Vol. 8, Issue: 2024

Article ISSN: 2312-2668

International Journal of Information Sciences Management (IJIMS)

The Impact of Green HRM Practices on Environmental Performance by Examining Mediating Effect of Green Engagement and Green Behavior in Pakistan's Education Sector

Muhammad Adeel
[1]Muhammad Asif Munir, PhD
Asia Najmee
Khalida Naseem, PhD

[1] Corresponding author

Vol. 8, Issue: 2024

The Impact of Green HRM Practices on Environmental Performance by Examining Mediating Effect of Green Engagement and Green Behavior in Pakistan's Education Sector

Muhammad Adeel
adeel.muhammad5150@gmail.com
School of Business and Management Sciences, Minhaj University, Lahore, Pakistan.
Muhammad Asif Munir, PhD
masifmunir@gmail.com
Punjab Higher Education Commission, Lahore, Pakistan
Asia Najmee
asianajmee321@gmail.com
School of Business and Management Sciences, Minhaj University, Lahore, Pakistan.
Khalida Naseem, PhD
khalidanaseem.sbm@mul.edu.pk
School of Business and Management Sciences, Minhaj University, Lahore, Pakistan.

Abstract
The goal of the study was to determine how higher education institutions (HEIs') environmental performance affected by their use of green human resources management (GHRM). Additionally, this study concentrated on the moderating function of green creativity as well as the mediating impact of green engagement and green behavior. Convenience sampling was used to gather information from 208 higher, middle-level, and lower-level management staff members working in higher education institutes'. PLS-SEM, partially least- square modeling of structural equations, was used for evaluating the data. The study sheds light on how green human resource management approaches affected environmental performance by taking into account psychological and behavioral factors. The research results further clarify how green creativity influences the bond between green engagement and green behavior of employee. The results show that management of green human resource practices are one of the key components of higher education institutes' enhanced performance of employee about environment.

Received:
October 31, 2024
Review Process:
November 5, 2024
Accepted:
December 10, 2024
Available Online:
December 23, 2024

Keywords: *Green Human Resources Management (GHRM); Employee green behaviors (EGB); Environmental Performance (EP); Green Engagement (GE).*

Introduction

The green firms associated with environmental concerns and the development of a new strategy for organizations are the most discussed topics nowadays (Masri & Jaaron, 2017; Pham, Tučková, & Jabbour, 2019). Green HRM, additionally referred to as Environmental HRM, is seen as a crucial tool for the successful implementation of business sustainable growth strategies (D. W. Renwick, Redman, & Maguire, 2013).

Higher-education institutions have begun working to build green initiatives thathave concerns about improving environmental performance (D. W. Renwick, Redman, & Maguire, 2013). Several research studies highlighted the current situation of higher education institutes' sustainability efforts in the country (Demon, 2020). Educational institutions are comparatively lower in releasing pollution than corporate organizations because they promote a green culture through education & research and further teach the students about building, enhancing, and promoting

environmental behaviors (Rayner & Morgan, 2018). Higher education institutes promote environmental behaviors i.e. helpful to implement green activities (Bohra et al., 2023).

The staff of HEIs are not aware of the sustainable development process and its execution and tried to add sustainability values to the syllabus and research programs (Mahdy, Alqahtani, & Binzafrah, 2023). Moreover, it is necessary to incorporate sustainable development (SD) concepts in the procedures and strategies of HEIs and engage all the staff from lower management to top management in understanding and implementing these strategies. It is practically impossible to implement in the initial stage but implementing the multiplier effect may be beneficial for the implementation of a green environmental process it can motivate the staff by sharing their knowledge and experiences. This impact can also be produced by educating one person, who will then educate another person depending on what they learned (Lozano, 2006).

The present study's contributions consist of the following:

To our knowledge, no research has examined the relationships thus taken into consideration

Investigating the role of the underappreciated education sector on environmental performance

Examining how staff members at HEIs might act more sustainably to improve their institutions' environmental performance

Investigating the mediating effects of HEI staff members' commitment to and behaviors in a green environment on the adoption of Green HRM practices to enhance a university's environmental performance;

Providing data from Pakistan that supports the ability motivation opportunity theory (AMO) framework and theoretical model used in this study.

Researchers studied ability motivation opportunity theory and Green HRM practices in a variety of industries, including textile, hospitality, industries that are ISO14001 certified, hospitals, and higher educational institutes (Ali, Nisar, Abidin, Qammar, & Abbass, 2022; Pham, Tučková, & Jabbour, 2019). For instance, the study examined the results of environmental education, employee ecological behavior, and handling of human resources in public universities (Pham, Tučková, & Jabbour, 2019). Evaluated the connections between training, habits, performance, and involvement ingreen issues in the hospitality sector. A researcher studies how well sustainable environments perform. Social responsibility and green HRM in the textile sector (Spooner, Chima, Salemi, & Zoorob, 2017). Green supply chain management within an organization, environmental cooperation with clients and suppliers, and GHRM in the automotive industry (Huang et al., 2020). An investigation was conducted into the relationships between green transformational management, green innovation, as well as environmental sustainability in the manufacturing industry, which consists of small and medium-sized businesses (Singh et al., 2020). The Ability Motivation Opportunity Theory (AMO) is the most comprehensive theory when it comes to Green HRM engagement in environmental performance, but only a small number of studies have employed the entire AMO structure in models. The connection between GHRM and EP through green engagement, green behavior, and green creativity is ignored (Harvey, Williams, & Probert, 2013; S. Ren,Tang, & E Jackson, 2018; Saeed et al., 2019). Studying the impact of those linkages is necessary. As a result of this study, Green human resources management may get long-term advantages.

Literature Review:

Ability Motivational Opportunity (AMO) Theory:

Ability motivational opportunity theory is used to comprehend management of green human resources and performance of employee about environment. Based on previous research, it is the best hypothesis to understand how management of green human resources practices affect an organization's performance (Appelbaum, Bailey, Berg, & Kalleberg, 2000). According to (AMO), the three criteria of aptitude, opportunity, and incentives are used to group human resource management practices, and these practices are associated with high-performance practices

(Appelbaum, 2000). While hiring, training, and participation create the resources with the knowledge and skills required to complete specific tasks, opportunities contain sharing information, which encourages workers to take part in other activities. According to Marin-Garcia & Tomas, (2016),motivation additionally involves managing performance and remuneration that improve resource performance to meet performance-related goals.

According to the theory of ability motivation opportunity (AMO), Human resource practices improve employees' skills, influence their behavior at work, and boost productivity and these elements affect the general well-being of a business (Marin-Garcia & Tomas, 2016; Appelbaum, 2000).

Green Hiring & Environmental Performance:

Presently, numerous organizations' objective is to produce job descriptions (JDs) that can explain environmental problems related to job assignments being published (D. Renwick, Redman, & Maguire,2008). Organizations can use advertising to boost their impact on the environmental performance and green image. Encourage the applicant to submit applications for opportunities that fit their qualifications. As a result, the job's responsibilities must show environment-related tasks and require applicants to have the abilities needed to complete ecological endeavors (Chaudhary, Gustafson, & Mathys, 2018). Green hiring is viewed as the basic measurement in Green management human resource practices. Additionally, it strives to develop employees who are concerned about issues relating to the environment, which might enhance environmental performance (Zibarras & Coan, 2015).

Green Involvement, Training and Environmental Performance:

In modern era every business has thought to long term success which gain with the help of green innovation and training of employees (Pinzone, Guerci, Lettieri, & Huisingh, 2019). A worker needs education about the environment to improve their aptitude and competencies in Environmental management-related fields (Lopes de, Sousa Jabbour, 2021). It helps to increasethe value of ecological preservation in resource selection, enhance workforce flexibility, and decrease waste at the business (Chiappetta Jabbour et al., 2019). GT gives individuals the environmental knowledge and abilities they need to deal with environmental issues. GI in worker activities also provides a chance to advance the use of resources in Environmental management and provide a remedy for environmental issues in commercial settings (DuBois & Dubois, 2012).

Hypothesis Development:

Green Empowerment, Participation and Environmental Performance:

Boosting ecological sustainability needs businesses to adopt a green standard (Tang, Chen, Jiang, Paillé, & Jia, 2018). Businesses employ tactics like a green incentive program for employees to get theminvolved in environmental initiatives and help them reach environmental objectives (Merriman & Sen, 2012). The terms "green performance management and compensation" apply to the firm's employee incentives and rewards. The primary goal of a green employee performance reward and incentive is to encourage employees to contribute to the company's environmental objectives (Martinko, Harvey, Brees & Mackey, 2013).

H1: Green Human Resource Management and environmental performance are positively correlated.

Green Management of Human Resource Effect on Employee Green Engagement:

Regular employee participation in environmentally friendly projects increases their worries about the company's environmental goals while increasing employee commitment, which is helpful in managing environmental problems faced by firms. By implementing management of green resources techniques including green hiring, green involvement in training and development, ecological performance management, and eco compensation, employees may become more committed to the environment while also sharing knowledge more effectively (M. Ren, Zeng, Yang, & Urtasun, 2018).

Additionally,employees are more likely to recycle, save energy, and reduce trash when they exhibit a high level of devotion to the company (Lee, De Young, & Marans, 1995). Management of green resource has an important effect on organizational dedication, and environmental performance, among other variables (Kim et al., 2019). Previous studies show that employers don't regularly evaluate employees' commitment to the environment in relation to green management of green human resource practices. Due to that, earlier research has never assessed the importance of management of green human resources (direct and indirect impacts on the environmental performance through ecological dedication). Furthermore, research on environmental commitment has not been thoroughly examined inthe educational sector.

H2: Green Employee Engagement is closely related to green management of human resources.

Green Human Resource Management Impact on Employee Green Engagement:

Previous studies identified two categories of green behavior: one is known as extra-role behavior and the second is in-role behavior (Ramus & Killmer, 2007). Organizational outcomes are impacted by bothbehavior types. In what manner behavior is categorized, like whether these behaviors are in or extra role,depending on the firms (Paillé, Chen, Boiral, & Jin, 2014). Many organizations are required to behave green from their workers, like it is required from workers to ensure that harmful waste is properly disposed of as per the policies of an organization and it is considered to be a part of job responsibilities. Whereas, the literature on extra-role green behaviors proposed that it is considered to be helpful to enhance environmental performance while shutting down the systems after work and switching off lights at the time of leaving offices (Paillé & Boiral, 2013), this type of green behavior is considered helpful for attaining the organization's green objectives (Norton, Zacher, & Ashkanasy, 2014). Previous studieshave shown that, through affecting the psychological atmosphere of the nourishment industry, GHRM has an indirect and direct impact on the environmental behaviour of extra-role personnel (Dumont, Shen, & Deng, 2017). Employee engagement, performance management, and competency development are GHRM procedures that have a positive impact on behavior in the medical field (Pinzone, Guerci, Lettieri, & Redman, 2016). Additionally, it demonstrates how environmental training and organizational culture have a direct impact on environmental volunteer behavior (Pham, Tučková, & Viet, 2019).

H3: Green management of human resource and Employee green behavior have a positive correlation.

Impact of Green Creativity as a Moderator:

According to the definition of Amabile, (2019), Green creativity involves the creation of environmentally friendly products, services, and practices, along with processes that are additional beneficial, innovative, distinctive, effective, and efficient. Researchers from several fields have emphasized the significance ofgreen creativity for an organization's sustainable growth and boosting competitive advantages (Provasnek, Sentic, & Schmid, 2017; Saeed, 2019). So, considering the context of Pakistan's higher education institutes', this study examined employee green creativity that was influenced by both personal and organizational aspects. Green Management of human resources' include things like screening candidates before hiring, encouraging green work habits, and educating employees (Al-Ghazali & Afsar, 2022).Green creativity about environmental concernshelp in modeling employees' behaviors and attitudes towards green practices, and these also make a positive appearance in an organization. Same as system integration test indicates that employees increase their self-worth and self-image in such organizations and their ownership is enhanced as a result, they originate environment-friendly, unique, best solutions to problems faced by organizations, and that's why green creativity is enhanced. Therefore, it is suggested that GHRMP will increase the green creativity of employees.

H4: The association between green engagement and green behavior is moderated by green creativity.

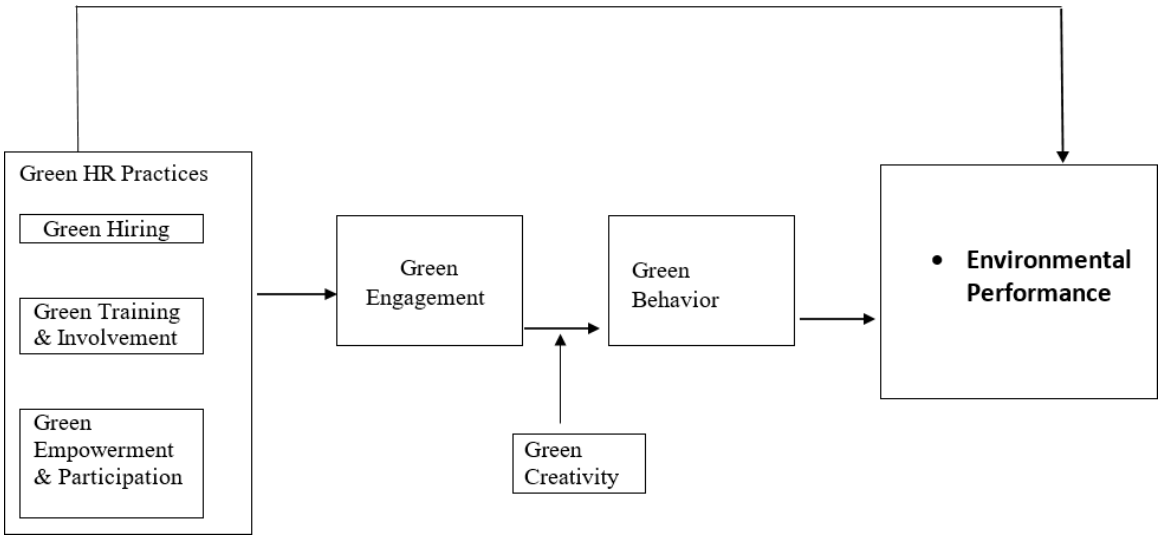

Figure 1: Framework

Methodology

The measurement tools for each variable adapted from previously published pieces of literature. It has beendone by using the Likert scale, which has a range of 1 to 5 for each statement. The objective of the current study is to assess the correlation between environmental friendly human resources management procedures, green commitment, green habits, and performance on the environment by considering the perspectives of academic and non-academic workers. Teachers and HR staff members who work with Pakistani HEIs were contacted to assess the questionnaire's content validity, and the questionnaire's final form was developed with their input. The data was gathered from the personnel of public sector higher educational institutions (HEIs) in Punjab, Pakistan, using a quantitative survey method. A convenience sampling technique utilized the public sector HEI is the center of an investigation to thisstudy, and the respondents were academic staff (heads and deans of departments) and management staff (top and middle management). Because management is involved in creating green strategies and policies, and academic staff is in charge of putting those plans into practice to improve environmental performance, we chose replies from both of these categories. 320 surveys were distributed to various staff working in Punjab's HEIs but got 208 responses from employees.

Results:

Convergent Validity:

When research questions are to be explored for the persistence of applying structural modelingis explanatory and the estimation of variables, the partially least squares-structural equations model (PLS- SEM) technique is developed as a profitable and efficient strategy (Ali et al., 2022). The method canalso be used to methodically evaluate relationships that are multifaceted and complex (Al-Ghazali & Afsar, 2021) another rationale for employing this method is that it has less stringent requirements than the Statistical Package for the Social Science (SPSS) for sample size, data normality, and analysis of moment structures (AMOS) (Naz, Jamshed, Nisar, & Nasir, 2023).

Table 1
Validity of convergent

First Order Construct	Second-order construct	Items	Loadings	Alpha	CR	AVE
Green hiring		GH1	0.767	0.784	0.846	0.652
		GH2	0.844			
		GH3	0.833			
Green Training & Involvement		GTD4	0.754	0.896	0.912	0.566
		GTD5	0.814			
		GTD6	0.782			
		GTD7	0.84			
		GTD8	0.693			
		GTD9	0.675			
		GTD10	0.667			
		GTD11	0.72			
Green Empowermentand Participation		GEP12	0.806	0.894	0.835	0.522
		GEP13	0.437			
		GEP14	0.805			
		GEP15	0.516			
		GEP16	0.922			
Green Human Resource Management		GH	0.572	0.913	0.792	0.547
		GTD	0.885			
		GEP	0.009			
		GPMA	0.727			
Green Engagement		GE3	0.728	0.772	0.836	0.523
		GE4	0.732			
		GE5	0.798			
		GE6	0.743			
First Order Construct	Second-order construct	Items	Loadings	Alpha	CR	AVE

	GE7	0.68			
	GB2	0.61	0.875	0.892	0.513
	GB3	0.8			
Green Behavior	GB4	0.803			
	GB5	0.767			
	GB6	0.73			
	GB7	0.793			
	GB8	0.636			
	GB9	0.667			
	GCR1	0.874	0.891	0.874	0.537
	GCR2	0.793			
Green Creativity	GCR3	0.726			
	GCR4	0.698			
	GCR5	0.621			
	GCR6	0.661			
	EP1	0.797	0.878	0.896	0.522
	EP2	0.702			
Environmental Performance	EP5	0.809			
	EP6	0.727			
	EP7	0.685			
	EP8	0.709			
	EP9	0.738			
	EP10	0.588			

The table summarizes the psychometric properties of constructs related to green HRM and environmental performance. Green Hiring: According to results show high reliability. Green Training & Involvement: According to table values show robust reliability, Green Empowerment & Participation: Findings show good reliability. Green Human Resource Management: Result shows strong reliability. Green Engagement: Findings shows good reliability. Green Behavior: Results shows high reliability. Green Creativity: Findings shows robust reliability. Environmental Performance: Results shows good reliability. Overall, these constructs exhibit satisfactory reliability and validity, confirming that the measures are consistent and accurately capture the intended concepts.

Discriminant Validity:

Variance-based structural equations modeling (SEM), which evaluates discriminant validity, uses the Heterotrait Monotrait (HTMT) ratio. It was discovered by researchers in earlier studies that it can be tough to validate the discriminant validity utilizing cross-loadings and the Fornell-Larcker criterion. As a result, (Henseler, Ringle, & Sarstedt, 2015) revealed HTMT ratios. When the HTMT ratios are more than 0.90, a discriminant validity problem arises. The value must therefore be smaller than 0.90. As presented in Table no 2, the values of the HTMT ratio of first-order are within the limit of the above-said threshold value. Nevertheless, Table 3 shows the discriminant validity that occurs in the second-order construct as it indicatesthat all the values are within the limit of 0.90.

Table 2
Ratio of HTMT (First order)

First Order Construct	EP	GB	GCR	GE	GEP	GPMA	GRS	GTD
EP	0.723							
GB	0.342	0.715						
GC	0.095	0.077	0.733					
GE	0.336	0.659	0.164	0.74				
GPMA	0.692	0.355	0.107	0.312	0.012	0.793		
GH	0.494	0.177	0.058	0.247	0.111	0.599	0.809	
GTD	0.665	0.375	0.093	0.318	0.075	0.683	0.6	0.753

Table 3
Ratio of HTMT (Second order)

	EP	GB	GCR	GE	GHRM
EP	0.723				
GB	0.342	0.715			
GCR	0.095	0.077	0.733		
GE	0.336	0.659	0.164	0.74	
GHRM	0.734	0.385	0.112	0.358	0.576

Note: GHRM stands for "Green Human Resource Management," EP for "EnvironmentalPerformance," GC for "Green Engagement," and GB for "Green Behavior."

Interpretation:

The table show the intercorrelations and loadings among various first-order constructs related to green practices. Each construct, such as Environmental Performance (EP), Green Behavior (GB), Green Creativity (GCR), Green Engagement (GE), Green Empowerment & Participation (GEP), Green Performance Management (GPMA), and Green Training & Development (GTD), shows a strong loading on its respective construct (e.g., EP = 0.723, GB = 0.715, etc.), indicating good internal consistency.

The correlations between constructs highlight how these elements are related to each other within the context of green HRM and sustainability practices. For example, EP has a notable correlation with GPMA (0.692) and GTD (0.665), suggesting a significant relationship between environmental performance and these green practices. Similarly, GHRM, as a higher-order construct, shows a strong correlation with EP (0.734), indicating its central role in influencing environmental outcomes.

Overall, the table demonstrates that these constructs are interrelated, with certain green practices (like GPMA and GTD) having stronger associations with environmental performance and broader green HRM practices.

Measurement Model:

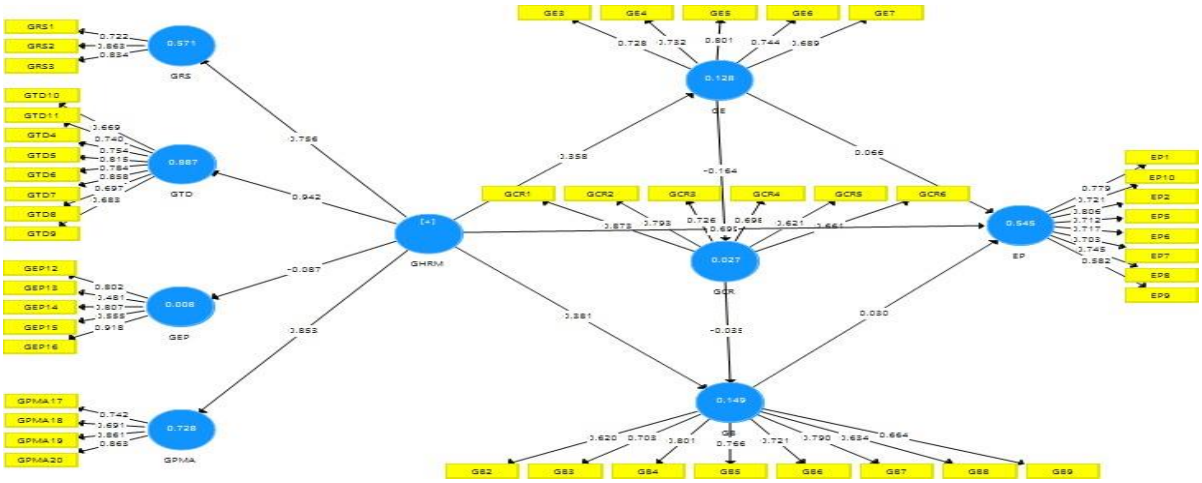

Figure 2. The measurement model is examined (using confirmation factors analyses)

Analyses of modeling structural equations:

Bootstrapping and PLS-SEM were used to test the hypotheses. Testing reveals the important, positive, and negative correlations between the variables. The 2 stages procedure was used to test the theories behind theGHRM procedures. For the examination of mediation and moderation, the indirect effect was utilized. The bootstrapping results are shown in Table no 4. According to the findings in Table 4, GHRM significantly and favorably affects EP (β = 0.450, t = 11.520, p = 0.00) and GE (β = 0.224, p = 0.00, t = 3.226). The findings affirm that green practices implemented in HEIs enhance environmental performance by increasingemployees' green engagement. Hence, H1 and H2 are supported. However, GHRM had little or no impacton green behavior (β = 0.320, p = 0.067, t = 1.523). Thus, H3 is not supported.

Table-4: *Path Evaluation*

Hypotheses		B	SD	T	P	LLCI	ULCI	Result
H1	GHRM -> EP	0.45	0.053	8.491	0.00	0.611	0.815	Supported

H2	GHRM -> GE	0.223	0.091	2.451	0.00	0.18	0.529	Supported
H3	GHRM -> GB	0.32	0.21	1.524	0.067	0.003	0.24	Not Supported
H4	GB -> EP	0.33	0.047	6.472	0.004	0.221	0.643	Supported
H5	GHRM->GE->GB->EP	0.332	0.082	3.342	0.05	0.26	0.327	Not Supported
H6	GE->GC->GB	0.21	0.48	2.625	0.042	0.080	0.14	Supported

Note: GHRM stands for "Green Human Resource Management," EP for "EnvironmentalPerformance," GC for "Green Engagement," and GB for "Green Behavior."

Interpretation:

The table summarizes the results of hypotheses testing. GHRM is shown to have a significant positive effect on Environmental Performance and Green Efficiency, both supported by the analysis. However, the impact of GHRM on Green Behavior is not statistically significant. Green Behavior significantly influences Environmental Performance, while the mediation path involving Green Efficiency, Green Behavior, and Environmental Performance does not meet the criteria for support. Lastly, Green Efficiency positively affects Green Commitment, which in turn positively influences Green Behavior. Overall, the results support the positive relationships outlined in most hypotheses, except for those concerning Green Behavior and the mediated effect.

Discussion Theoretical and Practical Implication:

The purpose of this study was to examine the effects of GHRM practices on the performance of the environment. In addition to investigating green creativity, the study also looked at the function of green engagement and green behaviors as mediators. Information was gathered from people employed by HEIs. The main objective of the study is to ascertain how GHRM embraces affect the performance of the environment. In this regard, the literature shows a strong relationship between the GHRM and ecological sustainability in the industrial, hospitality, and multi-industry sectors (Masri & Jaaron, 2017: Longoni, Luzzini, & Guerci, 2018: Guerci, Longoni, & Luzzini, 2016). The study's findings demonstrated that GHRM procedures have a significant influence on the sustainability of the environment. Employers believe that people who care about the environment will actively engage with ecological tasks, according to the report. Additionally, GHRM practices significantly influence green Engagement and green behaviors. The study's findings align with previous studies. For instance, according to Ababneh, (2021) GHRM practices influence employees' engagement with environmental issues.

According to Ababneh, (2021), GHRM practices including hiring, development, pay, and performance management encourage employee engagement. When employees are empowered, employees' Engagement tends to increase (Pinzone et al., 2016). The study's results correspond to accordance with prior studies in research which demonstrate how human resources management affects ecological behavior and involvement in the context of HEIs. It confirms that GHRM procedures raise employee engagement levels. For instance, environmental training teaches staff about environmental issues and aids in their adoption of green practices, resulting in a constant degree of staffengagement with the environment.

Prior research in several sectors focused on maintaining efficiency and protecting the environment. Several studies have also been conducted with the goal to defining the environmental management requirements for receiving a green or eco-friendly environment certification. The involvement of university

workers in environmental protection has also received scant thought. According to the study's findings, GHRM's effects on environmental performance in the educational sector are mediated through green engagement and green behavior. These findings demonstrate the importance of GHRM, which raises the level of employee engagement, influences employee behavior, and motivates workers to participate in environmentally friendly activities. The important work that HEIs do to maintain durability and protect ecosystems also advances educational research and encourages the growth of future human resources management studies in colleges and universities.

Conclusion:

Environmental responsibilities have increased due to environmental issues. In this context, there was little research that looked at how green dedication and behaviors helped implement practical green initiatives in higher education institutes'. The current study offers concrete proof of the focus placed on green management of human resources by the academic and non-academic employees at higher education institutes'. Accordingly, the study's conclusions showed that university officials should take green human resource management procedures into account to improve environmental performance. The study's findings emphasize that universities must train their employees to ensure that they may be able to perform green behaviors.

References:

Ababneh, O. M. A. (2021). How do green HRM practices affect employees' green behaviors? The role ofemployee engagement and personality attributes. *Journal of Environmental Planning and Management, 64*(7), 1204-1226.

Al-Ghazali, B. M., & Afsar, B. (2021). Investigating the mechanism linking task conflict with employees'innovative work behavior. *International Journal of Conflict Management, 32*(4), 599-625.

Al-Ghazali, B. M., & Afsar, B. (2022). Impact of psychological capital on mental health, readiness for organizational change, and job insecurity: hotel employees' perspective in COVID-19. *Journal of Tourism Futures*.

Ali, Q. M., Nisar, Q. A., Abidin, R. Z. u., Qammar, R., & Abbass, K. (2022). Greening the workforce in higher educational institutions: The pursuance of environmental performance. *EnvironmentalScience and Pollution Research*, 1-14.

Amabile, T., Hill, K., Hennessey, B., Tighe, E., Avolio, B., Bass, B., & Jung, D. Afsar, B., Badir, YF, & Saeed, BB (2014). Transformational leadership and innovative work behavior. Industrial Management &Data Systems, 114, 1270–1300. https://doi. org/10.1108/IMDS-05-2014-0152

Amabile, TM (1988). A model of creativity and innovation in organizations. Research in Organizational Behavior, 10 (1), 123–167. *Research in Organizational Behavior, 10*(1), 123-167.

Appelbaum, E. (2000). *Manufacturing advantage: Why high-performance work systems pay off*: CornellUniversity Press.

Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. L. (2000). Manufatoring advantage. *Why HighPerformance Work Systems Pay-Off*.

Bohra, B. S., Singh, P., Rana, A., Sharma, H., Arya, T, Pathak, M.,Sahoo, N. G. (2023). Specificfunctionalized graphene oxide-based vitrimer epoxy nanocomposites for self-healing applications. *Composites Science and Technology, 241*, 110143.

Chaudhary, A., Gustafson, D., & Mathys, A. (2018). Multi-indicator sustainability assessment of globalfood systems. *Nature communications, 9*(1), 848.

Cheema, S., & Javed, F. (2017). The effects of corporate social responsibility toward green human resource management: The mediating role of sustainable environment. *Cogent Business & Management, 4*(1), 1310012.

Chiappetta Jabbour, C. J., Sobreiro, V. A., Lopes

de Sousa Jabbour, A. B., de Souza Campos, L. M., Mariano, E. B., & Renwick, D. W. S. (2019). An analysis of the literature on humanitarian logistics and supply chain management: paving the way for future studies. *Annals of Operations Research, 283*, 289-307.

Demon, S. Z. N., Kamisan, A. I., Abdullah, N., Noor, S. A. M., Khim, O. K., Kasim, N. A. M., . . . Halim, N. A. (2020). Graphene-based Materials in Gas Sensor Applications: A Review. *Sensors & Materials, 32*.

DuBois, C. L., & Dubois, D. A. (2012). Strategic HRM as social design for environmental sustainability inorganization. *Human resource management, 51*(6), 799-826.

Dumont, J., Shen, J., & Deng, X. (2017). Effects of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values. *Human resource management, 56*(4), 613-627.

Guerci, M., Longoni, A., & Luzzini, D. (2016). Translating stakeholder pressures into environmental performance–the mediating role of green HRM practices. *The International Journal of Human Resource Management, 27*(2), 262-289.

Harvey, G., Williams, K., & Probert, J. (2013). Greening the airline pilot: HRM and the green performanceof airlines in the UK. *The International Journal of Human Resource Management, 24*(1), 152-166.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science, 43*, 115-135.

Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Gu, X. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The lancet, 395*(10223), 497-506.

Kim, S., Chen, J., Cheng, T., Gindulyte, A., He, J., He, S., Yu, B. (2019). PubChem 2019 update:improved access to chemical data. *Nucleic acids research, 47*(D1), D1102-D1109.

Lee, Y.-J., De Young, R., & Marans, R. W. (1995). Factors influencing individual recycling behavior in office settings: A study of office workers in Taiwan. *Environment and behavior, 27*(3), 380-403.

Longoni, A., Luzzini, D., & Guerci, M. (2018). Deploying environmental management across functions:the relationship between green human resource management and green supply chain management. *Journal of Business ethics, 151*, 1081-1095.

Lopes de Sousa Jabbour, A. B., Chiappetta Jabbour, C. J., Sarkis, J., Latan, H., Roubaud, D., Godinho Filho,M., & Queiroz, M. (2021). Fostering low-carbon production and logistics systems: framework and empirical evidence. *International Journal of Production Research, 59*(23), 7106-7125.

Lozano, R. (2006). Incorporation and institutionalization of SD into universities: breaking throughbarriers to change. *Journal of cleaner production, 14*(9-11), 787-796.

Mahdy, F., Alqahtani, M., & Binzafrah, F. (2023). Imperatives, Benefits, and Initiatives of Green HumanResource Management (GHRM): A Systematic Literature Review. *Sustainability, 15*(6), 4866.

Marin-Garcia, J. A., & Tomas, J. M. (2016). Deconstructing AMO framework: A systematic review.*Intangible capital, 12*(4), 1040-1087.

Martinko, M. J., Harvey, P., Brees, J. R., & Mackey, J. (2013). A review of abusive supervision research.*Journal of organizational behavior, 34*(S1), S120-S137.

Masri, H. A., & Jaaron, A. A. (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. *Journal of cleaner production, 143*, 474-489.

Merriman, K. K., & Sen, S. (2012). Incenting managers toward the triple bottom line: An agency andsocial norm perspective. *Human resource management, 51*(6), 851-871.

Muhammad Ali, Q., & Nisar, Q. A. (2022). Nexus between green human resource management andenvironmental performance: a green approach for higher education institutes. *Kybernetes*.

Naz, S., Jamshed, S., Nisar, Q. A., & Nasir, N. (2023). Green HRM, psychological green climate and pro-environmental behaviors: An efficacious drive towards environmental performance in China. *Current Psychology, 42*(2), 1346-1361.

Norton, T. A., Zacher, H., & Ashkanasy, N. M. (2014). Organisational sustainability policies and employeegreen behaviour: The mediating role of work climate perceptions. *Journal of Environmental Psychology, 38*, 49-54.

Paillé, P., & Boiral, O. (2013). Pro-environmental behavior at work: Construct validity and determinants.*Journal of Environmental Psychology, 36*, 118-128.

Paillé, P., Chen, Y., Boiral, O., & Jin, J. (2014). The impact of human resource management on environmental performance: An employee-level study. *Journal of Business ethics, 121*, 451-466.

Pham, N. T., Tučková, Z., & Jabbour, C. J. C. (2019). Greening the hospitality industry: How do green human resource management practices influence organizational citizenship behavior in hotels?A mixed-methods study. *Tourism Management, 72*, 386-399.

Pham, N. T., Tučková, Z., & Viet, H. V. (2019). *Green human resource management in enhancingemployee environmental commitment in the hotel industry.* Paper presented at the 2ndInternational Conference on Tourism Research.

Pinzone, M., Guerci, M., Lettieri, E., & Huisingh, D. (2019). Effects of 'green'training on pro- environmental behaviors and job satisfaction: Evidence from the Italian healthcare sector.*Journal of cleaner production, 226*, 221-232.

Pinzone, M., Guerci, M., Lettieri, E., & Redman, T. (2016). Progressing in the change journey towards sustainability in healthcare: the role of 'Green'HRM. *Journal of cleaner production, 122*, 201-211.

Provasnek, A. K., Sentic, A., & Schmid, E. (2017). Integrating eco-innovations and stakeholder engagement for sustainable development and a social license to operate. *Corporate SocialResponsibility and Environmental Management, 24*(3), 173-185.

Ramus, C. A., & Killmer, A. B. (2007). Corporate greening through prosocial extrarole behaviours–a conceptual framework for employee motivation. *Business strategy and the Environment, 16*(8),554-570.

Ramus, C. A., & Steger, U. (2000). The roles of supervisory support behaviors and environmental policyin employee "Ecoinitiatives" at leading-edge European companies. *Academy of Management journal, 43*(4), 605-626.

Rayner, J., & Morgan, D. (2018). An empirical study of 'green'workplace behaviours: Ability, motivationand opportunity. *Asia Pacific Journal of Human Resources, 56*(1), 56-78.

Ren, M., Zeng, W., Yang, B., & Urtasun, R. (2018). *Learning to reweight examples for robust deeplearning.* Paper presented at the International conference on machine learning.

Ren, S., Tang, G., & E Jackson, S. (2018). Green human resource management research in emergence: Areview and future directions. *Asia Pacific Journal of Management, 35*, 769-803.

Renwick, D., Redman, T., & Maguire, S. (2008). Green HRM: A review, process model, and researchagenda. *University of Sheffield Management School Discussion Paper, 1*(1), 1-46.

Renwick, D. W., Redman, T., & Maguire, S. (2013). Green human resource management: A review andresearch agenda. *International journal of management reviews, 15*(1), 1-14.

Saeed, B. B., Afsar, B., Hafeez, S., Khan, I., Tahir, M., & Afridi, M. A. (2019). Promoting employee's proenvironmental behavior through green human resource management practices. *CorporateSocial Responsibility and Environmental Management, 26*(2), 424-438.

Spooner, K., Chima, C., Salemi, J. L., & Zoorob, R. J. (2017). Self-reported preferences for patient and provider roles in cancer treatment decision-making in the United States. *Family Medicine andCommunity Health, 5*(1), 43-55.

Tang, G., Chen, Y., Jiang, Y., Paillé, P., & Jia, J. (2018). Green human resource management practices:scale development and validity. *Asia Pacific Journal of Human Resources, 56*(1), 31-55.

Wehrmeyer, J. A., Yeralan, S., & Tecu, K. S. (1996). Influence of strain rate and fuel dilution on laminarnonpremixed hydrogen—Air flame structure: An experimental investigation. *Combustion andflame, 107*(1-2), 125-140.

Zibarras, L. D., & Coan, P. (2015). HRM practices used to promote pro-environmental behavior: a UKsurvey. *The International Journal of Human Resource Management, 26*(16), 2121-2142