the hypothesized direct, mediating, and moderating relationships in the study model. Employee Engagement was found to be significantly mediating the relationship between HPWS and employee performance, and HPWS and OCB, while organizational justice moderated the relationship between HPWS and Employee Engagement.

The results of the present study underscore the importance of implementing integrated HR systems comprising congruent and synergistic skill-enhancing, motivation-enhancing, and empowerment- enhancing HR practices. The results further indicate that healthcare organizations by nurturing an engaged and fairly treated workforce can achieve the objective of developing sustainable human capital that can be instrumental in quality patient care delivery and enhanced organizational effectiveness. The study findings also align with the priorities of global sustainability standards. For example, enhanced employee performance and OCB of healthcare workers results in quality and reliable healthcare delivery contributing to the SDG 3 (Good Health and Well-Being), enhanced employee engagement and decent working conditions contribute to SDG 8 (Decent Work and Economic Growth), perception of fairness promote SDG 10 (Reduced inequalities), and justice-driven HRM practices align with SDG 16 (Peace, Justice, and Strong Institution).

Overall, the study findings demonstrate that implementation of justice-oriented HPWS serves as the sustainability-oriented strategy that while facilitating employee engagement and well-being, aims to enhance both employee and organizational effectiveness, and societal value.

Theoretical Implications

Firstly, the present study grounded in Barney's (1991) RBV, Appelbaum's (2000) AMO theory, Demerouti et al.'s (2001) JD-R framework, and Blau's (1964) SET, presents an integrated perspective, explaining as to how HPWS as a strategic and sustainable capability exerts influence in yielding positive employee outcomes in the healthcare sector. This integration furthers the theoretical underpinning by explaining how ability-motivation-opportunity enhancing HR practices function as core internal resources that strengthen the adaptive capacity of the healthcare organizations. In doing so, this integration aligns with the SDG 3 (Good Health and Well-Being) and SDG 8 (Decent work and Economic Growth) by conceptualizing human resources as drivers of both productivity and societal health outcomes.

Second, it contributes to the theoretical understanding of the link between HPWS and employee performance, and HPWS and OCB by incorporating employee engagement as a key mediator. It demonstrates how HPWS functions as a job resource that while cushioning the effects of job demands, helps in sustaining employees' vigor, motivation, commitment, and dedication especially in a high-demand, resource-constrained healthcare environment. The engagement mechanism, through its cognitive and emotional involvement, links strategic HR

practices to enhanced performance and organizational citizenship behaviour (OCB), advancing both the SET and JD-R perspectives. Theoretically, it asserts that organizations, in order to achieve sustainable performance, must not only ensure provision of resources but also nurture intrinsic motivation and wellbeing, corroborating SDG 8.5 (fulfilling and productive employment) and SDG 3.4 (promotion of mental health and well-being).

Third, by establishing organizational justice as a moderator, the study findings underscore that the HPWS through its strategically integrated ability-enhancing, motivation-enhancing, and opportunity-enhancing HR practices, in a context of justice, serves to create an engaged workforce which feels obligated to reciprocate with enhanced performance and discretionary citizenship behaviour, particularly in a dynamic, high-demand, and resource-constrained environments such as the public and private healthcare sector. This finding while aligning with SDG 16.6 (develop effective, accountable, and transparent institutions at all levels), and SDG 16.7 (ensuring responsive, inclusive, participatory, and representative decision-making at all levels) and SDG 10.3 (ensuring equal opportunities and reducing inequalities through fair policies) underscores the importance of justice-driven management in enhancing not only organizational outcomes but also institutional integrity and credibility.

Finally, by placing HPWS within sustainable human resource management framework, the study findings contribute to the evolving theory linking HR systems to sustainability and good governance. Furthermore, it positions HPWS as a sustainability-oriented capability which through its justice-driven and engagement-focused human resource management lead to responsible governance and sustainable healthcare systems. Consequently, the present study aligns well with SDG 3 (Good Health and Well-Being), SDG 8 (Decent Work and Economic Growth), SDG 10 (Reduced Inequalities), and SDG 16 (Peace, Justice, and Strong Institutions), emphasizing the importance of human-centered HR systems in fostering sustainable development at both organizational and institutional level.

Practical Implications

Firstly, considering the synergistic effects of HPWS in fostering an engaged and high-performing healthcare workforce, the managers and policymakers should recognize and prioritize the implementation of HPWS designed to enhance employees' capabilities, motivation, and empowerment which can help healthcare organizations to influence desired employee attitudes and behaviour leading to enhanced employee performance and improved healthcare delivery supporting the SDG 3 (Good Health and Well-Being), SDG 8 (Decent Work and Economic Growth).

Secondly, the healthcare administrators and decision-makers strategize cultivating a culture of justice which ensures fairness in distribution, procedural transparency, open communication, and fair treatment, as the perception of justice on part of employees plays a critical role in amplifying the positive effects of HPWS in furthering employee engagement leading to enhanced performance levels and discretionary citizenship behavior. Organizations, establishing explicit communication channels and grievance mechanisms and implementing human-centered equitable HR policies can achieve sustainable employee engagement and retention. Such actions, on part of organizations may contribute directly to SDG 16 (Peace, Justice, and Strong Institutions) by promoting fair and transparent HRM practices that contribute to effective, ethical, credible, and trustworthy institutions

Finaly, the healthcare institutions, faced with dynamic and unrelenting resource-constrained environment should aim to develop resilient HR strategies which, while aligning with the organizational goals and culture, and design and implement HPWS that through its justice-driven engagement practices seeks to transform their human capital into a skilled, motivated, and engaged healthcare professionals who promptly adapt to ever evolving healthcare demands and exhibit sustained employee performance and discretionary citizenship behaviour. This approach aligns well with the SDG 3 by improving quality of healthcare delivery and also promotes SDG 8 by ensuring decent work conditions, professional development, employee-wellbeing, sustained employee engagement, and performance within healthcare institutions.

Limitations and Future Directions

The present study had certain limitations. First, the study relied on cross-sectional research design which limits causal inference among the variables included in the study model. Second, the drawing of a snowball sample of 500 healthcare professionals across five purposively selected cities of Pakistan limits the generalizability of findings beyond the sampled population of healthcare professionals. Third, the quantitative-only approach of the study precluded the deeper understanding of the underlying mechanism at play. Thus, future researchers adopting longitudinal and mix-methods research design and utilizing probability-based sampling technique can ensure the contextual validity and results' robustness.

References

Aboramadan, M., Kundi, Y. M., Elhamalawy, E., & Albashiti, B. (2022). The effect of high-performance work systems on risk-taking and organizational citizenship behaviors: the mediating role of perceived safety climate. *Employee Relations: The International Journal*, *44*(6), 1428-1447.

Albrecht, S. L., Bakker, A. B., Gruman, J. A., Macey, W. H., & Saks, A. M. (2015). Employee engagement, human resource management practices and competitive advantage: An integrated approach. *Journal of organizational effectiveness: People and performance*, *2*(1), 7-35.

Appelbaum E, Bailey T, Berg P, Kalleberg AL (2000) Manufacturing advantage: why high-performance work systems pay off. Cornell University Press, Ithaca

Arefin, M. S., Alam, M. S., Islam, M. R., & Rahaman, M. (2019). High-performance work systems and job engagement: The mediating role of psychological empowerment. *Cogent Business & Management*, *6*(1), 1664204.

Arefin, M. S., Faroque, O., Zhang, J., & Long, L. (2023). High-performance work systems and organizational citizenship behavior: the role of goal congruence and servant leadership. *International Journal of Emerging Markets*, *18*(11), 5432-5453.

Badru, A. F., Karadas, G., & Olugbade, O. A. (2024). Employee voice: the impact of high-performance work systems and organisational engagement climate. *The Service Industries Journal*, *44*(7-8), 563-591.

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. (2023). Job demands–resources theory: Ten years later. *Annual review of organizational psychology and organizational behavior*, *10*(1), 25-53.

Bashir, M., Wright, B. E., & Hassan, S. (2023). The interactive influence of public service motivation, perceived reward equity, and prosocial impact on employee engagement: a panel study in Pakistan. *Public Management Review*, *25*(7), 1213-1237.

Becker, B. E., & Hueslid, M. A. (1998). High Performance Work Systems and Firm Performance: A Synthesis of Research and Managerial Implications. *Research in Personnel and Human Resource Management, 16*, 53 – 101.

Bhoir, M., & Sinha, V. (2024). Employee well-being human resource practices: a systematic literature review and directions for future research. *Future Business Journal*, *10*(1), 95.

Bhutto, S. A., Jamal, Y., Rafiq, A., Nisa, N. U., Saifullah, S., & Hussain, M. (2021). Service-Oriented Organizational Citizenship Behavior in Restaurants: An Empirical Study from Pakistan. *The Journal of Asian Finance, Economics and Business*, *8*(11), 67-77.

Blau, P. (2017). *Exchange and power in social life*. Routledge.

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

Boxall, P., & Purcell, J. (2022). *Strategy and human resource management*. Bloomsbury Publishing.

Capelleras, J. L., Domi, S., & Belletti, G. (2021). Skill-enhancing human resource practices and firm performance: the mediating role of innovativeness. *Tourism Review*, *76*(6), 1279-1296.

Chen, L. F., & Khuangga, D. L. (2021). Configurational paths of employee reactions to corporate social responsibility: An organizational justice perspective. *Corporate Social Responsibility and Environmental Management*, *28*(1), 389-403.

Chen, Y. L., & Chen, S. J. (2023). Looking at both sides of high-performance work systems and individual performance: A job demands− resources model. *Journal of Management & Organization*, *29*(5), 872-892.

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research*, *295*(2), 295-336.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates, 20–26.

Colquitt, J. A., Hill, E. T., & De Cremer, D. (2023). Forever focused on fairness: 75 years of organizational justice in Personnel Psychology. *Personnel Psychology*, *76*(2), 413-435.

Colquitt, J. A., Scott, B. A., Rodell, J. B., Long, D. M., Zapata, C. P., Conlon, D. E., & Wesson, M. J. (2013). Justice at the millennium, a decade later: A meta-analytic test of social exchange and affect-based perspectives. *Journal of Applied Psychology*, *98*, 199–236.

Combs, J., Liu, Y., Hall, A., and Ketchen, D. (2006). How Much do High-Performance Work Practices Matter? A Meta-Analysis of Their Effects on Organisational Performance. *Personnel Psychology, 59*, 501– 528.

Creswell, J. W. (2014). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th ed.). Thousand Oaks, CA: Sage.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage

Diamantopoulos, A., & Winklhofer, H. M. (2001). Index construction with formative indicators: An alternative to scale development. *Journal of marketing research*, *38*(2), 269-277.

Diaz-Carrion, R., López-Fernández, M., & Romero-Fernandez, P. M. (2020). Sustainable human resource management and employee engagement: A holistic assessment instrument. *Corporate Social Responsibility and Environmental Management*, *27*(4), 1749-1760.

Edgar, F., Zhang, J. A., & Blaker, N. M. (2021). The HPWS and AMO: A dynamic study of system- and individual-level effects. *International Journal of Manpower*, *42*(5), 794-809.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. Behavior research methods, 41(4), 1149-1160.Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, *18*(1), 39-50.

Fouquereau, E., Morin, A. J., Huyghebaert, T., Chevalier, S., Coillot, H., & Gillet, N. (2020). On the value of considering specific facets of interactional justice perceptions. *Frontiers in Psychology*, *11*, 812.

Goodhue, D.L., Lewis, W. and Thompson, R. (2012) Does PLS Have Advantages for Small Sample Sizes or Non-Moral Data? MIS Quarterly, 36, 981-1001.

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American sociological review*, 161-178.

Gouldner, A. W. (2023). The importance of something for nothing. *Mauss international*, *3*(1), 63-98.

Greenberg, J. (1987). A taxonomy of organizational justice theories. *Academy of Management review*, *12*(1), 9-22.

Groenewald, C. A., Groenewald, E. S., Kilag, O. K., Andrin, G., Pernites, M. J., & Macapaz, M. K. (2024). Optimizing Human Capital: Exploring the Effectiveness of HRM Systems. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE)*, *1*(3), 85-92.

Groenewald, C. A., Groenewald, E., Uy, F., Kilag, O. K., Abendan, C. F., & Pernites, M. J. (2024). Driving Performance Improvement: HRM Approaches in Education Office Settings. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE)*, *1*(3), 135-141.

Guest, D. E. (2024). Strengthening links between HRM theories, HR practices and outcomes: A proposal to advance research on HRM and outcomes. *Human Resource Management Journal*.

Guest, D. E. (2025). Strengthening links between HRM theories, HR practices and outcomes: A proposal to advance research on HRM and outcomes. *Human Resource Management Journal*, *35*(1), 319-335.

Gupta, P., Singh, S., Broccardo, L., & Alzeiby, E. A. (2025). Examining the link between CSR perceptions and employee advocacy through organizational justice: Can corporate hypocrisy mitigate?. *Corporate Social Responsibility and Environmental Management*, *32*(1), 615-634.

Gupta, V., Mittal, S., Ilavarasan, P. V., & Budhwar, P. (2024). Pay-for-performance, procedural justice, OCB and job performance: a sequential mediation model. *Personnel review*, *53*(1), 136-154.

Ha, J. C., & Lee, J. W. (2022). Realization of a sustainable high-performance organization through procedural justice: the dual mediating role of organizational trust and organizational commitment. *Sustainability*, *14*(3), 1259.

Hair Jr, J., Page, M., & Brunsveld, N. (2019). Essentials of business research methods. Routledge.

Hair, J. F., Astrachan, C. B., Moisescu, O. I., Radomir, L., Sarstedt, M., Vaithilingam, S., & Ringle, C. M. (2021). Executing and interpreting applications of PLS-SEM: Updates for family business researchers. *Journal of Family Business Strategy*, *12*(3), 100392.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, *31*(1), 2-24.

Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, *1*(3), 100027.

Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial management & data systems*, *117*(3), 442-458.

Hair, Joseph & Hult, G. Tomas M. & Ringle, Christian & Sarstedt, Marko. (2014). A Primer on Partial Least Squares Structural Equation Modeling. *European Journal of Tourism Research, 6*(2), 211-213

Ho, H. C. (2024). A one-year prospective study of organizational justice and work attitudes: an extended job demands-resources model. *Journal of Managerial Psychology*.

Hughes, C., Robert, L., Frady, K., & Arroyos, A. (2019). Artificial intelligence, employee engagement, fairness, and job outcomes. In *Managing technology and middle-and low-skilled employees* (pp. 61-68). Emerald Publishing Limited.

Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of management journal*, *38*(3), 635-672.

Jalali, A., Jaafar, M., Abdelsalam Al Rfoa, S. K., & Abhari, S. (2023). The indirect effect of high-performance work practices on employees' performance through trust in management. *Journal of Facilities Management*, *21*(2), 242-259.

Jatoi, S. A., Shah, S. S., Shah, A. S., & Channar, S. H. (2024). A nexus among high performance work systems, employee engagement, perspective-taking, trust in leader and organisational innovation: an insight from developing country. *Journal of Health Organization and Management*.

Jaya, W. I., Matriadi, F., Faliza, N., Marbawi, M., Mariyudi, M., Ikramuddin, I., & Arifin, A. H. (2024). The Influence of High-Performance Work Systems and Servant Leadership on Organizational Performance through the Mediation Role of Employee Work Engagement at Bank Indonesia Representative Aceh. *E-Mabis: Jurnal Ekonomi Manajemen dan Bisnis*, *25*(1), 10-19.

Johar, E. R., Rosli, N., Juhari, N. F., Khairi, S. M. M., & Nor, N. M. (2024). Driving Employee Engagement: Examining the Synergy of Ability, Motivation, and Opportunity-Enhancing Practices. *European Journal of Sustainable Development*, *13*(2), 182-182.

Jumakil, R. Y., & Dewi, S. T. (2024). The influence of human resource development and motivation on the performance of health workers at Lepo-Lepo health center, Kendari city, southeast Sulawesi province, Indonesia, 2024. *World Journal of Advanced Research and Reviews*, *23*(1), 481-488.

Karthik, P., & Devi, V. R. (2023). High-Performance Work Systems in the Healthcare Industry: A Systematic Literature Review. *Management and Labour Studies*, *48*(4), 578-606.

Kato, Y., Chiba, R., & Shimazu, A. (2021). Work engagement and the validity of job demands–resources model among nurses in Japan: a literature review. *Workplace Health & Safety*, *69*(7), 323-342.

Kilroy, S. (2024). High-performance work practices in health care: progress on key themes and prospects for future research. *Research Handbook on Contemporary Human Resource Management for Health Care*, 255-272.

Kim, B. J., Chang, Y., & Kim, T. H. (2023). Translating corporate social responsibility into financial performance: Exploring roles of work engagement and strategic coherence. *Corporate Social Responsibility and Environmental Management*, *30*(5), 2555-2573.

Kloutsiniotis, P. V., & Mihail, D. M. (2020). The effects of high-performance work systems in employees' service-oriented OCB. *International Journal of Hospitality Management*, *90*, 102610.

Knies, E., Boselie, P., Gould-Williams, J., & Vandenabeele, W. (2024). Strategic human resource management and public sector performance: context matters. *The international journal of human resource management*, *35*(14), 2432-2444.

Luu, T. T. (2019). Service-oriented high-performance work systems and service-oriented behaviours in public organizations: the mediating role of work engagement. *Public Management Review*, *21*(6), 789-816.

Ma, Y., Teng, Y., & Yan, B. (2024). Bring more than green? The impact of green human resource management on hospitality employees' organizational citizenship behaviors. *Corporate Social Responsibility and Environmental Management*, *31*(3), 2537-2556.

Mach, M., Abrantes, A. C. M., & Alvarado, J. R. (2025). The role of perceived human resource management practices in organizational citizenship behaviors: evidence from the healthcare sector. *Employee Relations: The International Journal*, *47*(1), 127-147.

Macias, T. A., Chapman, M., & Rai, P. (2024). Supervisor interactional injustice and employee counterproductive work behaviour and organisational citizenship behaviours: the mediating role of distrust. *International Journal of Organizational Analysis*, *32*(2), 318-332.

Malik, P., and Lenka, U. (2019), "Exploring the impact of perceived AMO framework on constructive and destructive deviance", International Journal of Manpower, Vol. 40, pp. 994-1011.

Malik, P., Malik, P., Meher, J. R., & Yadav, S. (2024). Assessing the relationship between AMO framework and talent retention: role of employee engagement and transformational leadership. *Journal of Organizational Effectiveness: People and Performance*.

Mankar, D. D. (2024). High Performance Work Practices in Hospitals: A way to maximise Business Performance and achieve Sustainable Growth. OrangeBooks Publication.

Maulia, I. R., & Ali, H. (2024). Factors Influencing Employee Engagement and Performance: Examination of Transformational Leadership and Empowerment. *Dinasti International Journal of Economics, Finance & Accounting (DIJEFA)*, *5*(2).

Mazzetti, G., Robledo, E., Vignoli, M., Topa, G., Guglielmi, D., & Schaufeli, W. B. (2023). Work engagement: A meta-analysis using the job demands-resources model. *Psychological reports*, *126*(3), 1069-1107.

Mebratie, E., Shanbel, B., Awoke, A., & Dessalegne, B. (2025). Knowledge-based human resource management practices and organizational performance in selected universities of Amhara regional state, Ethiopia: the moderating effect of intellectual capital. *Cogent Business & Management*, *12*(1), 2491688.

Muduli, A., Verma, S., & Datta, S. K. (2016). *High Performance Work System in India: Examining the Role of Employee Engagement. Journal of Asia-Pacific Business, 17(2), 130–150.*

Nassir, M., & Benoliel, P. (2024). Participative decision-making in the Arab educational system in Israel: The implications for teachers' organizational commitment and school violence. Educational Management Administration & Leadership, 17411432241273748.

Odiaka, K. U. (2020). *Employee engagement and its importance to HPWPs (High Performance Work Practices), employee outcome relationship in the Nigerian hotel sector*. University of Salford (United Kingdom).

Odiaka, K., & Chang, K. (2024). The efficacy of high-performance-work-practices (HPWPs) in enhancing employee engagement and service-oriented organisational citizenship behaviour: a qualitative study of hotel managers and employee. *International Journal of Organizational Analysis*.

Paauwe, J. (2024). AMO theory: how to improve abilities, motivation and opportunity to participate. In *Progressing Performance and Well-being at Work* (pp. 28-38). Edward Elgar Publishing.

Padamata, K., & Vangapandu, R. D. (2024). High-performance work systems and employee attitudes: evidence from Indian healthcare industry. *International journal of productivity and performance management*, *73*(5), 1609-1640.

Padamata, K., & Vangapandu, R. D. (2025). Unboxing the high-performance work systems causal chain in promoting healthcare quality: empirical evidence from Indian healthcare. *International Journal of Quality & Reliability Management*.

Pak, S., & Ju, B. (2024). Shared high-performance work system perceptions as a competitive advantage: mediating role of trust in management in the HPWS-performance link. *International Journal of Organizational Analysis*.

Paros, A. K. (2021). How participative management influences the female millennial knowledge worker. *Leadership & Organization Development Journal*, *42*(4), 606-616.

Peacock, R. P., Ivkovich, S. K., Van Craen, M., Mraović, I. C., Borovec, K., & Prpić, M. (2023). External procedural justice: do just supervisors shape officer trust and willingness to take the initiative with the public?. *International criminal justice review*, *33*(2), 109-128.

Peprah, E. O. (2020). The impact of high-performance work systems on employee engagement: The moderating role of organizational justice. *Business Excellence and Management*, *10*(4), 5-22.

Riaz, A., Mahmood, Z., Qammar, A., & Ali, I. (2024). How important is a high-performance work system to improve branch-level performance?. *International Journal of Organizational Analysis*.

Richards, D. A., Albert, L. S., & Schat, A. C. (2024). Attachment, stress and interactional justice. *Personnel Review*, *53*(6), 1375-1391.

Robbins, S. P., Judge, T. A., & Vohra, N. (2019). *Organizational Behaviour by Pearson 18e*. Pearson Education India.

Robert, N., & Mori, N. (2025). Effects of training needs assessment in enhancing employees' skills and firm performance. *Journal of Work-Applied Management*, 17(1), 82-98.

Rubel, M. R. B., Hung Kee, D. M., & Rimi, N. N. (2021). High-performance work practices and medical professionals' work outcomes: the mediating effect of perceived organizational support. *Journal of Advances in Management Research*, *18*(3), 368-391.

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of managerial psychology*, *21*(7), 600-619.

Saks, A. M. (2021). Multiple targets and referents of employee engagement. In *A Research Agenda for Employee Engagement in a Changing World of Work* (pp. 21-36). Edward Elgar Publishing.

Saks, A. M. (2022). Caring human resources management and employee engagement. *Human resource management review*, *32*(3), 100835.

Salsabil, M. D. I., Adam, M., & Chan, S. (2022). The impact of high work performance practices on hospital employee performance: the mediation moderation of employee engagement and employee extra role. *International Journal of Management and Economics Invention*, *8*(07), 2487-2494.

Sanders, K. (2022). The human resource management-outcomes relationship: An attributional HR process perspective. In A research agenda for strategic human resource management (pp. 45-66). Edward Elgar Publishing.

Sanders, K., Song, L. J., Wang, Z., & Bednall, T. C. (2022). New frontiers in HR practices and HR processes: Evidence from Asia. *Asia Pacific Journal of Human Resources*, *60*(4), 703-720.

Sarstedt, M., Hair, J. F., Ringle, C. M., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with PLS and CBSEM: Where the bias lies!. *Journal of business research*, *69*(10), 3998-4010.

Saunders, M., Lewis, P., & Thornhill, A. (2014). Research methods for business students. Pearson education.

Schaufeli, W. (2021). Engaging leadership: How to promote work engagement?. *Frontiers in psychology*, *12*, 754556.

Schaufeli, W. B., & Bakker, A. B. (2010). Defining and measuring work engagement: Bringing clarity to the concept. *Work engagement: A handbook of essential theory and research*, *12*, 10-24.

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness studies*, *3*, 71-92.

Soomro, I. H., Abro, Z., & Ahmad, M. S. (2024). Psychological contract breach and employee engagement: moderation of role of a high-performance work system. *Quality & Quantity*, *58*(4), 3363-3377.

Sun, L. Y., Aryee, S., & Law, K. S. (2007). High-performance human resource practices, citizenship behavior, and organizational performance: A relational perspective. *Academy of management Journal*, *50*(3), 558-577.

Takeuchi, R., Chen, G., & Lepak, D. P. (2009). Through the looking glass of a social system: Cross-level effects of high-performance work systems on employees' attitudes. *Personnel Psychology, 62*, 1-29.

Takeuchi, R., Lepak, D. P., Wang, H., & Takeuchi, K. (2007). An empirical examination of the mechanisms mediating between high-performance work systems and the performance of Japanese organizations. *Journal of Applied Psychology, 92*(4), 1069.

Úbeda-García, M., Marco-Lajara, B., Zaragoza-Sáez, P. C., Manresa-Marhuenda, E., & Poveda-Pareja, E. (2022). Green ambidexterity and environmental performance: The role of green human resources. *Corporate social responsibility and environmental management*, *29*(1), 32-45.

Vinzi, V. E., Chin, W. W., Henseler, J., & Wang, H. (2010). Handbook of Partial Least Squares: Concepts, Methods and Applications.

Wojtczuk-Turek, A., & Turek, D. (2021). HPWSs and employee performance in KIBS companies: a mediating–moderating analysis. *Baltic Journal of Management*, *16*(3), 345-365.

Yang, F., & Zhang, Y. (2022). Beyond formal exchange: An informal perspective on the role of leader humor on employee OCB. *Journal of Business Research*, *151*, 118-125.

Yang, J., Kim, Y., & Kim, P. B. (2021). Pushing forward high-performance work systems in the hotel industry: A procedural-justice climate to promote higher unit-level outcomes. *Tourism Management*, *87*, 104385.

Zhang, B., Liu, L., Cooke, F. L., Zhou, P., Sun, X., Zhang, S., ... & Bai, Y. (2022). The boundary conditions of high-performance work systems–organizational citizenship behavior relationship: A multiple-perspective exploration in the Chinese context. *Frontiers in psychology*, *12*, 743457.

Zhang, H., Yang, M., & Huo, B. (2021). The impact of empowerment-focused human resource management on relationship learning and innovation. *Industrial Management & Data Systems*, *121*(8), 1767-1783.