A Serial Mediation Model of Green Workplace Behavior at Banking Sector of Pakistan: Do Green HRM Practices Matter?

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ABSTRACT

Green workplace behavior has been gaining the global intention nowadays due to severe environmental conditions around the globe. Hence, this aspect needs the focus of recent literature and the present study examines serial mediation such as the role of green human resource management (HRM) practices on the high performance work system (HPWS), HPWS role on workplace spirituality and workplace spirituality role on green workplace behavior. The study also checks the moderating role of organizational commitment among workplace spirituality and green workplace behavior. The study gathered the primary data from the employees of banking sector in Pakistan using survey questionnaires. The study also used the smart-PLS to check the serial mediation and association among variables. The outcomes indicated that serial mediation has been exist and green HRM practices has a positive association with HPWS, HPWS has a positive association with workplace spirituality and workplace spirituality has a positive association with green workplace behavior. The results also exposed that organizational commitment significantly moderates among workplace spirituality and green workplace behavior. The study guides the policymakers in establishing new policies related to enhance the green workplace behavior using effective green HRM practices, HPWS, and extensive workplace spirituality.

Keywords: Human resource management (HRM) practices, high performance work system, serial mediation, workplace spirituality, green workplace behavior

INTRODUCTION

As economies have been growing for the expanding use of resources, plants and machineries, and increasing transportation environmental issues arise. The occurrence of environmental issues on the same rate are threatening to the weather, climate balance, geographical conditions, quality of natural resources, and health of human beings (Jiang et al., 2022). In such circumstances when economic growth is needed to be sustained mitigating the environmental challenges, green workplace behavior is a great revolution to businesses. Green workplace behavior is the actions that employees take with the aim to overcome environmental impacts of firm or to achieve organizational sustainability. It involves practices like recycling, energy conservation, waste reduction, promoting sustainable transportation, and initiating new

eco-friendly processes etc. (Carbone et al., 2024). Implementing green workplace behavior bring sustainability in economic growth as it fosters a healthy environment, maintains the quality of natural resources, provides healthy and active labor force, innovate the businesses, and increases productivity. Moreover, it boosts a healthy and prosperous community by protecting the health of the stakeholders, enhancing resources, increasing income level, and sustaining livelihood (He, Mushtaq, & Jan, 2024). As it's become the need of the hour, green workplace behavior catches attention of the researchers.

Green workplace behavior is a business sustainability measure that can be promoted by a number of factors linked with one another in a chain. Some of these factors are green human resources management (HRM) practices, high performance work system (HPWS), and workplace spirituality. Green HRM is the integration of green concepts into the HRM practices within organization. In encompasses the practices like green recruitment, rewards and compensation, green training, and green performance management. It enables workforce tackle with the environmental issues fostering a green workplace (Parida, Ananthram, Chan, & Brown, 2021). HPWS is a business approach where human resources are managed as to improve their abilities, skills, dedication, motivation, and work engagement. When employees are committed, highly competent, and responsible, they show better performance in conducting green projects. Hence, they adopt green workplace behavior (Ogiemwonyi, Alam, & Alotaibi, 2023). Workplace spirituality denotes how much employees are spiritually associated with the work assigned to them and organizational performance. If employees finds a purpose, have high moral values, and supportive community, they keep themselves right and incline to participate in ecological friendly practices. It leads to the implementation of green workplace behavior (M. Iqbal, Adawiyah, Suroso, & Wihuda, 2020).

The present study focuses on green workplace behavior in banking institutions in Pakistan. Pakistan is an emerging economy. According to 2024 statistics, Pakistan's nominal gross domestic product (GDP) is $373 billion and its purchasing power parity $1.670 trillion (Majeed & Zainab, 2021). Pakistan's banking intermediaries include Islamic banks, commercial banks, micro-finance banks, and specialized banks. State Bank of Pakistan (SBP) and Securities and Exchange Commission of Pakistan (SECP), are the top regulating institutions in financial system. Banking sector has considerable role in Pakistani financial sector. Only banking sector occupies 74% of the financial system's all assets and has 55% contribution to GDP out of 70% by financial sector. By the end of March 2018, 34 banks operate in Pakistan, dividing into 5 public banks, 5 foreign banks, twenty domestic private banks, and four specialized banks. Under branch network, there are 16000 branches working across the country (Rehman et al., 2021).

Banking institutions play a crucial role economy's smooth functioning. It facilitates to move financial resources to the real sector contributing to capital formation and helping financial transactions. But like other economic sectors, banking sectors has also been seen creating environmental issues which hinders its growth and may be a threat to economy. The present study with a debate on green workplace behavior would be an initiative to overcome environmental issues and promote sustainable development. The objective is to examine the role of three linked factors like green HRM practices, HPWS, and workplace spirituality in developing green workplace behavior. It also examines the impact of organizational commitment on relationship between workplace spirituality and green workplace behavior.

The present study has significant contribution to literature. First, there are several studies in literature, having discussion on the role of HRM practices in creating green workplace. But there are a few studies which go into detail and analyzes the role of factors like green HRM practices, HPWS, and workplace spirituality in developing green workplace behavior. The current study analyzing the role like green HRM practices, HPWS, and workplace spirituality in developing green workplace behavior adds to the literature. Second, the current study adopts quite a different approach to examine the role of like green HRM practices, HPWS, and workplace spirituality in developing green workplace behavior. It takes HPWS and workplace spirituality as mediators between green HRM practices and workplace spirituality,

workplace spirituality and green workplace behavior respectably. So, it extends the literature. Third, the literature contribution of the study stems from its selection of Pakistani banking sector for analysis of green workplace behavior as this sectors really needs green considerations.

This paper is divided into five parts: second part examines the relations among green HRM practices, HPWS, and workplace spirituality, and green workplace behavior in the light of previous studies. The third part, gives a short view of methods applied for conducting the study. In fourth part, proposed hypotheses are tested and discussed with reference to studies with similar points. In the end, study conclusion, implications, and limitations are given.

LITERATURE REVIEW

Different authors have written about the relation of factors like green HRM practices, HPWS, workplace spirituality, organizational commitment, and green workplace behavior. They differ in their propositions regarding relations among these factors. A number of studies are reviewed below, to check authors' views and establish hypotheses.

The firms where green HRM formed, policies are designed to improve and add to the employees competences and skills that they may comprehend better and perform well to response to current market demands. Hence, work system giving higher performance is assured (Shahzad, Jianguo, & Junaid, 2023). Aboramadan (2022), examines the relationship among green HRM, green work engagement, green innovative work behavior, and HPWS. The 208 employees serving in Palestinian higher education institutions, were the participants in primary data collection survey. The partial least squares-structural equation modeling was applied to test hypotheses. The study implies that if green HRM practices like green recruitment and green training are performed effectively, employees are sure to have better capabilities to operate business process as to meet economic and environmental requirements of customers. Chillakuri and Vanka (2022), investigates into the association of green HRM practices with HPWS. The study reveals that firms applying green HRM policies, focus on environmental friendly betterment in performance of employees and resources used in processes. As a result, an effective HPWS come into functioning.

H1: Green HRM practices has a positive association with HPWS.

The organization which have policy to promote HPWS, bring changes in HR policies as to win employee trust, dedication, and higher engagement as well as to improve mutual relation in employees with the aim to enhance their performance. The friendliness, morality, and attachment developed in employees motivate them to practice spiritual values at the workplace. It develops workplace spirituality (Rathee & Rajain, 2020). A research was conducted by Q. Iqbal, Ahmad, and Ahmad (2021), identify the relationship between HPWS measured by enhanced environmental performance, perceived job characteristics, and workplace spirituality. Data were received from 400 SME workers in Islamabad, Pakistan and New Delhi, India. Using SPSS version 24 and SmartPLS 3.0, SEM was applied for analysis. The study demonstrates that an effective HPWS removes flaws in employees and align their spiritual values with those of organization. This all boosts workplace spirituality. With a literature review of 152 articles published in 2003-2024, Bhardwaj, Choudhary, Chopra, and Chakraborty (2025), investigates impacts of HPWS on workplace spirituality. The bibliometrics package in R software and Vosviewer software were used for the analysis of articles. The study highlights that the organizations where HPWS is promoted, employees' capabilities are improved and sense of responsibility is developed. Better engagement and collaboration with peer workers, tend them to apply workplace spirituality. Thus,

H2: HPWS has a positive association with workplace spirituality.

Workplace spirituality aligns employees' values with organizational values and gives them a spiritual-purpose in work. It enhances employees' satisfaction level, removes their distress, increases mindfulness, and cognitive abilities. They better focus on environmental aspects associated with the work and take actions for environmental sustainability. So, workplace spirituality encourages green workplace behavior (Aftab et al., 2023). J. Iqbal et al. (2025), examines relationship between workplace spirituality, psychological green environment, ethical leadership, and employees' green behavior in Jammu and Kashmir India. The study used SEM trough SPSS and AMOS for analysis. The study posits that if there is workplace spirituality, employees have respect for the health of people and nature balance. The psychological concerns for environment motivate employees to show green behavior. Likewise, Javed, Wain, Ashraf, and Bashir (2022), examines the association between workplace spirituality, organizational engagement, and green workplace behavior in Pakistan. The study states that the firms where workplace spirituality is maintained, there is an effective team work. The resultant higher organizational engagement, motivate employees to work along with achieving environmental goals. Hence,

H3: Workplace spirituality has a positive association with green workplace behavior.

Under green HRM, the policies to deal with the employees are formed as not only to attain the economic goals but to mitigate the environmental issues arise during business processes. The employees having gone through green HRM practices have some specialized and superior cognitive and physical skills. The resultant employees' higher performance helps building HPWS (Muisyo, Qin, Ho, & Julius, 2022) The HPWS promoted by organization, creates a sense of responsibility and accountability in employees. These employees are likely to promote spiritual values like trust, honesty, brotherhood, humanity, courtesy, and morality. It supports spiritual workplace (Benevene & Buonomo, 2020). It improves HPWS. Zulfiqar (2025), states the association between green HRM practices, green service innovation, and green HPWS based on the ability-motivation-opportunity (AMO) framework. The research data were attained from 262 Pakistani banking employees and the SPSS PROCESS macro was used analyze data. The study states that under green HRM employees are trained and provided with greater knowledge. They have opportunity to think beyond their roles, consider society's needs, and importance of climate spiritually. The greater knowledge improves performance level and boosts workplace spirituality. So,

H4: HPWS is a significant mediator between green HRM practices and workplace spirituality.

The purpose of HPWS is to improve the capabilities, talents, and performance of employees for employing them to implement hard strategies and achieve grand utmost objectives. Here, employees are evaluated, appreciated, supported, and integrated that give rise to workplace spirituality. Employees with spiritual values consider it their responsibility to work as to maintain environmental quality. Hence, HPWS and workplace spirituality improve green workplace behavior (S. Iqbal, Bureš, Zanker, Abdullah, & Tootell, 2023). Karatepe, Rezapouraghdam, Hassannia, Karatepe, and Kim (2025), identifies the relationship of green HRM, workplace spirituality, environmental commitment, and green employee behavior. Data came from restaurant employees and their supervisors in China. Findings were drawn using SPSS PROCESS macro. The study conveys that in HPWS, in order to gain better performance outcomes from employees, teamwork is developed among them, and their dealings are refined. In this situation, positivity in employees as well as their relations promotes workplace spirituality and tend them participate into green practices. Anser, Shafique, Usman, Akhtar, and Ali (2021), also proclaims that HPWS maintained by firms, help them to have employees workplace spiritualty which enhances their dedication to better perform at workplace showing green behavior. Thus,

H5: Workplace spirituality is a significant mediator between HPWS and green workplace behavior.

Organizations work for different goals and form or amend policies and strategies to achieve the goals. In order to enact policies and strategies, organizations require efficiently performing workers. If

management develop organizational commitment in employees, they do their best and the strategy like workplace spiritually can be implemented effectively. And the organizations with high workplace spirituality show green workplace behavior (Bodhi, Chaturvedi, & Purohit, 2025). In a research article, Shah et al. (2023) talk about the association between organizational commitment, workplace spirituality, responsible leadership, and green workplace behavior. Research was conducted among 390 employees in Pakistani SMEs through questionnaires. PLS-SEM adopted to test propositions. The study proclaims that firms with committed workers may create workplace spirituality and thereby, the execution of green plans, boosts green workplace behavior. Francoeur, Paillé, Yuriev, and Boiral (2021), integrates the relationship between organizational commitment, workplace spirituality, and green workplace behavior. The study is based on the review of 53 papers published during years from 1977 to 2016. The study posits that employees with high organizational commitment, think for the goodness of organization and well-being of fellow workers. In such situation, the business strategies like workplace spirituality where employees' righteousness is required can be implemented. Moreover, committed employees with spirituality, execute green strategies wholeheartedly and effectively. So,

H6: Organizational commitment is a significant moderator between workplace spirituality and green workplace behavior.

RESEARCH METHODS

The study examines serial mediation such as the role of green HRM practices on the HPWS, HPWS role on workplace spirituality and workplace spirituality role on green workplace behavior and also checks the moderating role of organizational commitment among workplace spirituality and green workplace behavior. The study gathered the primary data from the employees of banking sector in Pakistan using survey questionnaires. The items were used to measure the variables such as green HRM practices is measure with seven items (Tang, Chen, Jiang, Paillé, & Jia, 2018), the HPWS is measured with five questions (Al-Ajlouni, 2021), workplace spirituality is also measured with five questions (Liu & Robertson, 2011), organizational commitment is measured with eight questions (Lim, 2012) and green workplace behavior is measured with five questions (Rayner & Morgan, 2018). These are given in Table 1.

Table 1: Measurements

Items	Statements	Sources
Green HRM Practices		
GHRMP1	"We attract green job candidates who use green criteria to select organizations".	(Tang et al., 2018)
GHRMP2	"We use green employer branding to attract green employees".	
GHRMP3	"Our firm recruits employees who have green awareness".	
GHRMP4	"We use green performance indicators in our performance management system and appraisals".	
GHRMP5	"Our firm sets green targets, goals and responsibilities for managers and employee".	
GHRMP6	"In our firm, managers are set objectives on achieving green outcomes".	
GHRMP7	"In our firm, there are dis-benefits in the performance management system for not meeting environment management goals".	
High Performance Work System		
HPWS1	"My organization offers continuous training".	(Al-Ajlouni, 2021)
HPWS2	"My organization has a formal programme for information sharing".	
HPWS3	"My organization offers internal promotions".	

HPWS4	"I receive a good salary rate".	
HPWS5	"My organization uses appraisal for individual performance".	
Workplace Spirituality		
WPS1	"It is important for me to give something back to my community".	(Liu & Robertson, 2011)
WPS2	"I am concerned about those who will come after me in life".	
WPS3	"Life is most worthwhile when it is lived in service to an important cause".	
WPS4	"Humans are mutually responsible to and for one another".	
WPS5	"I am easily and deeply touched when I see human misery and suffering".	
Organizational Commitment		
OC1	"I would be happy to spend the rest of my career with this organization".	(Lim, 2012)
OC2	"I enjoy discussing my organization with people outside it".	
OC3	"I really feel as if this organization's problems are my own.	
OC4	I think that I could not easily become attached to another organization as I am to this one".	
OC5	"I feel like 'part of the family' at my organization".	
OC6	"I feel 'emotionally attached' to this organization".	
OC7	"This organization has a great deal of personal meaning for me".	
OC8	"I feel a strong sense of belonging to my organization".	
Green Workplace Behavior		
GWPB1	"At work, I avoid wasting resources such as electricity or water".	(Rayner & Morgan, 2018)
GWPB2	"At work, I recycle".	
GWPB3	"Compared to others at my work, I minimize and recycle waste".	
GWPB4	"I have the ability to apply the initiatives in my workplace".	
GWPB5	"Environmentally friendly initiatives do bring real benefits to my workplace".	

The study has selected the employees of human resource department of the banking sector as the respondents. The surveys were sent to the employee using personal visits to the banks. The simple random sampling was used to select the employees. The researchers have distributed around 543 surveys but only 357 valid responses have received that have 65.75 percent response rate. Moreover, the study also used the smart-PLS to check the serial mediation and association among variables. It is a commonly used tool to check the association among variables using primary data and provides best results even though the researchers used complex models (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017). Finally, the study used a predictor named green HRM practices (GHRMP), the study also used two mediating variables named HPWS and workplace spirituality (WPS), the study also used one moderating variable named organizational commitment (OC) and one predictive variable named green workplace behavior (GWPB). These are given in Figure 1.
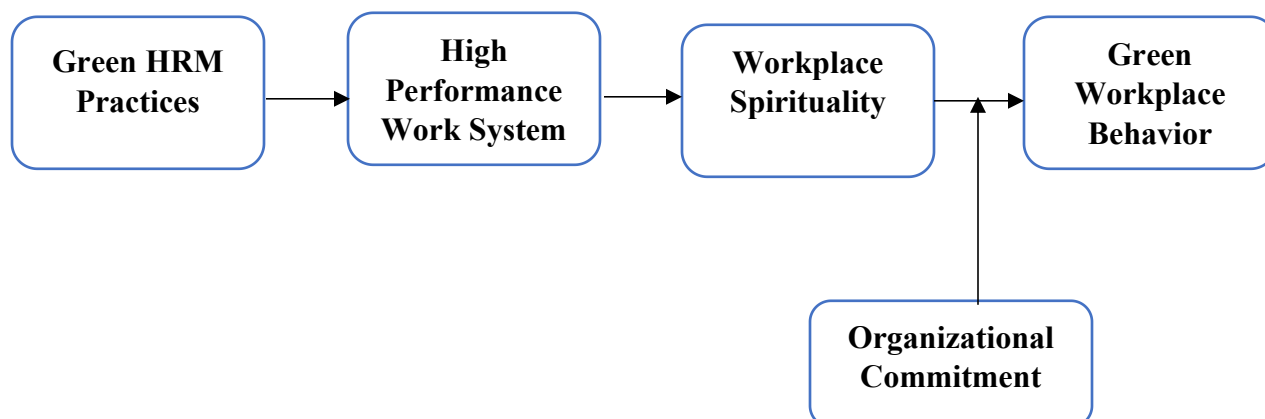
Figure 1: Research model

RESEARCH FINDINGS

The outcomes show the convergent validity that exposed the correlation between the items. The results indicated that factor loadings are larger than 0.50, average variance extracted (AVE) values are also more than 0.50, composite reliability (CR) and Cronbach Alpha values are also larger than 0.70. These values show a high correlation between the items and show a valid convergent validity. Table 2 and Figure 2 shows these values.

Table 2: Convergent validity

Constructs	Items	Loadings	Alpha	CR	AVE
Green HRM Practices	GHRMP1	0.585	0.851	0.888	0.533
	GHRMP2	0.808			
	GHRMP3	0.736			
	GHRMP4	0.812			
	GHRMP5	0.747			
	GHRMP6	0.734			
	GHRMP7	0.664			
Green Workplace Behavior	GWPB1	0.720	0.809	0.867	0.568
	GWPB2	0.721			
	GWPB3	0.794			
	GWPB4	0.804			
	GWPB5	0.723			
High Performance Work System	HPWS1	0.842	0.934	0.950	0.791
	HPWS2	0.945			
	HPWS3	0.917			
	HPWS4	0.865			
	HPWS5	0.876			
Organizational Commitment	OC1	0.843	0.905	0.923	0.601
	OC2	0.791			
	OC3	0.770			
	OC4	0.689			
	OC5	0.807			
	OC6	0.784			
	OC7	0.740			
	OC8	0.765			

Workplace Spirituality	WPS1	0.807	0.901	0.927	0.718
	WPS2	0.877			
	WPS3	0.854			
	WPS4	0.889			
	WPS5	0.806			

The outcomes show the discriminant validity that exposed the correlation between the variables. The results indicated that Heterotrait Monotrait (HTMT) ratio are less than 0.90. These values show a low correlation between the variables and show a valid discriminant validity. Table 3 shows these values.

Table 3: Discriminant validity

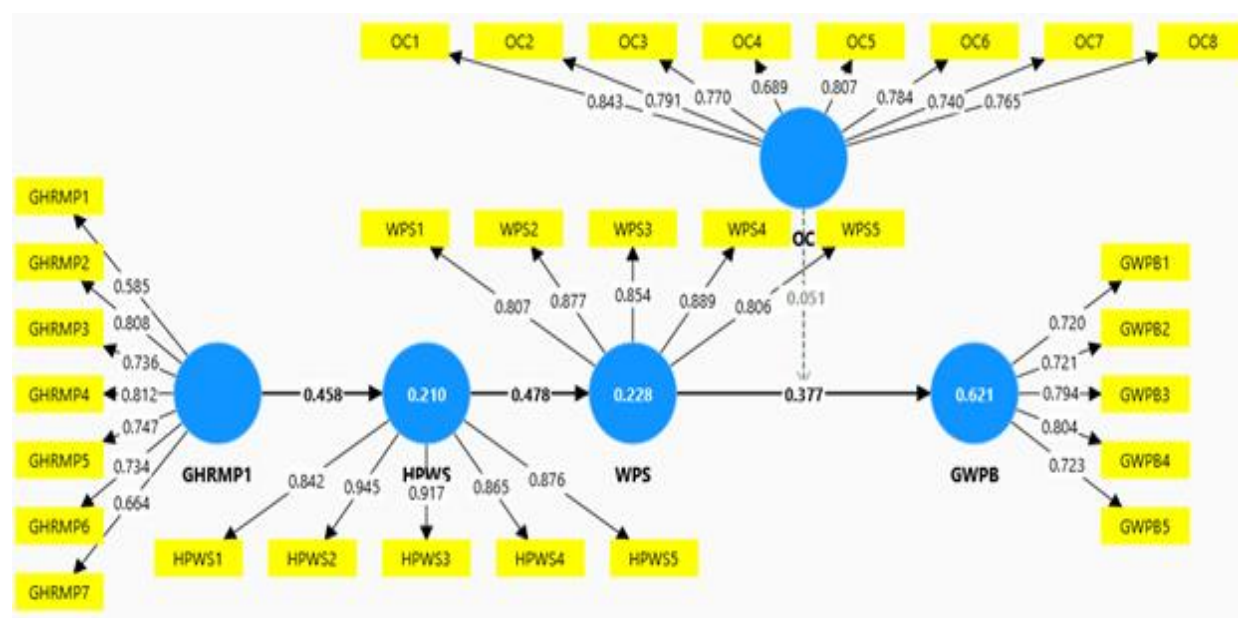|	GHRMP1	GWPB	HPWS	OC	WPS
GHRMP1					
GWPB	0.813				
HPWS	0.499	0.660			
OC	0.645	0.823	0.557		
WPS	0.627	0.800	0.518	0.658	

Figure 2: Measurement model assessment

The outcomes indicated that green HRM practices has a positive association with HPWS and accept H1, HPWS has a positive association with workplace spirituality and accept H2 and workplace spirituality has a positive association with green workplace behavior and accept H3. The results also indicated that HPWS and workplace spirituality significantly mediates among variables and accept H4 and H5. Finally, the results also exposed that organizational commitment significantly moderates among workplace spirituality and green workplace behavior and accept H6. These results are given in Table 4 and Figure 3.

Table 4: Path analysis

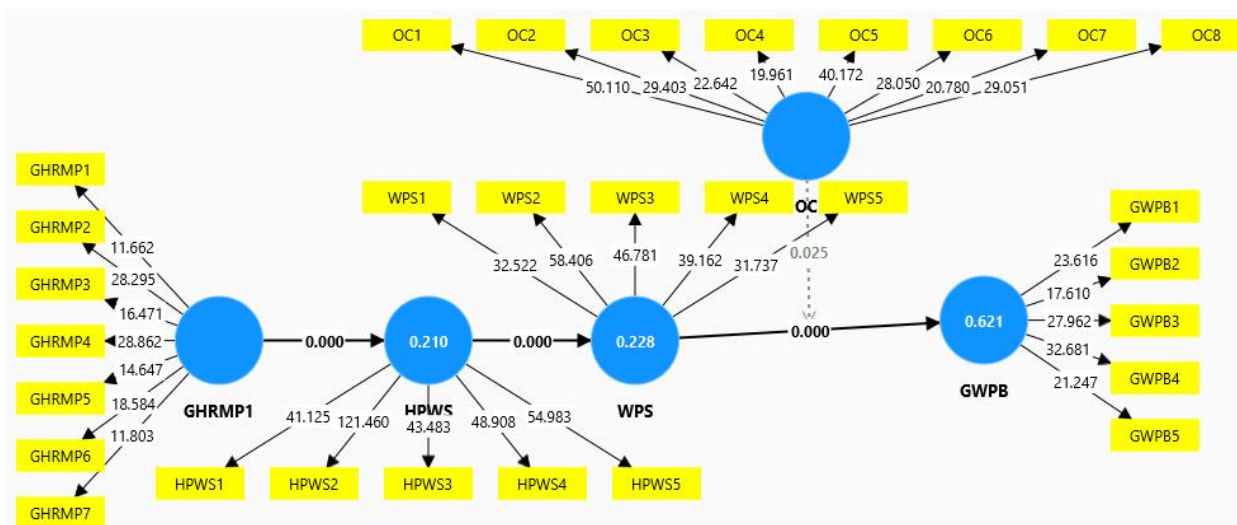| Relationships	Beta	Standard deviation	T statistics	P values
GHRMP1 -> HPWS	0.458	0.046	9.867	0.000
HPWS -> WPS	0.478	0.046	10.299	0.000
OC -> GWPB	0.472	0.040	11.730	0.000
WPS -> GWPB	0.377	0.043	8.683	0.000
OC x WPS -> GWPB	0.051	0.023	2.246	0.025
GHRMP1 -> HPWS -> WPS	0.219	0.039	5.672	0.000
HPWS -> WPS -> GWPB	0.180	0.029	6.286	0.000

Figure 3: Structural model assessment

DISCUSSIONS

The study results depicted that green HRM practices has a positive association with high performance work system. These results are supported by Chillakuri and Vanka (2021), which highlights that if in an organization, green HRM practices are run in order to manage workforce, employees can be prepared for exceeding performance. These results also align with Chen, Jiang, Li, and Gao (2021), which denotes that a high performance work system come into existence with the presence of competent workforce assured by green HRM practices. The study results depicted that high performance work system has a positive association with workplace spirituality. The study of Indradevi (2020), supports these results. The study implies that when an organization promotes a high performance work system, all employees experience spiritual values at the workplace. These results also agree with Jena (2022), which posits that in high performance work system, usually employees work in the form of teams and the cooperative closeness of workers, creates workplace spirituality.

The study results depicted that workplace spirituality has a positive association with green workplace behavior. These results are supported by Adnan, Bhatti, and Farooq (2020), which claims that in workplace spirituality, employees perform considering moral responsibilities towards organization and all affected by the business. This tend them to adopt green workplace behavior. These results also align with Srivastava and Madan (2023), which reveals that if the workplace climate is spiritual, all employees not

only work just to earn but they feel environmental responsibilities towards community. In this situation, green workplace behavior can be formed by the organization. The study results depicted that high performance work system is a significant mediator between green HRM practices and workplace spirituality. These results also align with Gomes, Coelho, and Ribeiro (2025), which implies that effective green HRM practices develops a high performance work system where with the motivated employees workplace spirituality can be developed. These results are supported by Li, Abdalla, Mohammad, Khassawneh, and Parveen (2023), which conveys that when green HRM perform effectively, employees are trained for better productivity leading to high performance work system. In such work system where employees are more able and committed, workplace spirituality can be developed.

The study results depicted that workplace spirituality is a significant mediator between high performance work system and green workplace behavior. These results also align with Chaudhary, Singh, and Srivastava (2024), which posits that workplace spirituality aroused by a high performance work system, promotes green workplace behavior. These results match with Nourafkan, Karatepe, and Rezapouraghdam (2024), according to which a high performance work system creates a sense of purpose, supportive culture, and accountability that are essential in workplace spirituality and it supports a green workplace behavior as well. The study results depicted that organizational commitment is a significant moderator between workplace spirituality and green workplace behavior. These results are supported by Utami, Sapta, Verawati, and Astakoni (2021), which implies that organizational commitment, motivates employees to perform as to develop workplace spirituality and thus, it boosts green workplace behavior. These results also align with Djaelani, Sanusi, and Triatmanto (2021), which states that in case, there is an organizational commitment, workplace spirituality is encouraged and green workplace behavior is introduced.

IMPLICATIONS

Present study has considerable significance to Pakistan and other economies where businesses are encountered with environmental challenges, damage nature, and cause issues to public. This study particularly addresses the ways to develop green workplace behavior fundamental to mitigate environmental business impacts. The study guides that HRM must integrate green consideration in its practices so that high performance work system can be achieved. The study implies that organizational management form policies specially to implement HWPS in order to encourage workplace spirituality. This article also suggests that organization administrators must pay attention to the workplace spirituality while performing managing practices so that they may boost green workplace behavior. There is also a suggestion that green HRM must be executed aiming at improving HPWS so that workplace spirituality may be improved. The study also has a suggestion that improvement must be brought in HPWS. It would improve workplace spirituality and assure green workplace behavior. The study also conveys that organizational commitment must be encouraged in employees. It would motivate them for bringing workplace spirituality and adopting green workplace behaviors.

CONCLUSION

The objective of the study was to examine the interrelationship of green HRM practices, HPWS, workplace spirituality, and green workplace behavior. It also analyzes the moderating role of organizational commitment between workplace spirituality and green workplace behavior. The study reveals that if green HRM practices like green recruitment, evaluation of green performance, green rewards & compensation, and green training etc. are executed effectively, employees get able to handle environmental issues, overcome problems, and draw better outcomes. Thus, HPWS where employees are assumed to be more competent can be developed. The study also depicted that the organizations which are attentive to establish a sound HPWS, retains active, talented, and committed workforce. The presence such labor workplace spirituality can be developed. The study results indicated that workplace spiritually

develops a stronger attachment of employees with work and the well-being of peers and others. Hence, they energetically participated in implementing green workplace behavior. The study found that if green HRM practices are enacted, HPWS run on sound basis and HPWS helps to create workplace spirituality. Likewise, the workplace spirituality improved by HPWS, encourages team work, morality, and employee engagement essential to green workplace behavior. Moreover, study concluded that when organizational commitment is development among employees, workplace spirituality can be enhanced and there is motivation for green workplace behavior.

LIMITATIONS

The present study also has some limitations. First, the scope of the study is limited. Here, only some HR and workplace factors like green HRM practices, HPWS, workplace spirituality, and organizational commitment are taken analyzing the green workplace behavior. In future, authors must think broad and add other factors like green finance, green innovation, and energy conservation etc. Moreover, this study is just based on data from Pakistan. Authors must show support their hypotheses with analyzed data from multiple countries.

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