

## ACHIEVING SUSTAINABILITY GOALS: THE SYNERGY BETWEEN GREEN HRM AND EMPLOYEE WORK ENGAGEMENT

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### ABSTRACT

*With an emphasis on the mediating function of employee job engagement in the manufacturing sector, this study investigates the relationship between Green Human Resource Management (GHRM) practices and sustainable performance. The study examines how GHRM practices, including green hiring, training, and performance management, improve employee engagement by encouraging pro-environmental skills, motivation, and participation chances. It is based on the Ability-Motivation-Opportunity (AMO) framework. Structured surveys were used to gather data from manufacturing enterprises as part of a quantitative technique. SPSS was used for the analysis in order to test the proposed correlations. The results show that GHRM greatly improves employee work engagement, which functions as a mediator in the relationship between GHRM and long-term performance. This proves that, particularly in the resource-intensive manufacturing industry, motivated workers are crucial to converting green HR policies into better organizational and environmental results. The study highlights the need for HR practices that not only support sustainability but also improve employee engagement, and it applies the AMO framework to advance theoretical knowledge of the HRM-sustainability tie. In practice, factory managers can use the research's practical insights to create and execute GHRM procedures that support sustainability goals. These findings should be further refined by future research that examines sectoral differences and moderating factors including leadership styles and organizational culture.*

**Keywords:** Green Human Resource Management, Sustainable Performance, Employee Work Engagement.

### INTRODUCTION

In contemporary Pakistan, the prospect of deteriorating environmental issues grows more pressing. Since businesses have a significant role in environmental issues, they have been urged to accept responsibility and attain sustainable performance (Diaz-Carrion & L'opez-Fern'andez) Amrutha and Geetha (2020) assert that GHRM is a psychological element that influences how individuals view their surroundings. "Human resources and environmental management" may have inspired the idea of "green

HRM". Pakistan, the country with the fifth-largest population in the world, needs to develop sustainable and eco-friendly methods. A small number of studies have looked at how HRM systems assist businesses in becoming environmentally sustainable. Accordingly, green HRM, or the HRM characteristics of green management, is one of the most crucial tools for successfully implementing green innovation (Gim, Ooi, Teoh, Lim, & Yeap, 2022).

According to Renwick, Jabbour, Muller-Camen, Redman, and Wilkinson (2016), green human resource management (HRM) is the process of integrating an organization's environmental mission and objectives with human management procedures, such as recruiting, training, assessing, and rewarding staff, as well as human elements like teamwork, empowerment, and organizational culture. One of the five green HR strategies that help the business hire more sustainable employees is green recruitment (Zaid, Jaaron, & Bon, 2018). To investigate green human resource management (GHRM), researchers have focused on a variety of areas, such as information technology, healthcare, energy and utilities, hospitality and tourism, transportation, and logistics. According to Renwick, Redman, and Maguire (2013), "green HRM" is also known by a number of different names, depending on the specific topic of the research. Some synonyms or alternative names for green HRM include sustainable HRM, environmental HRM, eco-friendly HRM, and corporate environmental HRM.

In the context of GHRM, Jackson and Seo (2010) provide insight into a number of issues, such as leadership support, sustainability reporting, green training and development, environmental performance, and employee engagement. GHRM supports an organization's long-term sustainability goals and ensures environmental performance (Kim, Kim, Choi, & Phetvaroon, 2019; Renwick et al., 2016). HR has adopted green HR practices, with an emphasis on paperless solutions that reduce waste and carbon emissions, as a result of the quickening pace of scientific innovation and the growing consciousness of sustainability issues.

The term "Green HRM" refers to a range of popular strategies and practices designed to assist companies in achieving their environmental goals, fostering a sustainable culture, and integrating ecological consciousness into HR operations. GHRM approaches include both traditional HRM practices that align with environmental goals and strategic HRM components in firms (Gholami, Watson, Hasan, Molla, & Bjorn-Andersen, 2016). As for Yong, Yusliza, Ramayah, and Fawehinmi (2019), the fact that GHRM has emerged as a critical management approach that helps companies reduce their carbon footprints and improve their sustainability shows how important it is.

Additionally, prior research indicates that GC and employee behavior effectively develop and execute structural and cultural changes that will support sustainability inside companies (Jamal et al. 2021). Therefore, the purpose of this study is to ascertain whether green HRM improves sustainable performance as a mechanism of sustainability. The study also looks into the relationship between G\_HRM and SP and employee work engagement. In addition to filling the identified vacuum in the literature, the research would provide information for policy and practice, especially by investigating the unique mediator in the relationship between green HRM and sustainable performance (Shahzad, M. A., Jianguo, D., & Junaid, M, 2023). The conceptual framework is significant because it takes a comprehensive approach and addresses a number of novel connection that have only been partially explored or attempted in earlier research. Finally, while the paper emphasizes organizational mediators like GI and GC, it does not sufficiently address how these interact with individual-level factors such as EWE to influence SP. The integration of both organizational and individual mediators can provide a more nuanced understanding of green HRM's impact, fostering actionable insights for organizations aiming to achieve sustainability goals. Future research can bridge this gap by examining EWE's role as a mediator and its interaction with organizational variables, thereby expanding the theoretical framework and practical utility of green HRM practices.

A strong framework for comprehending how Green HRM practices affect Employee Work Engagement (EWE) and ultimately contribute to Sustainable Performance (SP) is provided by the Ability-Motivation-Opportunity (AMO) Theory. Green HRM techniques, such as green training and development, give staff members the abilities and information they need to adopt sustainable practices. Employees are more intrinsically and extrinsically motivated to adopt pro-environmental actions when practices like green rewards and recognition are implemented and aligned with the organization's sustainability values. Green HRM methods inspire dedication and motivation, which is reflected in work engagement.

Employee engagement (motivation) is increased by the improved skills and opportunities that Green

HRM practices offer. Sustainable Performance (SP) is directly impacted by the sustainable behaviors that are fostered by this involvement, including environmental stewardship and innovation. The ability, motivation, and opportunities of employees all contribute to organizational outcomes, according to AMO theory. By describing how Green HRM practices produce a workforce that is competent (ability), engaged (motivation), and empowered (opportunity) to contribute to sustainable corporate goals, AMO theory bolsters this paradigm. The theory's application is further strengthened by the inclusion of Employee Work Engagement (EWE) as a mediator, which draws attention to the psychological mechanisms that connect Sustainable Performance and Green HRM practices.

## Literature Review:

### Green HRM and Sustainable Performance:

The importance of GHRM in enhancing SP, promoting long-term growth, and putting green practices into action is becoming more widely acknowledged (Dragomir 2020). Research has looked at how and when GHRM affects SP, which could provide businesses with a competitive edge (Ali et al. 2019). For example, Guerci et al. (2016) observed that GHRM influences the relationship between stakeholder demands and SP. Research, examined how GHRM affected manufacturing industry perceptions of SP. By engaging in GER (GER) practice, employees can contribute to their company's green initiatives. Employees can voice their thoughts on urgent environmental issues and offer solutions in a good work environment that is fostered by this engagement (Liebowitz, 2010).

According to researchers like Boiral and Paille (2012), involving employees in the development and implementation of an environmental strategy is likely to increase their ability and knowledge to handle environmental concerns, which will ultimately help with product and process management and innovation. Interactions among employees also result in eco-intrapreneurs that encourage environmental innovation within the company (Sathasivam et al., 2021).

**H1: The green HRM has positive impact on sustainable performance**

### Green Hrm and Employee work Engagement

Although research on environmental management shows that GHRM techniques are in place, little is known about how they affect employee engagement at work (J. Econ. Finan. Manage. Stud, 2023). Particularly in the manufacturing sectors of underdeveloped nations. As a key symbol of the "Environmental management system" in manufacturing industries pakistan] notably emphasized the environmental training program talked about green managing techniques for human resources. These included employing individuals whose environmental beliefs and values matched those of the business, implementing incentive schemes that considered workers' environmental performance, and implementing environmental awareness-raising training initiatives, (J R. Cropanzano & M.S. Mitchell, 2005) When both parties follow trade norms and exchange regulations, employees and employers have a loyal and trustworthy connection. Staff members feel obliged to increase work engagement in return for the organization's investment in green HR practices. , (J. Manage. Psychol, 2006) The importance of GHRM stems from the fact that it is a critical component of an environment-oriented strategic plan to build, maintain, and strengthen sustainable development (Farooq et al., 2021). Businesses that actively practice GHRM can project a "green" image, which helps lessen the negative effects of unfavorable occurrences.

According to Benevene and Buonomo (2020), GHRM practices can actually be considered predictors of green environmental performance that affects a supply chain, including production, culture, tactics, and even employee behaviors. According to studies on the association between GHRM and work engagement (Aktar and Islam, 2019; Aboramadan, 2020; Darban et al., 2022), GHRM has a direct impact on work engagement. The relationship between GHRM and work engagement is worth looking at because, on the one hand, numerous other studies have shown that, as an organizational outcome, work engagement is made possible primarily through feelings of psychological ownership (Rapti et al., 2017; Su and Ng, 2019; Wang et al., 2019).

**H2: Green Hrm has a positive impact on Employee work Engagement**

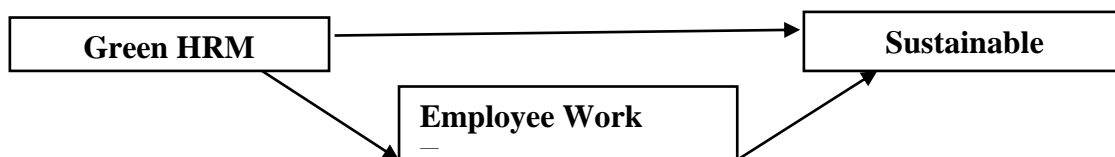
## Work Engagement and Sustainable Performance

Employee work engagement is defined as a "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" by Schaufeli et al. (2002). Absorption is the complete concentration and engrossment in work, vigor is the amount of energy that employee exhibits combined with mental resilience while working, and commitment is the enthusiastic involvement in work and a sense of significance, assert that proactive behaviors, creativity, and accountability—all of which are essential for accomplishing long-term objectives—are more likely to be displayed by engaged employees. Increased productivity and innovation from engaged workers improve economic performance. This is in line with sustainable performance goals, where innovation is essential to reaching long-term environmental and economic objectives (Zeng S, Zhao H 2021). Work engagement makes it possible to establish rules for a task-shared goal, be willing to put forth effort, and have productive attitudes like flexibility and task satisfaction, which raise a team's level of thought action and, as a result, result in high performance and the capacity to handle challenges at work s (Dubbelt, Rispens, & Demerouti, 2016).

The convergence of financial and environmental objectives in the execution of core business operations to increase returns is known as sustainable performance (Dey et al., 2022). One well-established factor contributing to favorable organizational results is work engagement. According to Bakker and Demerouti (2008), engaged workers typically demonstrate greater levels of job satisfaction, productivity, and organizational commitment, all of which have a substantial impact on overall performance.

**H3: Work engagement has positive impact on sustainable performance.**

## Research Model



## Methods And Procedure:

The research design used in this study is quantitative and employs a cross-sectional survey methodology.

## Mediating Role of Work Engagement between Green HRM and Sustainable Performance

Green HRM creates an atmosphere that encourages and supports workers in adopting sustainable practices. According to Renwick et al. (2013), workers exhibit better levels of work engagement when they receive green practice training, are empowered to carry out eco-friendly projects, and receive recognition for their efforts. Green HRM improves job engagement by bringing employees' values into line with the organization's sustainability goals. Engaged workers are more inclined to support the organization's sustainability objectives outside of their designated responsibilities. According to Bakker & Demerouti (2008), proactive behaviors are exhibited by engaged employees and are crucial for advancing sustainability programs. Increased organizational commitment, creative behavior, and involvement in CSR initiatives are all ways that work engagement affects sustainable performance and are important factors in long-term sustainability (Saks, 2006).

Green HRM practices have the potential to boost employee engagement by creating a work environment that prioritizes sustainability. By taking part in green activities, proposing eco-friendly technologies, and encouraging organizational commitment to environmental responsibility, engaged employees in turn help to achieve sustainable organizational outcomes. According to Palupiningtyas, D. (2024), employee engagement, can mediate the relationship between Green HRM and sustainable performance, can positively impacted by Green HRM strategies that encourage sustainability-oriented behaviors.

**H4: Employee work engagement mediates the relationship between green hrm and sustainable performance**

The relationship between Green HRM practices, employee work engagement, and sustainable performance in manufacturing businesses may be



explored with this. The target population includes employees from the manufacturing sector in Pakistan, focusing on organizations actively incorporating sustainable practices. To guarantee representation at all organizational levels (e.g., employees, managers, and supervisors), use a stratified convenient sampling technique. Incorporate manufacturing companies situated in important industrial centers such as Sialkot, Islamabad, Lahore, and Karachi. 250 was therefore chosen as the study's final sample size. 250 surveys were distributed at first, and 171 valid answers were returned, yielding an effective response rate of 68%. Regarding the data collection process, staff and mid-level managers were informed about the study's goals and nature and given confidentiality guarantees. The majority of the data was collected by self-administration. Better understanding of the manufacturing sector can be gained from the sincere feedback and noteworthy response from manufacturing professionals.

### Instrumentation

The measures used in this investigation were modified; the details of each scale are given below.

#### Green HRM

A 19-item scale created by Tang et al. (2018) was used to quantify GHRM. The several kinds of green HRM practices are measured as a single construct in this study using a uni-dimensional scale. Green hiring and selection, green training, green performance management, green compensation, and other practices are all evaluated by GHRM using an integrated approach. Attracting green job candidates who use green criteria to select organizations" is the sample item. The scale has five points, with 1

denoting "not at all agree" and 5 denoting "totally agree."

#### Employee Work Engagement:

Scheufeli et al. (2006) measure work engagement using a 9-item Engagement Scale. The five-point Likert scale used to collect responses ranged from (1 Strongly Disagree to Agree strongly (5)). A few examples of things that demonstrate vigor, dedication, and absorption are: I am excited about my work, I feel like I have the energy to do it, and I find it to be full of significance and purpose.

#### Sustainable Performance

Ji, T., de Jonge, J., Peeters, M. C., & Taris, T. W. (2021) developed a 10-item scale. was employed in order to measure sustainable performance. "I Will Be Able to continuously achieve the objectives of my job" sample of instrument. Five points make up the scale, where one represents "not at all agree" and five represents "totally agree."

### Results:

#### Descriptive and Demographic Statistics:

The demographics analysis showed that 30% of the study's participants were female and 70% were male. Overall, 60% of workers were between the ages of 20 and 30, 25% were between the ages of 31 and 40, and 15% were between the ages of 41 and 50. Thirty percent of employees had zero to one year of experience, fifty percent had two to five years, fifteen percent had five to ten years, and five percent had ten years or more. 30% of employees held a master's degree, 15% held an MS/MPHIL degree, 50% held a bachelor's degree, 2% held an intermediate level, and 3% held other degrees.

**Table 1: Mean, SD, Correlation and reliability analysis**

Variables	Mean	SD	1	2	3
GHRM	4.3	.62	(.93)		
SP	4.1	.67	.54**	(.96)	
EWE	3.6	.52	.36**	.45**	(.97)

All variables' means, standard deviations, and correlations are shown in Table 1. The GHRM has a mean of 4.3 and an SD of .62. The mean value of the sustainable performance is 4.1, with a standard deviation of .67. The mean and standard deviation of employee work engagement are .36 and .52,

respectively. The examination of correlation coefficients demonstrates a positive association between the variables; for instance, GHRM and GP have a relationship of 0.54 \*\*, p < 0.01, while EWE has a relationship of .36 \*\*, p < 0.01 correspondingly. The correlation between EWE and SP was 0.45 \*\*, p

< 0.01 respectively. These numbers show that the variables under study have a significant association with one another. Additionally, the variables' reliabilities are displayed in Table 1. The alpha value for the construct under consideration is fellow. GHRM.93, EWE.97, and SP.96. These numbers show that respondents understood the scales completely and that there was no room for doubt.

### Statistical Path Analysis

Table 2 displays the regression analysis's outcome. Model 4 was utilized to examine the results while

keeping in mind Preacher and Hayes (2013). The direct effect finding supported H1 by demonstrating that GHRM positively affects SP behavior (b=0.51, P<0.01). EWE is positively impacted by GHRM (b=0.69, P<0.01), supporting H2. Innovative SP is positively impacted by EWE (b=0.40, P<0.01), supporting H3. EWE mediates the link between GHRM and SP. The hypothesis is accepted when the  $\beta$  value is 0.22 and the p-value is 0.00. H4 was so approved.

**Table 2: Direct And Indirect Effect**

Direct Effect	B	S.E	P	LLCI	ULCI
GHRM → SP	0.51	0.09	0.00	0.34	0.72
GHRM → EWE	0.69	0.44	0.00	0.36	0.79
EWE → SP	0.40	0.06	0.00	0.28	0.52
<b>Indirect Effect</b>					
GHRM → EWE → SP	0.22	0.85		0.89	0.41

### Discussion

The results of this study offer important new information about how employee job engagement, sustainable performance, and green human resource management (GHRM) are related. Through employee participation, this study contributes to our understanding of how environmentally conscious HR policies can promote corporate sustainability outcomes. There is a positive association between GHRM and SP, according to Hypothesis 1. The results confirm the hypothesis that there is a correlation between GHRM and SP. More people are realizing how crucial GHRM is to improving SP, encouraging long-term growth, and implementing green practices (Dragomir 2020). Studies have examined the timing and impact of GHRM on SP, which may give companies a competitive advantage (Ali et al. 2019). The second hypothesis demonstrates that GHRM can improve EWE. The results show that EWE increases under GHRM, which supports the hypothesis. Studies on the relationship between GHRM and work engagement have shown that GHRM directly affects work engagement (Aktar and Islam, 2019; Aboramadan, 2020; Darban et al., 2022). There are several more research that have demonstrated the connection between GHRM and work engagement, which makes it worthwhile to examine. Studies on the

relationship between GHRM and employee engagement at work (Aktar and Islam, 2019; Aboramadan, 2020; Darban et al., 2022) indicate that Work engagement is directly impacted by GHRM. Examining the connection between GHRM and work engagement is worthwhile since, on the one hand, several earlier studies have demonstrated. According to the third hypothesis, SP has benefited from EWE. The theory was validated. Sustainable performance is the process of combining financial and environmental goals while carrying out essential business functions to boost profits (Dey et al., 2022). Work engagement is one known element that contributes to positive organizational outcomes. Bakker and Demerouti (2008) state that engaged employees frequently exhibit higher levels of organizational commitment, productivity, and job satisfaction, all of which have a significant effect on overall performance. Furthermore, H4 postulated that the link between GHRM and SP is mediated by the EWE. The hypothesis was validated by the results. Through the creation of a sustainable work environment, green HRM practices have the potential to increase employee engagement. Engaged employees contribute to sustainable organizational results by supporting eco-friendly initiatives, suggesting eco-friendly technologies, and fostering

organizational commitment to environmental responsibility.

Palupiningtyas, D. (2024) asserts that Green HRM techniques that promote sustainability-oriented behaviors have a favorable effect on employee engagement, which can mediate the relationship between Green HRM and sustainable performance.

### **Theoretical Implications**

The present study broadens the scope of the AMO paradigm by illustrating how Green Human Resource Management (GHRM) practices improve employee capability, motivation, and opportunity, ultimately leading to sustainable performance. The study emphasizes the mediating function of employee job engagement, demonstrating that GHRM practices promote greater employee commitment and involvement in addition to better organizational and environmental results. The theoretical underpinnings for integrating sustainability into HRM strategies as a key factor in organizational success are strengthened by this research's association between GHRM and sustainable performance.

### **Practical Implications**

Employers can match employee behaviors with sustainability goals by implementing GHRM practices like green training, performance reviews, and hiring. This can enhance overall sustainable performance and help companies cultivate an eco-friendly culture. A sense of purpose should be established by GHRM in order to improve employee engagement. Commitment to organizational goals, particularly sustainability-related ones, is higher among engaged personnel. Employees can effectively contribute to the organization's sustainability goals if their green skills are developed through specialized training and sustainable practices. Sustainability measures ought to be incorporated by organizations into their systems of performance reviews and incentives.

Acknowledging and praising staff members for their sustainability efforts can encourage further involvement and promote long-term success. Companies that incorporate GHRM practices into their main goals can gain a competitive advantage by enhancing economic, social, and environmental performance aspects, all of which are

fuelled by an engaged and driven workforce. These doable actions can help managers and human resources specialists build a long-lasting, motivated, and productive company.

### **Limitations and future directions**

The study may adopt a cross-sectional design, which could limit the capacity to prove a causal relationship between GHRM, employee work engagement, and long-term performance. The future requires longitudinal research to investigate causal linkages over time. The study focuses on employee work engagement as the mediator, possibly ignoring other elements like leadership, business culture, or employee pleasure. Additional moderators or mediators that might affect the connection between GHRM and sustainable performance could be investigated in future studies.

The study might primarily concentrate on organizational results, ignoring effects at the individual level like job satisfaction or personal well-being. Examine how the use of digital tools and technology (such as AI-powered GHRM systems) can improve the results and execution of green HRM practices. Examine the ways that different industries with varying environmental impacts—such as manufacturing vs service sectors—have varied relationships with GHRM, work engagement, and sustainable performance. Expand studies to assess wider sustainability effects, like employee well-being and community involvement. Examine how different leadership philosophies—in particular, green transformational leadership—affect how well GHRM programs promote sustainability and engagement.

### **Conclusion**

- The present study investigated the relationship between sustainable performance and Green Human Resource Management (GHRM) practices in Pakistan's manufacturing sector, using employee work engagement as a mediating element. By improving employee engagement, GHRM can promote organizational sustainability, according to the findings. The findings show that GHRM practices—such as green hiring, training, performance management, and incentives—have a direct and beneficial effect on long-term performance. By putting

these ideas into practice, organizations can improve social, economic, and environmental outcomes and meet global sustainability goals. Additionally, GHRM and sustainable performance were found to be mediated by employee work engagement. Employees that are encouraged by their company's green initiatives are more active, committed, and innovative during work hours. This enhances their involvement in sustainability initiatives and highlights the significance of work engagement as an organizational strategy. Conclusively, GHRM fosters sustainable performance and develops a workforce that is more in line with the sustainability goals of the firm. In a corporate environment that is becoming more and more focused on sustainability, manufacturing companies in Pakistan must embrace and prioritize green HRM practices in order to gain a sustained competitive edge. In order to effectively promote sustainable growth, the report emphasizes how important it is for legislators and business executives to fund sustainable HR procedures and employee engagement tactics. Future studies could examine sectoral comparisons and longitudinal effects to increase our knowledge of GHRM's contribution to sustainability.

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