HIGH PERFORMANCE WORK SYSTEM AND ORGANIZATIONAL INNOVATION: THE MEDIATING ROLE OF INNOVATIVE WORK BEHAVIOUR

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Abstract

This research aims to examine the influence of High Performance Work System (HPWS) on organizational innovation Pakistan, with a focus on the mediating variable of Innovative Work Behavior (IWB) in the health sector of Pakistan. The study's sample comprises 530 doctors from the public and private hospitals within Sindh province of Pakistan both sectors. Data analysis was conducted using Smart PLS. The findings revealed that the intervening effect of IWB was partial, indicating its significant role in facilitating the correlation of HPWS with organizational innovation. Furthermore, the statistical hypotheses were accepted, confirming the presence of HPWS indicated positive and significant impact on both IWB and organizational innovation. The findings cast light on the significance of implementing HPWS in hospital settings to cultivate a culture of innovative work behavior, thereby enhancing organizational innovation. The current research adds to the existing reservoir of knowledge by providing empirical evidence on the mechanism by which HPWS influences innovation-related outcomes. These insights have practical implications for hospital management, emphasizing the need to prioritize and support HPWS practices to foster a more innovative work environment among healthcare professionals.

Key words: High performance work system (HPWS),Innovative work behaviour (IWB),Organizational innovation(OI)

1. Introduction

Continuous improvement in quality and cost reduction have been essential components for organizations to grow with sustainability and achieve success globally. These efforts by organizations quantify the amount of change from traditional thinking to innovative behaviour. Hence, the capacity of an organization to achieve a specific transformation is primarily affected by its aptitude for innovation (Sung & Kim, 2021).Therefore, these organizations progressively depending on innovation and considering innovation as a crucial driver for enhancement of quality and simultaneous reduction of cost(Carlucci et al., 2020).By doing so,these organizations emphasis the involvement of the employees and their participation in generating creative and innovative ideas. Employee's intelligence allows them to increase and test their creativity because it is one of the most essential factor from the multiple cognitive processes (Karwowski et al., 2020). However,(Kratsiotis, 2019)argued that for an organization, it is important to manage ideas and fit them into organizational need or problematic situation rather than focusing on how idea was generated. Additionally, the generation of ideas should be considered the focus of creativity rather than innovation. Therefore, IWB is considered the starting point for the recognition of the problems that need solutions and the generation of those ideas in the work environment(De Jong & Den Hartog, 2008; Janssen, 2003).As (Carlucci et al., 2020) have mentioned that IWB is an ingenious solution for problems and issues faced by employees. Hence, the employees need to perform the tasks and complete them according to the situation and environment around them. However, completion of a task does not display the criteria of performance, but an employee's behaviour is accountable for the completion of a task if they have demonstrated thoughtful workplace behaviour (Hsiao & Yang, 2011).The proactive behaviour of employees is an indication that employee is self initiator,ambitious, and going through self-improvements and correction while working (Parker et al., 2006).IWB is a consequence of such proactive behaviour by the employees. Innovation and creativity are conceived as necessary for innovative behaviour, but previous literature revealed that innovation and creativity are interchangeable terms used by researchers but do not have enough similar conditions for employees to have innovative behaviour. However, recent studies have clearly elaborated on IBW as an individual's capability of thinking according to job demand. Although employees engaging in innovative work behaviour may indicate that they are struggling to meet the criteria of their job demands, IWB has been proposed as a problem-focused coping strategy"(Bunce & West, 1994). HPWS is one of the practices of HRM that links the employee's feelings of being valuable to the productivity of an organization and stimulates employee behaviour. Employees attention towards their attitude and behaviour becomes prominent during periods of training and development; they feel motivated and encouraged to improve their skills and knowledge. The willingness of employees to improve work quality is admirable, and they welcome new and advanced methods of providing valuable services and processes based on continuous improvement. HRM practices, including HPWS, are aimed at encouraging the workforce to maintain their self-management, information, and involvement by keeping themselves engaged and empowered in working places(Dessler, 2013).

Although substantial amount of research has already been done on the impact of HPWS on organizational innovation, there remains a research gap that requires attention from scholars, particularly in the context of hospital services and the examination of employee behavior and

attitudes towards innovation. This research study holds significant importance as it focuses on systematically investigating this gap, which has been largely neglected in the hospital industry, especially in the province of Sindh, Pakistan. In this region, HRM practices still need to be promoted by management, and employees need to realize the significance of these practices for their career growth. Both public and private hospitals should prioritize the utilization of HRM practices to effectively support their employees. By addressing this research gap,this research intends to add to the body of knowledge and provide useful information to hospital administrators and policymakers. Each hospital setting has its own distinctive organizational structures, cultural dynamics, and regulatory frameworks. These factors can significantly influence the application and effectiveness of HPWS practices and their impact on fostering IWB and organizational innovation. Limited empirical evidence exists to comprehensively understand how HPWS practices are perceived, adopted, and implemented in these hospitals, and how they contribute to cultivating a culture of innovation, improving work quality, and driving organizational performance. Globally, it is increasingly crucial for the public hospital services sector to prioritize the enhancement of safety and quality while controlling costs and implementing changes to existing practices. In order to facilitate these changes, hospitals require a psychologically stable workforce that is capable of managing and addressing the risks and challenges that arise from the external environment. Additionally, this workforce should be able to foster cooperation among their peers and contribute to the provision of high-quality services to patients in an efficient and effective manner. Public hospitals that adopt a HPWS approach have the potential to attain their target performance goals.(Ugheoke et al., 2015).This research study highlights the relationship of HPWS with organizational innovation and also examine mediating effect of IWB between this relationship. The theoretical model of current research aims to demonstrate the significance of relationship of HPWS with organizational innovation in public and private hospitals, as a result explanation of expected influence of HPWS and IWB on success of organizational innovation. Therefore, this research study serves to the current corpus of publications by looking into the relationship of HPWS with organizational innovation, specifically by investigating IWB as mediator.

2. Theoretical Background and Development of Hypothesis

According to social-exchange theory, positive attitudes and behaviors of employees are reciprocated with organizational benefits (Allen et al., 2003; Madden et al., 2017). Furthermore, employees view HPWS as authentication of organizational support, and employees reciprocate by engaging in creative activities and innovative behaviors. Social exchange theory is most popular theory that is based on reciprocity used to explain the influence of HPWS literature particularly at the individual level. According to (Kmieciak, 2021) IWB entails the utilization of specific procedures that empower employees to proficiently execute innovative concepts and adjust operational tactics with the goal of improving outcomes. The essential attributes of IWB serves as an integral component in augmenting the operations and activities of proficient employees across various sectors and exerting a positive influence on service outcomes(Adam, 2022).Each individual has unique beliefs, views, and talents, and by recognizing these differences, organizations may put more of a focus on HRM practices that encourage innovation and creativity in the workplace. Using these well-known theoretical viewpoints as a foundation, this study suggests an integrated model to look at the interaction between HPWS,IWB and organizational innovation.

2.1 HPWS and IWB

The researchers in their previous researches found that HPWS were more focused on the organization's performance(Husin et al., 2021).The empirical link between HPWS and IWB has not been sufficiently analyzed in existing literature. However, it suggests that HPWS and IWB are complementary to each other, implying that implementing HPWS can potentially enhance IWB in employees.Since the employees who are well equipped with skills and knowledge can generate more ideas and can be more innovative in comparison of non trained employee. There are few studies that show the connection between HPWS and IWB(Fu et al., 2015; Husin et al., 2021) found in their research that HPWS and IWB have valuable chain with each other because IWB found as contextual factor of HPWS and comprehensive connection between employee's IWB, HRM practices and innovation enhance the performance. these practices foster the association of employees and organization via structure and culture of organization. Through this integration, workers are also valued and given the opportunity to generate, apply, and share knowledge via their behaviour.(Mrisho & Gwaltu, 2023) concluded in their research that proper utilization of HPWS has positive and high impact on IWB in the organization.(Jensen et al., 2013) in their seminal work suggested that HPWS is mostly helpful for organizations in establishing an organizational climate that eliminate the discrimination among the employees and provide them equal opportunities.

Study conducted by (Abstein & Spieth, 2014) has shown that escalating of opportunities for employees is better way to apply their professional expertise, abilities and knowledge is an effective approach to fostering strong relationship with employee innovation.The prior research describe it as the employees having more innovative work behaviour the more organization grows in the productivity and performance. As (De Jong & Den Hartog, 2008) mentioned in their work that employee's IWB positively stimulate working environment of organization for better performance. IWB oriented organizations treat their employees as assets and key element in generating creative ideas to drive the strength of organization. It has been possible in account of HRM practices in the organizations where employees are showing interest in learning and offering their skills according in innovative ways.(Jeong & Shin, 2019)concluded their empirical study that HRM practices facilitate the employees with environment where they are integrated with each other informally as well as formally and learn ,adopt and understand the behaviors of each other. Additionally, the organization combines all HRM strategies to achieve goals and increase the performance.The prior literature,for example (Schuler & Jackson, 1987) stated the perspective of HPWS that stimulates the employees behaviour to involve in the innovation related to human side , HPWS practices like Job security, information and knowledge sharing, training and development and decision-making involvement most probably influence the employee 's behaviour. However, in hospital industry practice of HPWS is highly important because of nature and structure of industry and without HPWS it is difficult to examine employee attitudes and behaviors and its antecedents(Yong et al., 2018) .However IWB related to the human creativity ,IWB is evident in condition when organizations need innovation for stagnant process and unsolved problems (West, 2002).Therefore hypothesis is developed .

H1: HPWS has positive and significant impact on IWB

2.2 HPWS and Organizational Innovation

The prior research is empirically evident that association between HRM practices and innovation is significant and positive. The previous research has also focused that organization ultimately influences the employee's behaviour and motivation towards the work through implications of HRM practices. (Ugheoke et al., 2015)in their research stated that HPWS have a significant impact on organizational performance if organizations are well connected and invested time and cost to HPWS and effectively respond to changes.Past researches provided the evidence that HPWS is closely and positively associated with organizational innovation. Research studies by (De Winne & Sels, 2010); (Shipton et al., 2005)found in their researches that technological and product innovation positively affected by HPWS related practices of employee. However to get organizational innovation employee's participation is important via HPWS and organizations must adopt HPWS. It is because employees are inspired to innovate by the advancement of their knowledge, abilities, and skills. Organizational innovation and HPWS related practices are directly associated with each other(Poorkavoos et al., 2016).The empirical research conducted by (Rasheed et al., 2017) concluded that HPSW had direct effect on organizational innovation and HPWS is strong driver for innovation. therefore, concluding from the previous empirical research evidences the hypothesis is proposed that :

H2: High performance work system has significant and positive impact on organizational innovation.

2.3 IWB and organizational innovation

Evidently, organizational innovation is major driver of organization performance, and the extent literature shows that impact of innovation in work behaviour has positive impact on organizational outcomes. (Fu et al., 2015)concluded in their research that the utilization of HRM practices enhances the capacity of organizations to innovate. The basic need for innovation in organizations is to manage both short- and long-term goals by involving employees in all three types of innovation (service, process, and administrative)(Damanpour et al., 2009). Employee's imagination, creativity and dynamic ability have played an important role in development of organizational innovation, and via HPSW it has been possible to identify and develop IWB(Ramamoorthy et al., 2005). As it was previously mentioned, allowing employees to share their ideas enables them to learn more, gain knowledge, and sharpen their skills for better performance at the individual as well as organizational levels. These ideas not only enable employees to work but also allow them to adopt changes in an innovative way.Their attitude towards work is significantly influenced, and their behaviour considerably becomes positive in favourable work conditions. Favourable exchanges also enable employees to keep their attitude and behaviour positive towards their leader. The satisfaction and motivation of employees from the organization is the change from thinking and perceiving job tasks, problems, and issues to behaviour of achieving and solving. Management of employees according to their capacity for work and intelligence has been ignored by many organizations.(Fu et al., 2015)assert that key factors for organizational innovation are human resources, and their management has not received enough attention. (Hence, individual behaviour and

organizational behaviour stimulate organizational innovation, which is an important and core element for organizational effectiveness, development, and growth.) (Hurley et al., 2005) conducted an analysis on organizational innovation and found that the capability of innovation in organizations causes them to introduce new products through the integration of strategic orientation with innovative behaviour and procedures to gain a competitive advantage against rivals. Therefore, the hypothesis is postulated:

H3:IWB has positive and significant impact on organizational innovation .

2.4 Mediating role of IWB between HPWS and organizational innovation

HPWS is considered an investment in employees by organizations in connection with resource-based view (RBV). It not only increases the performance of an organization but also enhances the skills and knowledge of employees and empowers them through individual autonomy.(Kaushik & Mukherjee, 2022).Impact of HRM practices on organizational innovation through intervening mechanisms that investigated the innovative work behaviour of employees as a mediating effect between the correlation of HPWS with organization innovation(Fu et al., 2015).Research work of (Boon et al., 2011) concluded that the role of HRM practices, e.g., rigorous selection, supportive work environment, training, or compensation, is considered a predictor of IWB. According to (Anderson et al., 2004),innovation on an individual level is concerned with various factors that are main actors and facilitators of innovation in the organization. The personality traits and characteristics of employees, their pro-activity, self-confidence, motivation, cognitive ability, and originality are considered fundamental elements of IWB. Therefore, it is important that employees have a strong personality and mental health so they can apprehend the future and have the thinking and stamina to face the challenges stemming from the changes . According to (Carlucci et al., 2020), employees are identified as innovative workers, having innovative behaviour at work with visions and being ambitious to tackle challenges and changes, learning to transfer and spread knowledge to coworkers, and organizing their ideas of being self-oriented and self-actualized. Further, with the mutual efforts of employees and organizations, the IWB can be nurtured and promoted. (Demircioglu, 2016) refers to the fact that innovation in any organization comes from authentic sources; these sources are the ideas of employees, leaders, leaders and management of the organization. In addition, these ideas stem from the innovation flow of Top-down and bottom-up, internal sources (employees) and external sources (competitors, other organizations). Further, each individual source influences organizational productivity, which is organizational performance and innovation, and employee productivity, which is "innovative behaviour by employees," which affects job satisfaction.(Prieto & Pérez-Santana, 2014)conducted their research to examine role of High Involvement Human Resource practices in the Innovative Work Behaviour of employees and supportive work environment conditions as mediators and found that High involvement of work system has positive impact on IWB, further study showed the that with positive IWB supported the employees and IWB 's positive impact over employees' ability, motivation, and opportunity and also this relation results in the sense of reciprocity in employees towards organization productivity and innovation. (Coetzer et al., 2018) conducted a study to understand the impact of IWB on

organizations and other employees. The study found a positive and significant impact of IWB on organizations and employees as well. However, the size of the organization was a matter of consideration. The research indicates that IWB as a mediator can affect the relationship between HPWS and organizational innovation. In this regard, it is expected that IWB mediates the relationship between HPWS and organizational innovation. The following hypothesis is proposed:

H4: IWB mediates the relationship between HPWS and organizational innovation.

3. Research Methodology

This study is conducted on a fundamental approach, which is the deductive approach, which involves data collection through the survey method. The study on HRM practices is mostly conducted through survey methods to collect the required data. The researchers collect data on various HRM practices and other behavioral and attitudinal variables to research the causal relationship among these variables (Prieto & Pérez-Santana, 2014).Data for this research is directly from the participants who were aimed to be involved in the study (Björkman et al., 2007) and a questionnaire was created to gather the information. Each construct had previously been produced by other researchers, and before each item was included in the questionnaire, it was ensured that it matched the study model. It was built by combining constructs with their items.

Data was collected through a cross-sectional study, as the data was collected once from the respondent and did not repeat(Sekaran & Bougie, 2016)).Data collection through cross-sectional analysis is advisable in situations in which casual links between variables are established. In the context of HRM practices, the links between variables represent the individual level where an employee's perception is important and affects their behaviour and attitude(Purcell & Hutchinson, 2007)The designed survey questionnaire incorporates items into a Likert scale survey. The questionnaire was used to capture data from the participants. Responses ranged from 1 to 5 on a scale from 1 (strongly disagree) to 5 (strongly disagree). The study's target population comprises doctors employed in public and private hospitals, as they possess first-hand practical experience of behaviour and attitudes and their influence on organizational performance through the implementation of HRM practices. The research considered the following variables with associated scales:

(A) HPWS

Measured with 16 items that were adopt from research work by(Fu et al., 2015; Huselid, 1995) In the questionnaire starts with HPWS observing the employee's behaviour of practices related to participation in improving quality, knowledge sharing ,communication , training and development ,performance appraisals and financial incentives.

(B) IWB

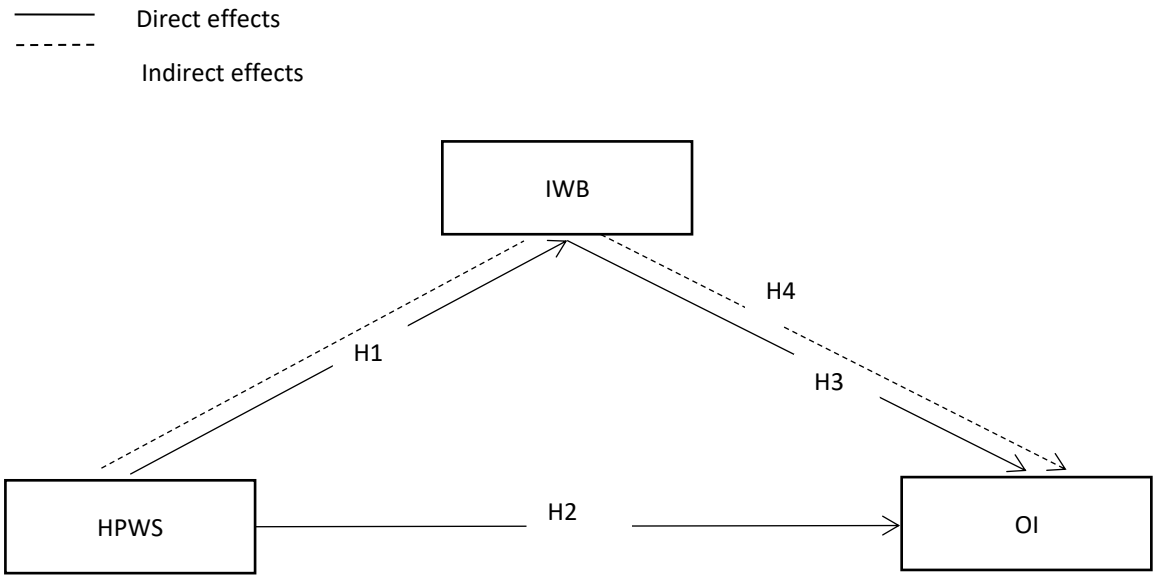
tInnovative Work Behaviour is measured with nine items and were adopted from (Janssen, 2003; Scott & Bruce, 1994).The instrument is currently evaluated on hree dimensions, namely

"idea generation", "idea propagation", and "idea realization". research utilized the IWB as a uni-dimensional construct to measure the innovative behavior of physicians while conducting their duties.

(C) Organizational Innovation

Organizational Innovation was measured by adopting a scale from research conducted by(Yang & Konrad, 2011). For this study nine items were adopted of scale. Organizational innovation is outcome of employees innovative work behaviour (Messmann & Mulder, 2012). Therefore, the participants were asked to examine the level of innovation of their organization to extent to which the hospitals have improved in services to satisfy the ultimate customers/ patients through new services ,products and process introduced in hospitals specifically when they are competing with other hospitals around.

Figure1. Research Model developed by author



3.4 Research Context

The service sector, which includes healthcare services, has been experiencing growth globally, and Pakistan is no exception. In Sindh, the second-largest province in the country, the availability and quality of healthcare services vary significantly between public and private hospitals. This research aims to explore the contrasting aspects of public and private healthcare facilities in Sindh, Pakistan. Understanding doctors' attitudes and behaviors is critical to fostering a culture of innovation within hospitals and improving overall healthcare delivery. In the context of healthcare, the adoption of HPWS has the potential to positively impact doctor

attitudes and behaviors, ultimately influencing innovation within hospitals. Doctor's innovative work behavior is essential for introducing novel ideas, practices, and solutions that enhance patient care and streamline healthcare processes. The healthcare industry in Sindh, Pakistan, relies heavily on the dedication and expertise of doctors to provide high-quality medical services and ensure positive patient outcomes.

The hospitals selected for data collection were 20 in number, from which 10 were public and 10 were private hospitals from major cities of Sindh i.e Karachi, Hyderabad, Sukkur, Mirpur khas and Shaheed banazirabad (Nawabshah). These hospitals are poplar regarding their services and they have their organizational structure ,culture and performance standards. The efficacy of the service sector in Pakistan is largely determined by its culture, performance evaluation, and emphasis on service quality. These elements contribute to the creation of a service-oriented environment, the enhancement of employee performance, and the delivery of quality consumer services (Kureshi et al., 2010).

Data collection for this research were based on online version. Google form link created on google software. The linked questionnaire proforma was sent to the participants through emails, personal telephonic contacts , in groups of doctors community on social media. As link was on a single click to open and was at feasibility of participants to response through. reminders were also sent to the participants through emails and SMS as to increase rate of response. The questionnaire includes a concise description of the research's purpose and assurances that respondents' confidentiality and privacy will be maintained.

4. Statistical Analysis and Results

Prior to conducting statistical analysis, the raw data underwent mandatory coding and formatting using SPSS version 29.0. Structural Equation Modelling (SEM) with Smart Partial Least Squares (PLS-SEM, 4.4.0) was utilized to evaluate the research model. A crucial step involved verifying the validity and reliability of all selected variables through a measurement model. By employing SEM-Based analysis, the study explored the predictor and criterion variables, along with their interrelationships.

4.1 Demographic Description

Respondent of this research were doctors from public and private hospitals of Sindh province. Twenty hospitals were taken in total ,ten were public and ten were private. 51% of respondents were from public hospitals participated and from private hospitals 49% of participants participated. Doctors from both sectors constitute data gender wise it was like 50.2%of female and male respondents were 49.8% of out total sample. All respondents also categorized according to their educational qualifications ,respondents with graduation were 44% and 56% of sample had post graduation degree in the field.

Table1. Demographic Information

Gender	Frequency	Percent
Female	266	50.2
Male	264	49.8
Total	530	100
Hospitals	Frequency	Percent
Public	270	50.9
Private	260	49.1
Total	530	100
Educational Qualification	Frequency	Percent
Graduation	232	43.8
Post Graduation	298	56.2
Total	530	100

4.2 Data Normality Test

Before applying statistical analysis normality of data was tested via application of SPSS 29.0 version . Normality is considered as a normal distribution of data to measure kurtosis and skewness (Hair et al., 2010), threshold values(±2.7) recommended by Sposito et al.(1983). Kurtosis/Skewness Values for HPWS (-1.044/.618),IWB (-1.600/.015), and organization innovation(-1.088/-.019) were recorded.

4.3 Measurement Model Analysis

The assessment of the current research model is done through Smart PLS version 4.0 by stepping two assessing approaches that are, Measurement and Structural model assessment(Anderson & Gerbing, 1988).Smart PLS4 provides the essence of simultaneously evaluated all latent constructs/unobserved variables and predictive relevance(Hair Jr et al.,

2021).The current study by nature is explanatory and PLS-SEM provides satisfactory and optimal procedures. In the Evaluation of measurement model, the validity and reliability of all constructs are verified in order to obtain the results for further analysis. (Hair et al., 2019)suggested that to check the factor loading of each construct in measurement model , for that purpose individual construct was loaded with factor scoring.(Hair et al., 2021)suggested loading score 0.40 to 0.708 are acceptable for analysis if it is not disturbing internal consistency. Further if loading score of any indicator is below 0.40 it be should be not be considered for model analysis(Hair et al., 2021).Outer loading of two items surpassed from HPWS, all other indicators of underlying construct perform well and loaded significantly between the suggested range of score and retained for the analysis.

The composite reliability examine the outer loading of indicators of all constructs(Hair et al., 2021)suggested that through high values of composite reliability give high level of reliability of constructs. On the assumption that all indicators rely equally on their respective constructs, Cronbach's Alpha measures internal consistency as well and cutoff value is .70(Hair et al., 2019).The value (Cronbach 'salpha, Composite Reliability) recorded for constructs as: HPWS(0.939,0.951),IWB(0.916,0.922),and organizational innovation(0.875,0.889) confirmed reliability according to cutoff score that has been suggested,Table2. depicts these values.

This study has been found to exhibit validity in the forms of convergent and discriminant validity. According to (Hair et al., 2021) convergent validity through average variance extracted (AVE) determines the variance in collection of indicators is explained by corresponding constructs. AVE ranges from 0 to 1 and is generally considered acceptable if it is above 0.5.The value recorded for all constructs exceeds the suggested criteria, HPWS(0.538),IWB (0.628)and Organizational innovation(0.500).Convergent validity is confirmed for the data. All values are exhibited in Table2.

Next stage to assess the discriminant validity of items was established via cross-loading, Heterotait-Monotrait ratio analysis and Fornell-Larcker (Fornell & Larcker, 1981)for correlation of constructs. A construct must have a square root of AVE that is greater than its correlations with other constructs in order to meet the Fornell and Larcker criteria. Square Roots of AVEs larger than those of their subordinate constructs are present in all constructions, indicating the discriminant validity of the constructs.

4.4 Structural Model (Inner Model) Analysis

As in measurement model reliability and validity of instruments and their measures confirmed. Next step is to identify if there is multi-collinrarity between exogenous variables and then to evaluate hypothesis with path coefficients through structural model. Structural model executed significance of path(Beta) coefficients, significance through (T) statistics, ($R^{2)}$ coefficient of determination,(*f2) effect* size,and (Q^2) predictive relevance or Stone-Geisser (Q^2).The R2 value threshold from 0 to 1. It indicates that R^2 with higher values indicating a greater explanatory power(Hair et al., 2021) and (Chin, 1998) Endogenous variable IWB (0.454) explaining that HPWS directly explained 45.4% variance in IWB and it is moderate variance and organizational innovation (0.412) depicts that variables IWB as exogenous variables predicting moderated 41.2% organizational innovation which indicates the moderate variance.

These R2 values demonstrate the effectiveness of exogenous factors as predictors of organizational innovation. The model's predictive relevance for IWB and organizational innovation (.453) is strong because of the Q2 for IWB (.498) relatively high from zero value. Relevant interpretations of the results are provided in Table 5.

To assess the endogenous variable i.e.,organizational innovation , VIF(variance inflation factor) values estimated through Smart PLS bootstrap. However, the VIF values for all independent variables in the model of organizational innovation were within the permissible range, that is, less than the acceptable threshold of 10.0 and with tolerances values exceeding 0.05. The exogenous variables for organizational innovation didn't have multi collinearity, as their VIF values were below the threshold of 10.0. The VIF values for the exogenous variable (HPWS VIF = 1.573), (IWB VIF = 2.345), were below hence current study confirmed that there is no multi-collinearity.

The effects of variables are prominent by hypothesized relationship between these variables in the given table and regression analysis outcome were produced in terms of β values and p value. The proposed hypothesis "HPWS has positive and significant impact on IWB" investigated and found that the direct impact of HPWS on IWB and path coefficient (β=.679, t value =26.527, p<.001).Thus hypothesis H1 significant and positively effected and supported .Other variables have been evaluated. Hypothesis H2 HPWS has significant and positive impact on organizational innovation investigated and found that the direct impact of HPWS on organizational innovation and(β =.199 and t value =3.786 and p<.001) the hypothesis "IWB has significant and positive impact on Organizational innovation" was tested and found significant and positive via effect of path coefficient (β=.487, t value =9.474, p<.001), hence it has been supported. Furthermore ,to test all hypothesis in the context of public and private hospital sector multi group analysis (MGA) was used for this research. Table 6.exhibit the results from which the direct impact of HPWS on IWB is (β=.631,t=16.728.p<.001) in private hospitals and (β=.701,t=21.534,P<.001) in public hospitals ,the coefficient indicate that in both sector hospitals H1 is supported. likewise hypothesis H2 and H3 tested and all hypothesis supported and accepted in direct effects. All relevant results are recorded and demonstrated in table 6.

4.5 Mediating Effects Analysis

The results for the significant indirect effects are provided in Table5. The mediation analysis was performed for proposed hypothesis with mediation "IWB mediates relationship between HPWS and organizational innovation" and the result turned out and interpreted from the table showed that HPWS has significant indirect effects on organizational innovation through intermediary function of IWB in table that(β=.331 t=9.106 and p<.001). The total effects of HPWS on organizational innovation are statistically significant, after inclusion of mediator effect of IWB. Further more after introducing mediating effect on the relationship the direct effect of HPWS on organizational innovation has been increased that is indicated by coefficient value. However the relationship between HPWS and organizational innovation is significant and positive and mediation is evident as partial. Hence hypothesis H4 is supported and turned out as significant and positive.H4 also tested through running multi-group analysis in private

hospital HPWS→IWB→organizational innovation β=.374,t=3.524,P<001.the mediation is partial in private hospital. IWB as intermediary function affects the relationship between HPWS and organizational innovation was significant and mediation was partial and the hypothesis accepted whereas recorded values were(β=.307,t=4.449,P<.001).

Table 2. Measurement Model Results

Construct	Scale	Loadings >.5	Alpha> 0.7	CR>0.7	AVE>0.5
High performance work syste	HPWS_1	0.715	0.939	0.951	0.538
	HPWS_2	0.779			
	HPWS_3	0.817			
	HPWS_4	0.770			
	HPWS_5	0.435			
	HPWS_6	0.348			
	HPWS_7	0.762			
	HPWS_8	0.687			
	HPWS_9	0.790			
	HPWS_10	0.810			
	HPWS_11	0.878			
	HPWS_12	0.819			
	HPWS_13	0.799			
	HPWS_14	0.687			
	HPWS_15	0.680			
	HPWS_16	0.761			
Innovative work behaviour	IWB_1	0.751			
	IWB_2	0.848	0.925	0.933	0.628
	IWB_3	0.821			
	IWB_4	0.833			
	IWB_5	0.666			
	IWB_6	0.827			
	IWB_7	0.826			
	IWB_8	0.845			
	IWB_9	0.692			
Organinal innovation	OI_1	0.703	0.875	0.889	0.500
	OI_2	0.744			
	OI_3	0.775			
	OI_4	0.778			
	OI_5	0.778			
	OI_6	0.606			
	OI_7	0.610			
	OI_8	0.679			
	OI_9	0.658			

Table 3. Discrminant Validity (Fornell Larcker)

	HPWS_	IWB_	OI_
HPWS_	0.771		
IWB_	0.679	0.793	
OI_	0.530	0.622	0.707

Table 4. Discriminant validity(Heterotrait Monotrait Ratio analysis)

	HPWS_	IWB_	OI_
HPWS_			
IWB_	0.709		
OI_	0.554	0.664	

Table 5.Path estimate Analysis

Hypothesis		Original sample (O)	T statistics (|O/STDEV|)	P values
H1	HPWS_ -> IWB_	0.679	20.000	
H2	HPWS_ -> OI_	0.199	0.000	
H3	IWB_ -> OI_	0.487	0.000	
H4	HPWS_ -> IWB_ -> OI_	0.331	0.000	

Table 6. R^2 Variance Explained and Predictive Relevance

	R-square	Q^2predict
IWB_	0.454	0.452
OI_	0.412	0.453

Table 7. Multigroup Analysis of Public and Private Hospitals

		Original (PRIVATE)	Original (PUBLIC)	t value (PRIVATE	t value (PUBLIC	p value (PRIVATE)	p value (PUB
H1	HPWS_ -> IWB_	0.631	0.701		1(	20.000	0.000
H2	HPWS_ -> OI_	0.036	0.282	0.460		0.646	0.000
H3	IWB_ -> OI_	0.593	0.438		8	0.000	0.000
H4	HPWS_ -> IWB ->	0.374	0.307		3	0.001	0.000

Table 8. Parametic Test

		Difference (PRIVATE - PUBLIC)	1-tailed (PRIVATE V	2-tailed (PRIVATE vs PUBLIC) p value
H1	HPWS_ -> IWB_	-0.070	0.918	0.165
H2	HPWS_ -> OI_	-0.179	0.996	0.008
H3	IWB_ -> OI_	0.155	0.066	0.131
H4	HPWS_ -> IWB -> OI_	-0.036	0.932	0.070

Figure 2.Measurement Model testing

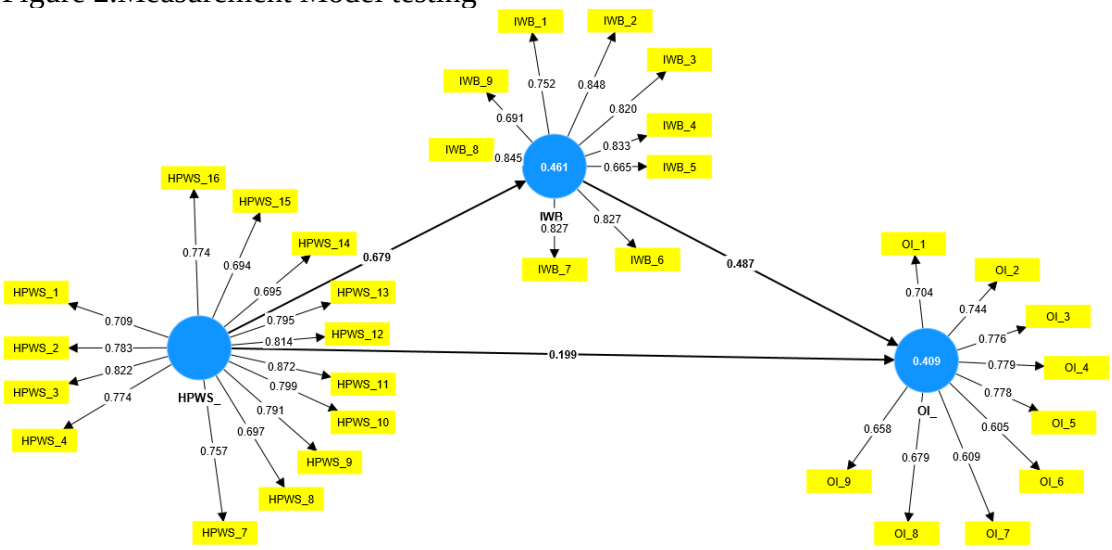
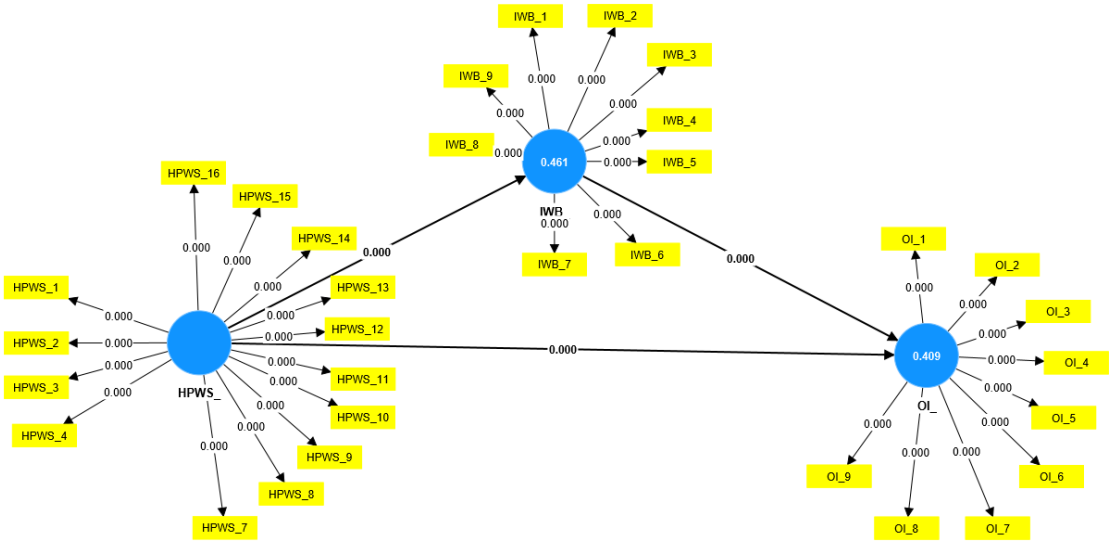


Figure 3.Structural Model testing



Figur5.Multi group analysis (private hospital)

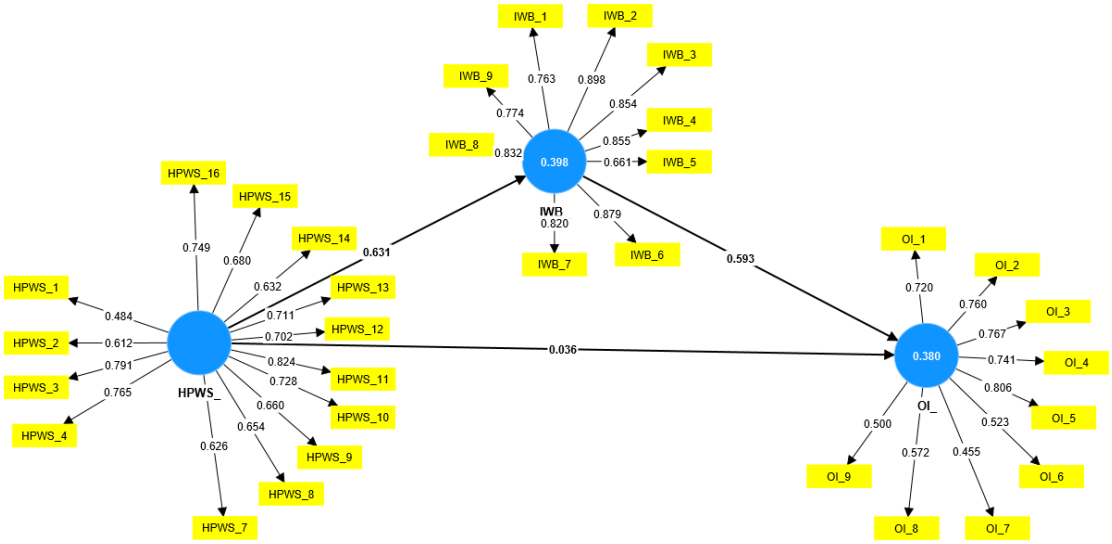
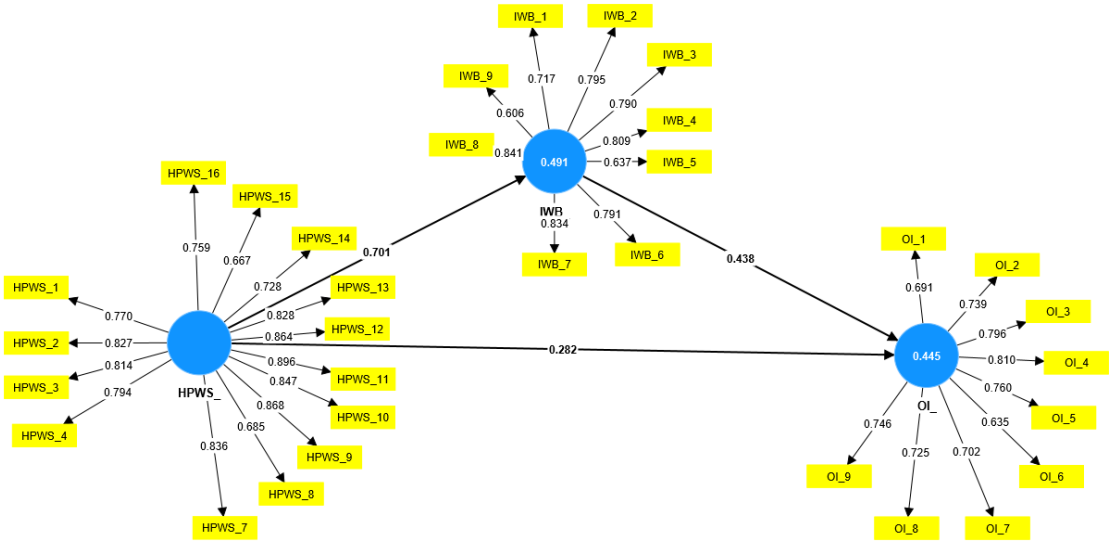


Figure 6. Multi group analysis (public hospitals)



5. Discussion of Research Results

The fundamental processes and mechanisms that support the association among HPWS, IWB and organizational innovation have, however, not been extensively studied. The research from past has shown the significance of attitudes and behaviors of employees in strengthening the association of HPWS with organizational performance. The findings show that HPWS influences IWB and organizational innovation, and IWB plays as intervening variable in the relationship. Evidence from the research of indicates that a positive relationship of HPWS with IWB in an organization has been developed using theoretical and empirical investigations. This study builds upon the body of literature in various ways. First, it introduces individual-level factors into theoretical models that explain the causal connection among HPWS , IWB and organizational innovation .The findings in current research supports the existing literature on mechanism that explains mediated relationship of HPWS and organizational innovation by IWB. The research in this line done by (Husin et al., 2021; Sanz-Valle & Jiménez-Jiménez, 2018). Second, it provide a contextual understanding of how HPWS, innovative work behavior, and organizational innovation interrelate in the public and private hospitals of Sindh, province. This is crucial as the public and private healthcare systems may have distinct organizational structures, cultures, and management practices that influence the impact of HPWS on innovation.The comparative analysis between public and private hospitals of Sindh province enhance the understanding factors such as innovative work behaviour driving innovation in each sector. However the finding in public sector indicates that HPWS has high direct impact on the innovative work behaviour of employees and as low on organizational innovation. However with introducing IWB as mediating variable the indirect effect decreases in

comparison of private hospitals. Therefore this research offers valuable insight into the differences and similarities in HPWS, innovative work behavior, and organizational innovation between these sectors. By investigating the impact of specific HPWS practices, such as employee involvement, training and development, and performance management, this research identifies that these practices are most influential in driving IWB and organizational innovation. This contributes to the theoretical development of HRM and innovation literature.

5.1 Practical implications

This specific research has important implications for healthcare organizations in Sinsdh, province of Pakistan. By examining the impact of HPWS on innovative work behavior and organizational innovation,findings of this study provide recommendations to policymakers and administrators in both public and private hospitals. It suggests that HRM practices should be implemented, taking into consideration the employees' perspectives on how these practices impact their attitudes and behaviors within the hospitals. By understanding how these practices influence employee perceptions and behaviors, hospitals can cultivate a culture of innovation, ultimately improving work quality and organizational performance. culture of innovation ,ultimately work quality and organizational performance. Additionally, it also suggests that creating a conducive work environment that fosters innovation in both public and private hospitals, ultimately benefiting the healthcare system as a whole.

Further, the investigation through mediated effect of IWB on relationship of HPWS with organizational innovation in the public and private hospitals of Sindh contributes to existing knowledge in the field. By exploring how IWB acts as a mechanism through which HPWS influences organizational innovation, the findings provide insights into the specific behaviors and actions that drive innovation within hospital settings.

5.2 Theoretical Implication

While there is extensive research on HPWS, IWB, and organizational innovation in various industries, there is a relative scarcity of studies specifically focused on the public and private hospitals sector of Sindh province of Pakistan. This research is to attempt to fill the gap by examining the unique context of hospitals in Pakistan and explore how HPWS practices influence IWB and organizational innovation within specific setting.

This research contributes to the validation of existing theoretical framework and model in the field of organizational behavior and innovation. By examining the correlation among HPWS, IWB, and organizational innovation in the public and private sector, this study tested the applicability and generalization of theory such as Social Exchange Theory within this specific context.

This research sheds light on the mediating mechanisms through which HPWS influences organizational innovation. By investigating the IWB as mediating variable, it contributes to our understanding of the specific behaviors, attitudes, and cognitive processes that link HPWS practices with innovative outcomes.therefore this enhance our knowledge of the underlying processes that drive organizational innovation.

This research provide insights into the boundary conditions and contingencies that affect the correlation among HPWS,IWB and organizational innovation. By examining these dynamics in the public and private hospitals of Sindh, province this study identify factors such as employee psychological response towards changes and working environment that influence the strength and direction of this relationship. research enhance our understanding of the role of HR practices, particularly HPWS, in fostering innovation within healthcare organizations.

5.3 Limitations of Research

This research is designed to collect cross-sectional data, and obviously restricts the capacity to create causal links and determine the long-term implications of HPWS on innovative work behavior and organizational innovation. Conducting longitudinal studies that track the changes over time and explore the causal relationships between variables can provide more robust evidence and contribute to a deeper understanding of the dynamics between HPWS, innovative work behavior, and organizational innovation. This study has acknowledged that IWB as an intervening variable the influence relationship of HPWS with organizational innovation partially, there is need for more in-depth research on the specific mechanisms through which this mediation occurs. Exploring the underlying processes, such as the role of employee motivation, creativity, knowledge sharing, or collaboration, can provide a deeper understanding of how employee IWB responds as a mediator in this relationship in this specific context.The hospitals in Sindh province has unique contextual factors that may influence the relationship among HPWS, IWB, and organizational innovation. These factors could include cultural values, regulatory environments, resource constraints, or leadership styles. Investigating the impact of these context-specific factors can help identify the boundary conditions and contingencies that shape the relationship of HPWS with organizational innovation within the hospitals of Sindh, Pakistan.

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