Green High-Performance Work Systems and Green Service Innovation: Moderated Mediation Model of Decent Work and Climate Change Skepticism

Abstract

Purpose: Based on the ability-motivation-opportunity (AMO) framework, this paper develops and tests a moderated mediation model to investigate how and when green high-performance work systems (GHPWS) lead to green service innovation (GSI). For this purpose, the current study examines the mediating role of decent work (DW) and the moderating role of climate change skepticism (CSS) in the relationship between GHPWS and GSI.

Design/methodology/approach: Overall data collected from 262 Pakistan banking employees analyzed through the SPSS PROCESS macro supports this model.

Findings: Findings suggest that GHWPS increased GSI through DW. The positive effect of DW on GSI was particularly high for the employees with low CCS.

Originality/value: This study provides unique insights into the employees' doubts about anthropogenic climate change and the importance of organizations implementing GHPWS toward cultivating DW and GSI in the context of developing countries.

Implications: Theoretically, this study expands knowledge in sustainable business practices and human resource management. Practically, it offers organizations strategies to integrate sustainability into their operations. This study implies that human resource management must be realigned with the overall organizational sustainability strategy to adopt environmental innovations. Along with the commercial and economic outcomes, this research has implications for public policy by advocating for practices that support environmental sustainability and decent work. Societally, it promotes awareness of the importance of sustainability in business, which has a potential ripple effect on public attitudes and improves quality of life through environmental preservation.

Key words: Green high-performance work systems, decent work, climate change skepticism, green service innovation, sustainability

Introduction

Climate change is one of the immense challenges the modern world is facing. Rising temperatures, sea levels, and shifts in rainfall patterns can cause natural disasters such as storms, floods, and

droughts. The frequency and magnitude of these events call governments, communities, and organizations to make serious efforts for sustainable development (Khan *et al.*, 2020). In this regard, the United Nations Environment Protection (UNEP) in 1990 emphasized the constant use of a cohesive environmental strategy in the production of goods and services (Chandio *et al.*, 2021). Therefore, organizations and communities are pushed to follow the green innovation strategy so economic growth can be assured with environmental protection (Ibekilo *et al.*, 2023). Similarly, the role of human resource management (HRM) in achieving higher environmental performance has been recognized in the mid-nineties, but green human resource management (GHRM) is a recent venture for developing Asian economies such as Pakistan that have unique environmental challenges (Zaid *et al.*, 2018). Pakistan is one of the most vulnerable South Asian developing countries to climate change which frequently experiences natural disasters such as floods and droughts (Fahad and Wang, 2020). Pakistan has the least adaptive capacity to deal with climate change due to its high level of poverty and lack of resources (Hussain *et al.*, 2020).

In developing countries like Pakistan, one of the biggest challenges to dealing with climate change issues is the continued public disbelief regarding the trends, causes, and consequences of climate change (Akter et al., 2017). Although there is a growing body of evidence that human activity is one of the major causes of greenhouse emissions that lead to catastrophic climate change (Emmanuel et al., 2024; Mesagan et al., 2022; Rahman, 2020; Wassie, 2020). Still, there is a considerable proportion of the public that doubts climate change and the severity of environmental degradation (Chen, 2020). Another issue in the discourse surrounding sustainability and innovation within especially the service sectors, is the individual employee's overall experience of the workplace through the construct of decent work (DW) (Gibb and Ishaq, 2020). Currently, service sector is going through major technological innovations and rapidly moving towards automation. As a result, this sector is sometimes accused of focusing more on reducing costs and maximizing profits through increased worker and business productivity and having less concern about improving working conditions, fair and equitable remuneration, and work-life balance policies (Rydzik and Kissoon, 2022).

Based on the above discussion and drawing on the ability motivation opportunity (AMO) framework, this study investigates how and when the bundle of GHRM practices termed as green high-performance work systems (GHPWS) leads to GSI. Further, it investigates the mediating role of DW and the moderating role of climate change skepticism (CCS) in the direct and indirect relationship between GHPWS and green service innovation (GSI) in the Pakistani banking context. This study contributes to literature in several ways: Firstly, this study contributes to the literature on green service innovation in the services sector, according to Karimi Takalo et al., (2021) 81%

of the research articles on green innovation are related to the industrial sector, and more attention is needed in the service sector. Secondly, the literature on GHRM in the service sector is mainly dominated by research in the context of higher education (Anwar *et al.*, 2020), hotels (Lin and Chen, 2018; Nisar *et al.*, 2021; Úbeda-García *et al.*, 2022), manufacturing sector (Ansari et al., 2021; Yong et al., 2019; Zaid et al., 2018) and health care sector (Amrutha and Geetha, 2020) but is a largely overlooked phenomenon in the banking industry. There is hardly any evidence in the banking context that how can GHRM enhance the environmental performance of banks through GSI. Therefore, this study addresses the scarcity of literature in the service sector in the context of GHRM and green innovation and intends to provide an empirical contribution in the context of a developing country's banking industry. Lastly, this study draws on the AMO framework to study the impact of GHPWS on the GSI by investigating the mediating role of DW and the interactive effect of employee CCS in the direct and indirect relationship between GHPWS and GSI, which, to the best of my knowledge, have not been investigated in the previous studies.

Theory and Hypotheses

Green High-Performance Work System (GHPWS) and Green Service Innovation

GHRM refers to the systematic and planned alignment of organizational traditional HR practices with its ecological objectives (Jabbour and De Sousa Jabbour, 2016). GHRM practices include green hiring, green training and development, a system of green performance evaluation, and green rewarding and compensation (Amjad *et al.*, 2021). On the other hand, high performance work systems (HPWS) focus on the bundling or combining of various HR practices rather than implementing individual-focused practices. There is a synergy effect of HPWS because one practice reinforces and supports another, which consequently leads to increased organizational efficiency and effectiveness (Al-Ajlouni, 2021). Based on above, it can be argued that the bundling or cluster of green HR practices (green hiring, green training, green performance management, and green compensation), referred to as GHPWS, can be more effective in the dissemination of green ideologies and the adaptation of green management initiatives (Úbeda-García *et al.*, 2022; Zaid *et al.*, 2018). The current study defines GHPWS as the combination of three components supported by the AMO framework: (1) developing green abilities (A), which include recruitment, selection, training, and development; (2) motivating green employees (M), which includes performance management, appraisal policies, pay and reward system; and (3) providing green opportunities (O), it reflect the employee involvement and supportive climate/culture (Úbeda-García et al., 2022 p.34).

Green innovation or ecological innovation is the process that involves the development of new products and technologies that aim to minimize environmental risks like pollution and the negative effects of resource exploitation (Karimi Takalo *et al.*, 2021). den Hertog et al. (2010) introduced a six-dimensional model of service innovation. 1) The service concept: creating value for customers by introducing new ideas in collaboration with them. 2) New customer interaction: innovation in the interaction of the service provider with the customer. 3) a new value system: creating new service bundles through collaboration with new business partners that can be actors in the value chain or the broad value network. 4) The new revenue model: developing a new cost and revenue model where various actors are involved. 5) A new delivery system: a service innovation dimension related to personnel, organization, and culture. 6) A new service delivery system: dimension related to technology that involves new interfaces or innovative ways to deliver services. This model can be applied to GSI because GSI is about designing new strategies to serve environmental concerns (Lin and Chen, 2017). It involves services that are eco-friendly and lead to the reduction and prevention of pollution, waste recycling, and energy conservation (Luu, 2022). According to den Hertog et al. (2010)' service innovation model the new delivery system requires the alignment of management and organization; it is related to modifying or developing new organizational structures or HR capabilities to facilitate service workers to acquire new skills and perform new jobs to foster innovation.

If the organization decides to pursue complex green strategies, then HPWS and innovation strategies should be integrated (Antonioli *et al.*, 2013). The HPWS comprises of three loosely tied concepts: 1) organizational performance, which is the dependent variable; it can be financial or non-financial performance, which can be extended to social legitimacy or corporate social performance, 2) significance of systemic effects: the bundling of HRM practices is a critical aspect of HPWS; instead of individual HRM practices, it is the bundle of HRM practices that guides the interaction between employees and managers or among managers. 3) The third concept is work or employment practices. HR strategy must be integrated with the business unit or overall organizational goals. It brings changes in skill development strategies and employee compensation, coupled with flexibility in work designs (Boxall, 2012). According to the AMO framework, HPWS is a bundle of HR practices that are different but interrelated, and they can be grouped under the three aspects of ability, motivation, and opportunity (Anwar *et al.*, 2020). The logic of using AMO-enhancing bundles is that superior HR outcomes (positive employee attitude, behavior, and performance) will result when several practices target the said outcome in a non-conflicting way (Edgar *et al.*, 2019).

According to the AMO framework, the ability aspect is related to the activities that are related to the development of knowledge and skills required by the employee to perform a job, such as recruitment and selection and training and development (Anwar et al., 2020).Green hiring is not enough to build the employee's green abilities. Also, imparting environmental education and training is significant and constitutes the ability aspect of the AMO framework. Training and the organization's environmental innovation strategies should be integrated because organizational innovation is highly dependent on the skill set of its employees. Joint implementation of training and organizational innovation can help organizations build and accumulate skills and competencies in the form of human capital, which is necessary for environmental innovation adoption (Antonioli *et al.*, 2013). Therefore, it is important to provide training about environmental protection activities and develop green talent that can help organizations deal with environmental challenges (Amrutha and Geetha, 2020; Yong, Yusliza and Fawehinmi, 2020) through GSI.

Motivation of employees encompasses HR practices that are intended to increase employee morale to achieve job and organizational goals, such as performance management, employee appraisal, and reward system (Anwar *et al.*, 2020). Green performance management and appraisal policies improve green creativity and innovation. When top management appraises employee green competencies and activities, it increases employee satisfaction and engagement, which consequently leads to a high-performing green workforce (Amrutha and Geetha, 2020)**.** Lastly, the opportunity aspect of the AMO framework is a set of HR activities such as knowledge sharing, employee participation, and empowerment intended to enhance employee participation (Anwar *et al.*, 2020). Employee participation in the green initiatives of the organization constitutes the opportunity part of the AMO framework. Work flexibility, job autonomy, and open communication from top officials about sustainability initiatives increase employee participation in green behaviors (Amrutha and Geetha, 2020).

The link between GHPWS and GSI can be further explained using the complementarity approach, which explains that the levels to which different parts of strategy, structure, and processes are integrated with each other will lead to superior performance. The complementarities approach helps researchers investigate the relational aspect of the system and understand that the relationships between different parts of the system perform better than the individual parts of the system. The complementarities approach is used by the researchers to analyze innovation in organizations, which is a complex process and is the result of various factors that are interconnected through complementary relationships, which lead to a systemic effect, i.e., the whole is better than its parts (Macky and Boxall, 2007). Therefore, it can be argued that the effect of GHPWS on organizational outcomes such as green innovation should be greater than the

additive sum of each individual practice because the complementarities approach necessitates that the bundle of HR innovative and work design strategies will mutually reinforce each other, consequently leading to synergistic effects (Edgar *et al.*, 2019; Macky and Boxall, 2007). Hence, it is proposed:

H1: Green high-performance work system is positively related to green service innovation.

Decent work as a mediator in the relationship between Green High-Performance Work System and GSI

HRM policies, starting from job design to the number of working hours, have a significant impact on the social well-being and lives of its workforce. Organizations that are concerned about the social impact of their HR practices often consider these impacts as part of their sustainability agenda, salary, and financial stability (Yong, Yusliza, Ramayah, *et al.*, 2020). Organizations that are keen to improve environmental performance reinforce GHRM practices. Such organizations are naturally inclined to improve the health and well-being of their employees (Zaid *et al.*, 2018). Moreover, to meet the environmental protection agenda, organizations are increasingly interested in hiring individuals who have green values who can constitute a green-oriented workforce that is interested in environmental issues. However, it's not only the organizations that are hunting green talent; it's also the applicants who prefer to work for environmentally friendly organizations. They think that such organizations would provide job security, better career development opportunities, and long-term stability (Amrutha & Geetha, 2020).

To be innovative at work, employees need a range of resources. These resources are like the dimensions of decent work, such as being treated respectfully with dignity, trust, and support from coworkers, along with participation opportunities in decision-making. Skill enhancement and career development opportunities to promote meaningful compensation for citizenship and social protection. Similarly, fair working hours, work tasks, and occupational health and safety are necessary for employees to engage in innovation. It can be argued using AMO perspective that DW dimensions increase innovation by providing opportunities for professional development (Xu *et al.*, 2022). GHRM heavily relies on encouraging and empowering employees to engage in environmental activities. Therefore, employees are given opportunities to engage in environmental activities. Empowering employees is also significant because it makes decision-making simple, which increases employee understanding and participation in the implementation of organizational environmental strategy (Amrutha and Geetha, 2020; Mousa and Othman, 2020).

Additionally, DW is also related to job characteristics that are implicitly fulfilling and productive in the form of job autonomy, feedback, and skill variety, which increase employee motivation to innovate. Similarly, adequate working time and workload provide employees with enough time to learn new skills, leading to strengthening the ability aspect of the AMO framework. Working conditions characterized by timely feedback about performance, empowerment, and social support are related to the DW dimension of fundamental principles and values and a fair and equitable reward system for exercising citizenship. strengthen employee's self-efficacy and belief that they can innovate on the job (Xu *et al.*, 2022). Therefore, it can be argued that DW can have a positive impact on the employee's psychological, emotional, and cognitive states that will result in increased innovation at the workplace via increased engagement at work (Xu *et al.*, 2022) in the green organizations. Based on above, it is proposed:

H2: Decent work mediates the relationship between green high-performance work systems and green service innovation.

Climate change skepticism as a moderator in the relationship between decent work and green service innovation

The dimensions of DW indicate a perceived positive treatment received by the employee from the organization, and in return employees reciprocate the positive treatment through work engagement and innovative work behavior (Xu *et al.*, 2022). Therefore, it can be argued that organizations can reduce their carbon footprint and acquire ecological balance through the employee green behavior (Amrutha and Geetha, 2020). The intellectual capital embodied in employees is a fundamental resource that can help organizations meet international environmental regulations, meet customer expectations about climate change issues, and create value for the organization (Yusoff *et al.*, 2019). However, there is always a possibility that individuals doubt the existence of climate change, the fact that human activity is causing it, or the possible harm it may cause. In a more roundabout way, one may likewise legitimately doubt the existence of scientific agreement related to climate change. Even there is a possibility that people having a good understanding of scientific knowledge may find some other reason to reject the anthropogenic climate change (Kovaka, 2021).

There are three types of climate change skeptics: 1) trend skeptics: who reject the existence of global warming, 2) attribution skeptics: who think humans are not to blame for the global warming; and 3) impact skeptics: for whom global warming is harmless (Rahms Torf, 2004). Many justifications are offered by those who are doubtful of human-caused climate change to support their opinions. E.g., many claim that since they have not personally noticed a change in the weather, there is no evidence of climate change occurring. Some say that since temperature

fluctuates naturally, any change in the world's average temperature does not necessarily mean that the climate has changed significantly. Some think that news reports about climate change are fake, and some think that God is in control, and they shouldn't worry (Haltinner and Sarathchandra, 2021). In the context of developing countries like Pakistan, fatalism could be a major issue due to the low literacy rate and lack of awareness about environmental issues. Fatalism is a belief in God that everything is destined, and God knows the future. Such beliefs lead people to believe that events are caused by God's will. Therefore, fatalists may tend to view climate change as caused by superior power and humans can't do anything about it (Akter et al., 2017).

Concerns about environmental hazards affect individual's behavior, e.g., buying environmentally friendly products. Beliefs and actions of individuals about environmental issues are significant. E.g., people who believe in and understand the problem of global warming engage in counteractive actions to solve it. Employees and management must make a combined effort to achieve sustainability goals. The organization's green efforts are wasted if employees don't share its green values. Employees' green behaviors are based on their environmentally determined actions and interests that reduce or eliminate environmental hazards (Al-Swidi *et al.*, 2021). Service innovation is very much dependent on the manager's involvement, beliefs, and contribution. The significance of GSI for managers is vital for its introduction in the organization because it requires incremental changes (Luu, 2022). But if employees are skeptical about anthropogenic climate change, they will be less likely to engage in actions that lead to GSI because all efforts to deal with environmental hazards are dependent on the presupposition of people believing in climate change to be real. CCS is related to pro-environmental behaviors in such a way that those who are skeptical about anthropogenic climate change are less likely to engage in green initiatives (Chen, 2020). Hence, it is hypothesized:

H3: Climate change skepticism moderates the relationship between decent work and green service innovation, such that the positive relationship is stronger when employee's climate change skepticism is lower than when it is high.

H4. The indirect effect of green high performance work systems on green service innovation through decent work is moderated by climate change skepticism, such that there is a positive indirect effect among employees with lower levels of climate change skepticism.

Based on the above discussion, the proposed theoretical framework of the study is shown in figure 1.

Insert Figure 1 about here.

Methodology

Research Design and Sample

This research employed a cross-sectional quantitative survey design to examine how and when GHPWS leads to GSI. Data was collected from the employees of commercial banks located in the three cities (Islamabad, Rawalpindi, and Faisalabad) of Pakistan. Due to their busy schedules, bank employees in Pakistan are difficult to access. Therefore, the current study employed convenience sampling, and the participants were chosen based on their willingness to participate in the research. This sample suited well to the study objectives because COVID-19 has transformed and redefined the competitive advantage for the banks that was previously defined by the presence of physical branches. Now banks are expected to offer service innovation to meet customers' demands for flexibility, ease of banking, and diversity. In the era of digital transformation, the banking sector will continue to experience accelerated innovation. In this context, banks will only be able to sustain their competitive advantage through innovation, modernization, and customization of products and services by opting for new digital technologies (Ngo *et al.*, 2023). At the same time, banks are expected to become environmentally and socially responsible and play the role of catalysts to influence the social and environmental roles of other industries. But so far, financial institutions are considered to show the least concern for environmental issues (Gunawan *et al.*, 2022). Because the banking industry is generally considered eco-friendly, the direct impact of banking operations on the environment is minimal, but it's the customers activities that have an environmental impact (Suresh and Bhavna, 2015). The term green banking is gaining attention because it encourages banks to undertake social and environmental responsibility, especially when giving loans. Banks are expected to consider the environmental, social, and governance impacts of their borrowers (Gunawan et al., 2022). In the context of developing countries, the obstruction to green growth could be the slower rate of technological innovation, lack of financial innovative products, and environmental awareness among banks (Mir and Bhat, 2022). Therefore, through the introduction of GHPWS, banks can meet both challenges of sustainability and innovation through GSI.

Data Collection Method and Procedure

Data was collected through questionnaires administered to bank employees. There were two parts to the questionnaire. The first was about the demographic information, in which the respondents were asked about age, gender, and education. The second part consisted of the items for the study variables. The cover letter was attached to the questionnaire. In the cover letter, participants were explained the purpose of the study and were assured that their responses would be kept confidential

and anonymous throughout the study. Further, in the cover letter, it was highlighted that the data collected from participants will be saved on an encrypted drive to ensure safety. In the informed consent, participants were informed that they could withdraw from the study anytime during the survey or after fifteen days of participation. Once the participants gave consent to fill out the questionnaire, the online link was shared, or a hard copy was provided. A total of 350 questionnaires were circulated, out of which 273 were received back. After discarding 11 incomplete questionnaires, 262 final responses were utilized in the final data analysis.

Measures

Green High Performance Work Systems (GHPWS): GHPWS was measured using the research work of Úbeda-García et al. (2022). Respondents rated three components of GHPWS, namely green skills development, green motivation, and green involvement, on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). An example of an item is, “In our organization, there are a number of formal or informal communication channels to spread green culture in our company.” The GHPWS scale consisted of 10 items and demonstrated excellent reliability. Cronbach's alpha for this scale was 0.94.

Decent Work: DW Scale was adapted from the research work of Di Fabio and Kenny (2019). The DW scale had five dimensions: safe working conditions, access to healthcare, adequate compensation, free time and rest, and complementary values. A sample item includes “I feel emotionally safe interacting with people at work." In this study, the employee's perception of DW was assessed through 11 items on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Cronbach's alpha for a DWS showed good reliability with a value of 0.882.

Climate Change Skepticism: The 4-item scale developed by Chen (2020) was adopted to rate the employee’s climate change skepticism. A seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree) was used as a rating scale to assess employees’ climate change skepticism. “I am uncertain that climate change is really happening” is an example of an item. This scale has shown good reliability, with a Cronbach's alpha value of 0.795.

Green Service innovation: The measurement scale consisting of eight items was adapted from the research work of Lin and Chen (2017) to measure the banks GSI. Employees used a 7-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to rate the measurement items. A sample item from the 8-item questionnaire is, “In recent years, our bank has frequently extended products and services based on its concern for the environment.” Cronbach's alpha for this scale was 0.933, showing excellent reliability.

Data Analysis

In the current study, PROCESS Model 4 was used to analyze the mediation hypothesis, and PROCESS Model 14 was utilized to perform the moderated mediation analysis. The mathematical equations of both models are derived below (Hayes and Rockwood, 2020):

Regression equation of Model 4:

$$GSI = b_0 + b_1 GHPWS \quad (1)$$

$$DW = b_0 + b_1 GHPWS \quad (2)$$

$$GSI = b_0 + b_1 DW \quad (3)$$

$$GSI = b_0 + b_1 GHPWS + b_2 DW \quad (4)$$

Regression equations of Model 14:

$$GSI = b_0 + b_1 DW + b_2 CCS + b_3 DWCCS + c' GHPWS \quad (5)$$

$$DW = a_0 + a_1 GHPWS$$

Substituting in equation 5 for DW

$$GSI = b_0 + b_1 (a_0 + a_1 GHPWS) + b_2 CSS + b_3 (a_0 + a_1 GHPW) CCS + c' GHPWS \quad (6)$$

Multiplying brackets in equation 6

$$GSI = b_0 + b_1 a_0 + b_1 a_1 GHPWS + b_2 CSS + b_3 a_0 CSS + b_3 a_1 GHPWCCS + c' GHPWS \quad (7)$$

Grouping terms into form GSI = a + b GHPWS

$$GSI = (b_0 + b_1 a_0 + b_2 CSS + b_3 a_0 CSS) + (b_1 a_1 + b_3 a_1 + c') GHPWS \quad (8)$$

Hence

One indirect effect(s) of GHPWS on GSI, conditional on CSS:

$$a_1 b_1 + a_1 b_3 CSS = a_1 (b_1 + b_3 CSS) \quad (9)$$

Note: GHPWS = Green High Performance Work Systems, DW= Decent Work, CCS= Climate Change Skepticism, GSI= Green Service Innovation

Results

Demographics

Of the 262 participants, 187 were male (71.4%) and 75 were female (28.6%). Most participants were from the age group of 25-30 years old (30.2%), with experience of 1-4 years (53.1%). There were 113 participants holding a bachelor's degree (43.1%), 119 participants with master's degrees

(45.4%), 24 participants were holding MS degrees (9.2%), 4 participants had PhD degrees (.8%), and 4 participants were holding other degrees (1.5%).

Confirmatory Factor Analysis

To assess the construct validity of the current study variables confirmatory factor analysis (CFA) was conducted. The 4-model showed the best model fit (CMIN/DF = 1.89, CFI = 0.928, TLI = 0.920, SRMR = 0.052, RMSEA = 0.058). Moreover, table 1 shows that the baseline four-factor model was compared with a three-factor model, a two-factor model, and a one-factor model. All these alternate models showed worse model fit compared to the hypothesized four-factor model. Therefore, the discriminant validity of the hypothesized four-factor model was confirmed.

Insert table 1 about here.

Descriptives and Pearson Correlation

Descriptive statistics and Pearson correlation between the variables are presented in Table 2. The variables of the study are labeled from 1 to 8 in the columns in Table 2. Results show that the mean and standard deviation (SD) of the variables of study are GHPWS [Mean = 4.8318, SD = 1.2609], DW [Mean = 5.1315, SD = 1.0409], CCS [Mean = 4.6299, SD = 1.4389], and GSI [Mean = 4.9801, SD = 1.2191], respectively. GHPWS is found to be significantly associated with DW ($r = .541$, $p < 0.01$), CCS ($r = .365$, $p < 0.01$), and GSI ($r = .736$, $p < 0.01$). Similarly, DW was significantly correlated with GSI ($r = .605$, $p < 0.01$).

Insert table 2 about here.

Testing for Mediation

To access hypotheses 1 and 2, a simple mediation model was estimated using PROCESS model 4 (Hayes, 2017). Table 3 shows the results of mediation analysis. The total effect of GHPWS on GSI was significant ($\beta = .7112$, $t = 17.5098$, $p < .001$, CI [.6312,.7912]), as was the direct effect ($\beta = .5583$, $t = 12.3828$, $p < .001$, CI [.4695,.6470]). Therefore, hypothesis 1 was supported. GHPWS was positively related with DW ($\beta = .4466$, $t = 10.3702$, $p < .001$, CI [.3618,.5313]). Decent work, in turn, was also positively related with GSI ($\beta = .3425$, $t = 6.2721$, $p < .001$, CI [.2350,.4501]). The point estimate of the indirect effect of GHPWS on GSI via DW was ($\beta = .1530$, SE =.0401), with a 95% bootstrap confidence interval of between CI [.0776 and .2358]. The lower and upper limits didn't contain zero, thus providing evidence of a significant positive indirect effect ($p < .05$). This result confirmed support for hypothesis 2.

Insert table 3 about here.

Testing for moderated mediation

To access hypotheses 3 and 4, moderated mediation analysis was conducted using PROCESS Model 14 (Hayes, 2017). As shown in Table 4, a significant direct effect of GHPWS on GSI was observed (β =.5512, p <.001). The results also indicated that the effect of DW on GSI was also significant (β=.2975, p <.001), and this effect was moderated by CCS (β=-.0961, p <.01). Hence, hypothesis 3 is supported. To illustrate the pattern of this moderation effect, the relation between DW and GSI is plotted across different values of the moderator CCS in Fig. 2. A simple slope test revealed that under the condition of low climate change skepticism, the relation between DW and GSI was significant (βsimple=.4522, p <.001). This relation was much weaker, however, in the condition of high CCS (βsimple=.1658, p < 0.05). Conditional indirect effect analysis further revealed that the overall indirect effect was more noteworthy for employees who have low levels of CCS (β=.2019, SE=0.052, 95% CI= [.097,.3015]) than for those who have high levels of low CCS (β=−.074, SE=0.041, 95% CI= [−.0035,.1588]). The index of moderated mediation as a direct significance test was also significant (index = -.0429, SE =.0190, 95% CI [-.0796, -.0046]. Hence, hypothesis 4 is supported.

Insert table 4 about here.

Insert figure 2 about here.

Discussion

This study developed and empirically tested the moderated mediation model to examine the impact of GHPWS on the GSI. The findings of this study are consistent with the stream of research that advocates the need to integrate GHRM in the Pakistani business context (Farrukh *et al.*, 2022) and asserts that GHRM can have positive organizational outcomes ((Amjad *et al.*, 2021; Ansari *et al.*, 2021b; Saeed *et al.*, 2022).These findings suggest that HPWS is a specific bundling of HR practices, work structures, and processes that enhances an employee's knowledge, skills, commitment, and adaptability. HPWS is not about examining the impact of isolated HRM practices but is about bundling or systems of HRM practices (Kloutsiniotis and Mihail, 2020). There is a positive impact of internally designed HRM practices that aim to enhance ability, motivation, and opportunities on positive employee behaviors (Pham *et al.*, 2019). According to the AMO framework, when the organization develops employees' abilities, increases their motivation to do a job, and involves them in opportunities, it increases employees' engagement in positive behaviors

that, in turn, increases organizational performance (Anwar *et al.*, 2020) through GSI. In the services sector, innovation is elusive, attached, unrelated, fragile, and lacks standardization because customer involvement varies across services. Employee involvement that is related to the opportunity aspect of the AMO framework is extremely important. Organizations require knowledge and information for the development of green products and services, and for that, high-level involvement of employees from all hierarchy levels is needed in the company's strategic planning process. By doing so, organizations provide opportunity and recognition to the employees, which are critical factors for innovation (Chang, 2018). This can be equally applicable for the GSI.

Findings related to DW suggest that it is related to basic rights of employees, such as the liberty of association, the prohibition against unfair treatment at work due to any kind of discrimination, and the prevention of child and forced labor; and social discussion, wherein employees use the rights they have to voice their opinions, stand for what they believe is right, and have conversations with officials and organizations about issues pertaining to their jobs (Dharam Ghai, 2003). GHPWS can play a crucial role in this regard. When the sustainability agenda is incorporated in the HRM system of the organization it may lead to long-term and sustainable economic, social, and environmental wellbeing of its employees (Yong, Yusliza, Ramayah, *et al.*, 2020). thus, leading to DW. Findings of this study further highlight that the success of HPWS is largely dependent on the employee responses (Boxall, 2012). Uncertainty about the causes, gravity, and efficacy of efforts to reduce global warming are major factors contributing to the lack of sustainable behavior. This is consistent with the findings of previous studies that reported a positive relationship between an individual's propensity to act sustainably and their views of climate change being genuine. On the other hand, CCS was found to be associated with unfavorable assessments of climate change policies and sustainable technologies (de Graaf *et al.*, 2023).

Theoretical and Practical Implications

The current study extends the literature on sustainability by identifying that GHPWS is a critical factor that drives GSI through decent work. Research in the service sector on DW is scarce as it largely focuses on employee and employer relationships through various managerial approaches but misses the worker-centric approach (Rydzik and Kissoon, 2022). This study identifies DW as a significant concept in eco-innovation literature. This study also examined the role of employees' CCS. Which further offers a useful understanding of how employees doubt about anthropogenic climate change can affect their motivation to engage in green behaviors and can affect the organization's environmental strategy. This study also expands the literature on the AMO framework, which is largely employed in HRM studies to analyze HPWS and its impact only on

employee related outcomes. Little research has investigated the effect of HPWS through the AMO framework on organizational-level outcomes. This study examined the effect of GHPWS on DW (employee-level outcome) and GSI (organizational-level outcome) in a combined framework and provided empirical evidence from the service sector.

Findings of this study imply that in developing countries, for organizations to go green and adopt environmental innovations, a restructuring of organizational strategy is needed. HPWS is related to the set of organizational changes that drive the innovative and financial performance of the organization (Antonioli *et al.*, 2013). Therefore, organizations in developing countries should focus on integrating HRM and sustainability strategies. Findings related to CCS imply that organizations in developing countries should focus on green recruitment and selection (Anwar *et al.*, 2020). Organizations should emphasize green values in their advertisements to build green brands and give priority to job applicants who have green values (Amrutha and Geetha, 2020; Mousa and Othman, 2020). Green recruitment should keep green credentials under consideration or at least express concerns for environmental safety to attract highly talented individuals who are interested in working for the organization because of its track record of best environmental practices (Zaid *et al.*, 2018).

Green training and development are crucial GHRM activities that lead to effective environmental management. Organizations in developing countries need to enhance employee skills, knowledge, and abilities related to environmental management. This will increase employee engagement in green initiatives such as waste management, efficient resource utilization, and pollution minimization (Mousa and Othman, 2020). These trainings may include environmental awareness workshops and seminars about the organization's green initiatives (Amrutha and Geetha, 2020).

One of the underutilized strategic initiatives related to GHPWS in the context of developing country like Pakistan is the establishment of green teams. Green teams can build a conducive green culture and create opportunities for employee engagement. Green team could educate employees about green behaviors they can exhibit at the workplace and home. This can be done by organizing different green activities, such as celebrating Earth Day, providing training on how to properly separate daily use items for recycling, or seeking employee green volunteering.

Along with the commercial and economic outcomes, this research has implications for public policy by advocating for practices that support environmental sustainability and DW. Societally, it promotes awareness about the importance of sustainability in business, which has a potential ripple effect on public attitudes and leads to improved quality of life through environmental preservation. For example, green training increases employee awareness about environmental issues and builds

employees' green knowledge, skills, and abilities, which motivates them to engage in green behavior not only inside the organization but also outside in their homes (Pham et al., 2020).

Limitations and Future Research Directions

The findings of this study should be analyzed considering the following limitations: Firstly, the current study investigated the effect of GHPWS only within the organizational settings. It is recommended for future studies to examine the impact of GHPWS, such as how the ability aspect developed through green training can impact green behavior or activities of employees outside the organization. Further, future studies can employ experimental research designs, such as before and after green interventions, to investigate the impact of green training on employee behavior in and out of the workplace. Secondly, this study employed a cross-sectional survey design. However, common method bias was not an issue for this study. Future studies may employ a longitudinal design to obtain a more thorough comprehension of the phenomenon being studied. Moreover, this study analyzed the data only at one level; future studies can enrich our understanding of the outcomes of GHPWS by employing multilevel analysis.

Another limitation of the study was the relatively small sample collected from the banking industry of Pakistan, which is a developing country. Future studies can employ large samples from diverse industries. In this regard, cross-country comparisons with different economic contexts can offer valuable insights on the role of GHPWS in achieving a sustainability agenda. Fourthly, this study employs a quantitative approach, which has dominated most of the empirical research, but future studies can apply a triangulation approach for more conclusive investigation and in-depth analysis. Lastly, this study investigated the impact of employees' awareness about climate change on the organization's ability to fight climate change. Future studies can probe the relationship between the economic conditions of the country and public concern about climate change.

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Tables

Table 1: Confirmatory Factor Analysis

Model	χ^2	Df	CMIN/df	CFI	RMSEA	TLI	SRMR
4-Factor Model	902.264***	477	1.89	0.928	0.058	0.920	0.052
3-Factor Model [a]	1924.781***	492	3.91	0.756	0.105	0.739	0.078
2 Factor Model [b]	2167.183***	494	4.38	0.716	0.114	0.696	0.087
1-Factor Model [c]	2621.351***	495	5.29	0.639	0.128	0.614	0.097

a =Combining decent work and green service innovation
b= Combining decent work, climate change skepticism and green service innovation
c= Combining all items
***p <0.001
(Source: Authors own work)

Table 2: Descriptive Statistics and Pearson Correlations (N=262)

Variables	Mean	SD	1	2	3	4	5	6	7	8
1. Gender	1.2863	.4528	**1**							
2. Age	2.4809	1.2676	-.161**	1						
3. Education	1.7214	.7845	-.012	.178**	1					
4. Experience	1.8626	1.0775	-.186**	.694**	.136*	1				
5. GHPWS	4.8318	1.2609	-.029	-.056	-.001	-.109	1			
6. DW	5.1315	1.0409	-.071	.097	.009	-.017	.541**	1		
7. CCS	4.6299	1.4389	.052	-.058	-.197**	-.116	.365**	.317**	1	
8. GSI	4.9801	1.2191	-.104	.023	-.028	-.048	.736**	.605**	.353**	1

Note: GHPWS = Green High-Performance Work Systems, DW= Decent Work, CCS= Climate Change Skepticism, GSI= Green Service Innovation
Level of Significance: *p <0.05; **p <0.01
(Source: Authors own work)

Table 3: Mediation Analysis

	Coefficient	SE	Bootstrap 95% LLCI-ULCI
IV to the mediator (a path)			
GHPWS → DW	.4466***	.0431	[.3618, .5313]
Mediator to DV (b path)			
DW→GSI	.3425***	.0546	[.2350,.4501]
Total effect GHPWS →GSI (c path)	.7112***	.0406	[.6312,.7912]
Direct effect GHPWS→ GSI (ć path)	.5583***	.0451	[.4695,.6470]
Indirect effect			
GHPWS → DW → GSI	.1530	.0401	[.0776,.2358]

Note: GHPWS = Green High-Performance Work Systems, DW= Decent Work, GSI= Green Service Innovation, N = 262, PROCESS Model 4, Bootstrap sample size = 5,000, LL = lower limit, UL = upper limit, CI = confidence interval, Level of Significance: ***p <0.001 (two-tailed)
(Source: Authors own work)

Table 4: Moderated Mediation Analysis

Outcome	Predictor	R^2	F-Value	B	LLCI	ULCI	*t value*
GSI	GH	.6191	104.4245***	.5512	.4612	.6412	12.0617***
	DW			.2975	.1886	.4063	5.3807 ***
	CCS			.0702	-.0007	.1412	1.9486
	DW*CCS			-.0961	-.1566	-.0356	-3.1299 **
Conditional direct effect analysis at moderator values (CCS) = M ± SD				**B**	**Boot SE**	**BootLLCI**	**BootULCI**
M – 1 SD (-1.6099)				.4522***	.0667	.3209	.5835
M (.1201)				.2859***	.0561	.1754	.3964
M + 1 SD (1.3701)				.1658**	.0757	.0168	.3148
Conditional indirect effect analysis at moderator values (CSS) = M ±SD				**B**	**Boot SE**	**BootLLCI**	**BootULCI**
M – 1 SD (-1.6099)				.2019	.0520	.0970	.3015
M (.1201)				.1277	.0364	.0578	.2024
M + 1 SD (1.3701)				.0740	.0410	-.0035	.1588
Index of moderated mediation				**Index**	**Boot SE**	**BootLLCI**	**BootULCI**
				-.0429	.0190	-.0796	-.0046

Note: GHPWS = Green High-Performance Work Systems, DW= Decent Work, CCS= Climate Change Skepticism, GSI= Green Service Innovation, N = 262, PROCESS Model 14, Bootstrap sample size = 5,000, M= Mean, SD= Standard Deviation, LLCI = lower limit confidence interval, ULCI = upper limit confidence interval, Level of Significance: ***p <0.001, **p <0.01 (two-tailed)
(Source: Authors own work)

Figures

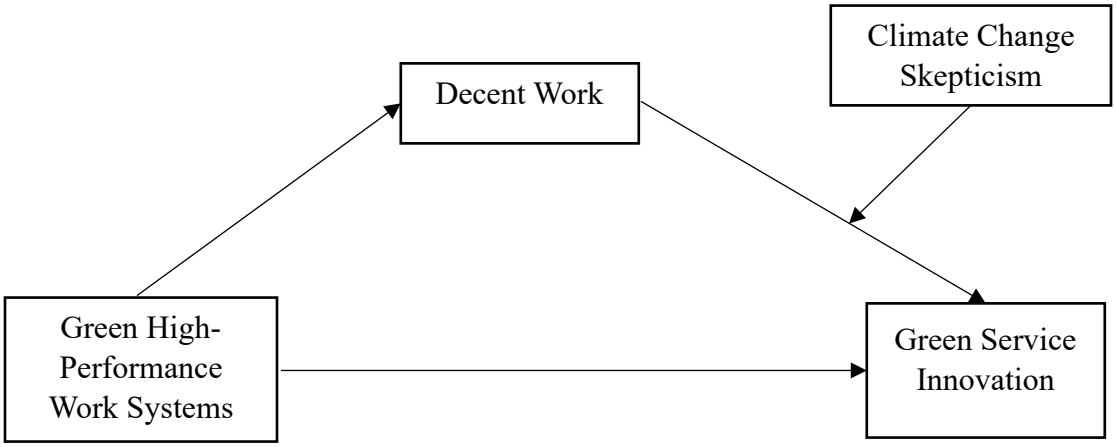

Figure 1: A moderated mediation model of Green High-Performance Work Systems, Decent Work, Climate Change Skepticism, and Green Service Innovation
(Source: Authors own work)

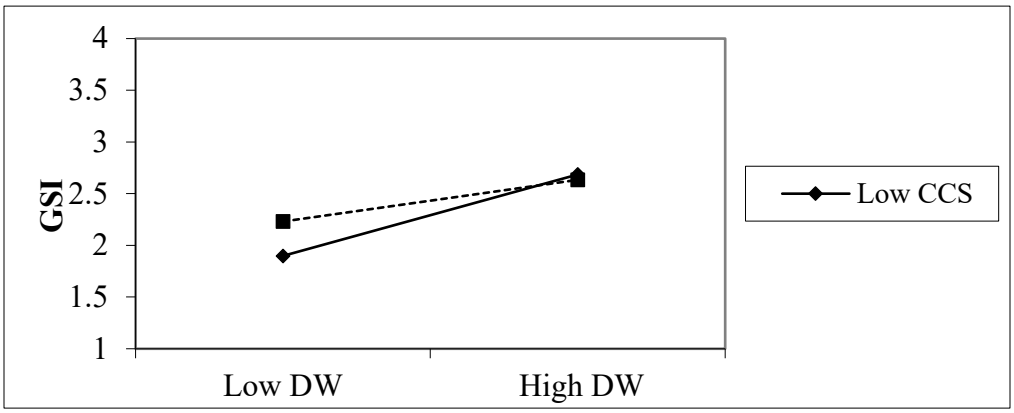

Figure 2: Impact of Decent Work (DW) on Green Service Innovation (GSI) under the influence of Climate Change Skeptcism (CCS)

(Source: Authors own work)