Green HRM as a Predictor of Environmental Outcomes: A SEM-Based Mediation Framework

Dr Neelakshi Chauhan[1*], Dr Surekha Rana[2]

[1*]Assistant Professor, College of Business Studies, Coer University, Roorkee, Uttarakhand, India, Email Id: neelakshichauhan034@gmail.com
[2]Professor, Department of management studies, Gurukul Kangri Deemed To Be University, Haridwar, Uttarakhand, India, Email Id: srana@gkv.ac.in

Abstract
Sustainable enterprise development has become a strategic priority for organizations operating in emerging economies, particularly in environmentally intensive industries. This study examines the role of Green Human Resource Management (GHRM) practices in enhancing sustainable organizational performance, with a specific focus on the mediating effect of environmental knowledge. Drawing on the Ability–Motivation–Opportunity (AMO) theoretical framework, the research conceptualizes GHRM as a driver of knowledge-based capabilities that support environmentally responsible and sustainable enterprise practices.
Empirical data were collected from 384 employees working in automobile manufacturing firms in Uttarakhand, India, and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that GHRM practices significantly influence environmental performance both directly and indirectly through the development of employees' environmental knowledge. The mediation effect highlights the importance of knowledge-driven human resource strategies in fostering sustainable enterprise outcomes.
The study contributes to the entrepreneurship and sustainability literature by demonstrating how internal organizational capabilities, particularly human resource practices, can strengthen sustainable enterprise performance in emerging markets. The findings offer practical insights for managers and policymakers seeking to integrate sustainability into business strategy while supporting long-term enterprise competitiveness. The study also aligns with key Sustainable Development Goals (SDGs), including SDG 8, SDG 9, SDG 12, and SDG 13, by promoting responsible organizational practices and sustainable industrial development.

Keywords: Green Human Resource Management (GHRM), Sustainable Enterprise Performance, Environmental Knowledge, Entrepreneurship and Sustainability, Organizational Capabilities, PLS-SEM, Emerging Economies, Automobile Industry

1. Introduction

The industrial sector is a significant source of pollution and industrial waste. (Antoni et al., 2020) has proposed the reduction of waste and pollution as a mechanism for enhancing the environmental performance of many enterprises. As a result, many government agencies, corporations, and resource-intensive businesses are now mandated to keep environmental reports, which have a major influence about the manufacturing sectors' environmental performance (Lin & Chen, 2020). When it comes to environmental performance, organizational initiatives have become crucial in coordinating the environmental impacts of business operations and organizational outputs with environmental regulations (Singh et al., 2020). The major worldwide problem of climate change presents one of the biggest challenges that humanity has ever faced (Stern,2011;Kazdin ,2009).Numerous stakeholders have been putting pressure on organizations to lessen the negative effects of their operations on the natural world (Yu,Ramanathan, & Nath, 2017; El-Kassar & Del Giudice, Singh, Chen, 2019; Guerci, Longoni, Luzzini, 2018).Businesses in the manufacturing sector have made it a goal to reduce their amount of industrial waste have seen an uptick in profits. (Kim et al., 2019). A company's environmental performance is evaluated using how well it takes care of the environment within legally established parameters and how well it plans and implements its business activities (Chong, jabbour, Subramanian & Roscoe, 2019). HRM allows a company to invest in its people, leading to better environmental performance and more support for sustainable growth (Roscoe et. al., 2019). According to literature, "Green HRM" relates to a company's strategy for managing its human resources that has a favorable influence on the environment (Kramar, 2014). The relevance of environmental management through green HRM is growing as more and more companies realise the benefits of implementing green HRM practises, such as investing in their employees' human capital, in hopes of achieving sustainable organisational development and most effective environmental management. (Jaramillo et al., 2018). However, "environmental knowledge" is the understanding of environmental problems and potential remedies. Employees are better able to comprehend their leaders' judgments and

perspectives on environmental issues due to the high degree of environmental expertise within the organization (Addoah & Amoah, 2021). Literature has demonstrated that employees' green behaviour with engagement in environmental initiatives are influenced by their environmental knowledge (Pan et al., 2012). One of the most effective strategies to deal with environmental problems and advance environmental sustainability is to raise environmental knowledge and awareness. (Guzman et al., 2020). India is a developing nation undergoing industrialisation and has faced many challenges in recent decades, many of which have been caused by factory pollution. The country's natural ecosystem is in danger due to the swift rise of industry. The severe environmental degradation caused by urban and industrial waste has caught the attention of executives, who are seeking to ensure ethical recycling (Swain, 2024). People in the community have become more concerned and environmentally aware as environmental challenges and issues have grown in developing nations like India (Ipsos, 2024). The Indian auto industry mirrors the country's overall sluggishness in properly implementing manufacturing emission rules. Two- and four-wheeled vehicles are in high demand due to the expanding economy and rising middle class (IEA, 2024). Automobile emissions are a major contributor to environmental pollution in India's urban areas. As a result, Indian automakers must adopt green measures to reduce pollution and environmental damage (CPCB, 2024). Considering the importance of staff members' environmental knowledge and outcomes of implementing green HRM practices, it can invariably affect the long-term sustainability of environmental performance in industrial businesses (Renwick et al., 2020). Understanding and framing how green HRM practices with environmental knowledge effect the environmental sustainability of the Indian automobile sector is the study's overarching goal. There haven't been many studies on sustainable environmental performance, green HRM practices, and environmental knowledge. Studying the connection between environmental knowledge and green HRM practices is important for manufacturing companies that seek to achieve sustainable environmental performance. This study also aligns with key “United Nations Sustainable Development Goals, particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action)”.

2. Theoretical Background And Hypotheses Development

2.1 AMO Theory

Appelbaum et al. (2000) created the AMO model, which was based on Baily's 1993 model. According to the A-M-O theory, abilities include mental, financial, training, and social skills, while motivation can be fostered through rewards, recognition, increased responsibility, and job stability. Opportunities are created through cooperation, clear communication, a supportive work environment, and adaptability (Boon et al., 2014; Wood et al., 2015; Salas-Vallina et al., 2021). In this context, GHRM practices play a crucial role in enhancing organisational sustainability by developing employees’ green skills through strategic recruitment, selection, and training. Furthermore, these practices encourage employees to align with eco-friendly values and provide opportunities for active participation in environmental initiatives, thereby strengthening their contribution towards sustainability goals (Ehikioya, 2022). Building on the AMO framework, this study considers GHRM as a strategic approach that enhances employees’ abilities, motivation, and opportunities within the workplace. This, in turn, promotes higher levels of environmental knowledge, which encourages employees to engage in pro-environmental behaviour. Thus, Green HRM, environmental knowledge, and environmental performance are both directly and indirectly interrelated, and the AMO theory provides a comprehensive and integrated perspective to understand these relationships.

2.2 Green HRM and Environmental Performance

One of the key components of green management is green HRM, which may help organisations perform sustainably(Morgan &Rayner ,2018).Literatures has indicated in their findings that Long term success of the company is impacted by green HRM, which includes "green recruitment, green training and development, as well as green rewards" (Zaid et al., 2018).HR managers can increase employee understanding of environmental issues by selecting relevant programmes for employee training, which will enhance organization's performance in regards to environmental challenges(Herman& Egri , 2000). Employee involvement and activity in environmental management enhances environmental management practises, promotes resource efficiency, and reduces waste pollution in the workplace (Ahmad, 2015). Green HRM strengthens employee environmental behaviour, increases organizational commitment, and enhances an organization’s environmental performance (Tahir et al., 2024; Alsakarneh, 2026).

Accordingly, the research's first hypothesis is described as follows:

H1: “Green HRM positively influence environmental performance of the organization”.

2.3 Green HRM and Environmental Knowledge

Knowledge is described as "a flexible combination of, contextual knowledge, expert insight, experience, values that offers a framework for evaluating and

incorporating fresh knowledge and experiences" (Prusak & Davenport, 1998). According to Smith and Bollinger (2001), knowledge is a person's interpretation of information based on their own experiences, knowledge, and skills. "Environmental knowledge" refers to familiarity with environmental problems and their potential resolutions (Zsoka et al., 2013). The phrase "green knowledge" describes a method of bringing up a sustainable equilibrium in environmental conditions through societal along with economic improvements. (Jamison, 2001).

According to (Officer et al., 2016) Employees' behaviour and performance in respect to environmental issues are influenced by their environmental knowledge. Researchers also discovered that when environmental knowledge is combined with green HRM practises, will enhance individual and ultimately organisational performance in terms of environmental challenges. If green HRM practices be used, it can be seen to what extent an organization's employees are aware of and understand environmental issues.

As employees' understanding of these issues grows, they are more likely to get involved in them and work harder to meet environmental goals (Bazrkar & Moshirpour, 2021). According to a review of earlier studies, people can work more effectively in regard to environmental issues if they have more knowledgeable about the problems and remedies impacting the environment. (Fawehinmi et al., 2019; Mariani et al., 2024; Li & Li, 2025) revealed a favourable association between green HRM & environmental knowledge.

The second research hypothesis is therefore explained as following:

H2: "**Green HRM positively influence environmental knowledge".**

2.4 Environmental Knowledge and Environmental Performance

The degree to which a person is knowledgeable about environmental issues is one of the most important elements influencing human behaviour in this field. For environmental operations to be successful, knowledge is seen as essential (Anwar et al., 2020). Much research has looked at how people's environmental knowledge affects their environmental behaviour, and in the majority of studies, a lack of knowledge is cited as one of the biggest obstacles to people engaging in positive environmental behaviours (Gilal et al., 2019). One of the most important cognitive elements that affects a person's attitudes toward environmentally friendly practices is knowledge (Zhao et al., 2014). Employees of a company who are knowledgeable about the environment tend to comprehend environmental issues more thoroughly and, as a result, hold greater control beliefs (Amoah & Addoah, 2021). Additionally, research has shown that those who understand the environment better put out more effort when producing eco-friendly goods. (Singh & Pandey, 2020; Bresciani et al., 2023; Dar et al., 2025) identified a favourable association between environmental performance and knowledge. The results of the investigation show that accommodation with greater environmentally conscious are more likely to adopt environmental management strategies, which increase environmental performance.

In light of this, the fourth research hypothesis is described as follows:

H3: "Environmental knowledge positively influences the environmental performance".

2.5 Mediating Role of Environmental Knowledge

Environmental knowledge is the degree of comprehension and familiarity with environmental problems and solutions. (2013) (Zsoka et al.). Environmental awareness is defined as "people's knowledge and understanding of their environment as well as individuals' and organisations' conscious, voluntary, and committed presence to preserve and maintain the environment" (Portney, 2016). Green HRM and environmental knowledge are positively correlated (Fawehinmi et al., 2019). Environmental performance was positively impacted by environmental knowledge (Singh & Pandey, 2020). "Environmental knowledge can serve as a mediator between Green HRM practices and environmental performance," according to this. Understanding of environmental difficulties with their capacity to apply environmentally friendly practices in the workplace is referred to as environmental knowledge and sustainability concepts. The term "green HRM" describes the procedures, methods, & systems that organisations adopt to manage their employees' impact on the environment. These practices can include training employees on sustainability, offering incentives for eco-friendly behaviour, and integrating environmental considerations into the strategic decision-making process of the organisation. (Renwick et al., 2008). Employees who are well-versed in environmental issues are more likely to adopt environmentally friendly habits and practices, thereby improving environmental performance (Dar et al., 2025). Green HRM practices can enhance employees' environmental knowledge, which, in turn, can lead to improved environmental sustainability.

Accordingly, the research's seventh hypothesis is described as follows:

H4: "Environmental knowledge mediated the relationship between green HRM practices and environmental performance".

2.6 PROPOSED MODEL

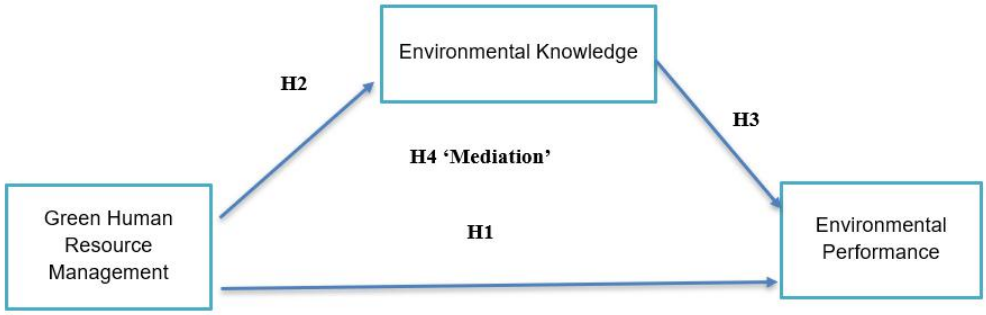

Figure 1: conceptual model

3. Research Methodology

3.1 Sample and procedure for data collection

A descriptive research approach and a convenience sample design were used in this study. Employees of automotive industry in India's Uttarakhand state made up the study's statistical population. 500 employees were given an electronic questionnaire with a clear structure, and 384 responses were gathered. A weekly follow-up was conducted to ensure a higher response rate by reminding the recipients to participate. As a result of their incorrect completion, certain surveys were excluded from the data collection process. Only responses that were properly completed were considered for analysis to ensure the data's dependability. Each item in this study was evaluated using the Likert scale "one strongly disagrees to five strongly agree". The research's conceptual model states that there is one independent variable related to the green human resource management, one mediating variable related to environmental knowledge, and one dependent variable related to environmental performance. Thirteen items relating to green HRM have been adapted from (Tang et al., 2017), nine items relating to environmental knowledge were adapted from (Gasterleben, 2002, and seven items relating to environmental performance were adapted from (Kim etal., 2018). With the aid of SPSS 23.1 and Smart PLS 4.0, the data were examined. According to Anderson and Gerbing (1988), the SEM procedure included two stages: the structural and measurement model. Smart PLS-SEM was used to assess both data levels.

3.2 Measures

Thirteen items relating to green HRM have been adapted from (Tang et al., 2017), nine items relating to environmental knowledge were adapted from (Gasterleben, 2002, and seven items relating to environmental performance were adapted from (Kim etal., 2018).

4. Results

Table 1: Sample Characteristics

Classification	Frequency	Composition Ratio (%)
Gender		
Male	288	75 %
Female	96	25 %
Age		
25-35	96	25 %
36-45	165	43 %
46-55	96	35 %
56-65	27	07 %

Education Qualification		
Graduate	121	31.5 %
Post graduate	217	56.5 %
PHD	46	12 %
Experience		
Below 10	84	22%
10-20	152	39.5 %
20-30	86	22.5 %
30-40	35	09 %
Above 40	27	07 %

4.1 Fitting measurement models

The PLS-SEM method's model analysis approach has been used to fit measurement models using reliability, convergent validity, and divergent validity.

4.1.1 Reliability analysis

Hair et al. (2020) establish a threshold of 0.60 for acceptable outer loadings, and a careful inspection of these loadings revealed that a few items fell below this level. Therefore, these items were eliminated, which included 4 factors of green HRM (GHRM 10 = 0.343, GHRM11=0.520, GHRM 12=0.343, GHRM13 = 0.568), 4 factors of environmental knowledge (EK1 = 0.526, EK2 =0.567, EK3 = 0.506, EK4 =0.520), and two factors of environmental performance (ENP 5 = 0.568, ENP7 = 0.560). After removal of these items that composite reliability ranged from 0.902 to 0.963, which met the recommendation made by (Hair et al., 2020).

4.1.2 Convergent Validity

The outer loadings, AVE, & Composite Reliability were calculated using the SmartPLS method to assess the convergent validity. The AVE values above 0.50 met the requirement for convergent validity with factor loadings> 0.60, and CR >0.70 (Hair et al., 2020).

Table 2 displays the test's outcomes.

Table 2: "Outer loadings, reliability analysis and AVE"

Variables	Items	Factor loading	Cronbach's Alpha	combined reliability	AVE
GREEN HUMAN RESOURCE MANAGEMENT	GHRM1	0.895			
	GHRM2	0.901			
	GHRM3	0.902			
	GHRM4	0.870			
	GHRM5	0.839	0.963	0.968	0.772
	GHRM6	0.872			
	GHRM7	0.859			
	GHRM8	0.899			
	GHRM9	0.869			
ENVIRONMENTAL KNOWLEDGE	EK5	0.850			
	EK6	0.848			
	EK7	0.854	0.904	0.929	0.723

	EK8	0.898			
	EK9	0.797			
ENVIRONMENTAL PERFORMANCE	ENP1	0.820			
	ENP2	0.826			
	ENP3	0.821	0.863	0.902	0.647
	ENP4	0.825			
	ENP6	0.726			

4.1.3 Validity

The HTMT test was employed in this investigation. It has been established that the Fornell-Larker criterion does not accurately assess the segregation validity, particularly if all indices are loaded. Heterotrait-Monotrait (HTMT) correlation value should fall under 0.90 (Henseler et al., 2015). Table 3 displays the test's outcomes.

Table 3: Discriminant validity test (HTMT results)

	(EK)	**(ENP)**	**(GHRM)**
(EK)	0.850		
(EP)	0.786	0.805	
(GHRM)	0.625	0.658	0.879

4.2 Fitting the structural research model

The research's hypotheses will be tested when the measurement models are fitted, which involves fitting the study's structural model (conceptual model). T-values, R-squared, and Q-squared, multicollinearity, F square were used to make sure that the conceptual model for the investigation suited the data well.

4.2.1 R Square

To evaluate the feasibility of a study's conceptual model, this criterion is essential. According to Cohen's suggestion, an acceptable R^2 should be above 0.26 (26%) for explained variance. Table 4 displays the outcomes of this test.

Table 4: R Square results

	R Square
Environmental Knowledge	0.391
Environmental Performance	0.663

4.2.2 F-Square (Effect Size)

The significance of the observed effect was evaluated using F2, a metric for how much variation in the dependent variable can be attributed to a specific independent variable. "Effect sizes were classified as small, medium, and big based on values between 0.00 and 0.15, 0.15 and 0.35, and over 0.35, respectively, according to (Hair et al., 2020)".

Table 5: F^2 (effect size) results

F^2	**Effect**	**Size**

EK -> ENP GHRM -> EK GHRM -> ENP	0.685 0.643 0.134	Large Large Small

4.2.3 Multicollinearity (inner VIF)

According to (Hair et al., 2020), there is no multicollinearity problem if the VIF is less than 5. Therefore, multicollinearity was not a problem for our investigation.

Table 6: Multicollinearity (inner VIF) results

	VIF
EK -> ENP	1.643
GHRM -> EK	1.000
GHRM -> ENP	1.643

4.2.4 Q Square

The model's capacity for prediction is determined by this criterion. The prediction power of the model for endogenous structures was measured at three different intensities by (Henseler et al., 2009). 0.02, 0.15, & 0.35. These numbers, in that order, show the weak, medium, & strong predictive powers of the structure or structures. The model's endogenous structures, environmental performance, and environmental knowledge are, respectively, 0.377 and 0.414. This finding is consistent with a sufficient level of predicting ability.

Table 7: Q^2 predict

	Q^2
Environmental Knowledge	0.377
Environmental Performance	0.414

4.2.5 Hypothesis results

At this point, the research hypotheses are tested based on the "t-Values, p-Values, & path coefficients" calculated by the partial least squares algorithm used to analyse research data. Each path's significance coefficient is considered to be statistically significant at the 95% level if its value is more than 1.96. Table 8 and Figure 2 display the outcomes of this test.

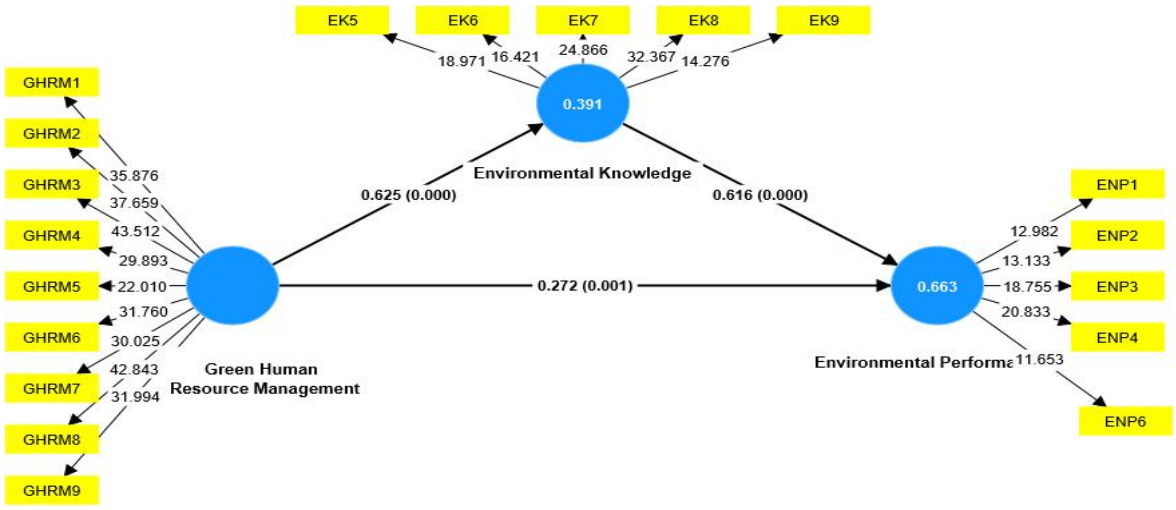

Figure 2: Structural Model

Table 8: Hypothesis results

Hypotheses	T- value	P- value	Path coefficients	Results
GHRM→ ENP	3.391	0.001	0.272	Supported
GHRM→ EK	7.877	0.000	0.625	Supported
EK → ENP	7.028	0.000	0.326	Supported
GHRM→EK → ENP	3.385	0.001	0.228	Supported

5. Discussion

Green HRM, which promotes employee knowledge for environmental issues, was the focus of this research. The research results explain 66.3% of variance in the dependent variable within automotive sectors of Uttarakhand's state. The outcomes revealed that the green HRM significantly improved environmental performance (β=0.272), meaning that businesses can improve their sustainability by hiring environmentally conscious employees. The findings were in line with research by (Yusoff et al., 2020 and Mills et al., 2020). In accordance with the second hypothesis, environmental knowledge is significantly correlated with green HRM, with (β = 0.625). Companies in the Indian automotive sector can improve their own and their industry's environmental performance by adopting measures like training and employees' green development. They will be able to make greater strides towards environmental sustainability as a result of this. It has been shown through studies that this idea is consistent with previous findings (Fawehinmi et al., 2020). Companies in the Indian automobile sector can presumably improve their environmental performance and progress in the direction of sustainability through initiatives such as "green performance management"& "green training". According to investigations, results were consistent with studies by Mohammad et al. (2019). The third hypothesis discovered a statistically significant relationship between environmental performance & environmental knowledge (β=0.326). As a result, it was determined that businesses can improve environmental performance with the aid of their employees by offering training on environmental issues, fostering an environmentally friendly culture, and rewarding employees for adopting eco-friendly practices. Investigations revealed that the outcomes matched those of studies by Geiger et al. (2019). According to the fourth hypothesis, environmental knowledge mediates the association between green HRM and environmental performance, with (β = 0.228). It is recommended that the studied companies' managers institute policies for

disseminating knowledge of green HRM, promoting a green culture within the organisation, and encouraging employees to provide feedback and suggestions.

6. Implication

6.1 Practical Implication

From a practical point of view, the findings indicate that organisations that want to improve their environmental performance need to make environmental objectives a part of their overall HR system. Rather than treating sustainability as a separate activity, managers should integrate Green Human Resource Management practices into routine HR functions. This includes hiring employees who are environmentally aware, providing ongoing environmental training, evaluating performance based on environmental responsibilities, and linking rewards to eco-friendly behavior. Such practices help organisations achieve stronger environmental outcomes.

The significant influence of GHRM on environmental knowledge further highlights the need for well-planned learning and awareness initiatives. Organisations should regularly organise environmental training programs, workshops, and opportunities for knowledge sharing so that employees clearly understand environmental standards and sustainable ways of working.

In addition, since environmental knowledge has a direct effect on environmental performance, managers should encourage employees to apply this knowledge in their day-to-day work. Giving employees opportunities to participate in environmental initiatives and involving them in environmental decision-making can further strengthen organisational environmental performance.

6.2 Theoretical Implication

This study advances theoretical understanding by showing that Green Human Resource Management (GHRM) can enhance environmental performance through the development of employees' environmental knowledge. It highlights that GHRM is more than a set of policies; it is a mechanism for building employees' awareness, skills, and capacity to act sustainably. Environmental knowledge emerges as a crucial link, signifying how green HR

practices are translated into tangible environmental outcomes. These findings emphasise that employees' understanding and engagement are central to achieving sustainability objectives. Overall, the study underscores the role of knowledge-driven HR practices in fostering long-term and effective environmental performance.

7. Conclusion

Achieving environmental performance is essential for all firms to increase their competitive edge. The organization's primary strategic objective might be considered as environmental sustainability. Employing green HRM techniques can be a significant motivator for inspiring workers to protect the environment. According to research, employers can motivate their staff to work towards becoming green firms by encouraging environmental knowledge, passion, and awareness among them. Green HRM entails putting plans in place to educate management and workers about green practices to foster environmental sustainability initiatives that aid organisations become green organisations.

8. Limitations And Suggestions For Future Research

There are certain issues with the study at hand that need to be resolved. Firstly, the sample size is inadequate in comparison to the population, hence necessitating additional study to support the results. Additionally, the study's results may be influenced by varying perspectives within the statistical community on the subject. Moreover, the results are specific to the Indian automotive sector and the organizations included in the study, and their applicability to other sectors and organizations should be carefully evaluated. The present research examined the effects on environmental performance of four "green human resource management practices: green performance management, green training and development, green pay and rewards, and green recruitment and selection".

However, Future studies could examine how additional "green HRM practices, such green safety management & green human resource planning, affect environmental performance". In future studies, it is also advised that researchers look at the mediating effects of other factors including employee commitment and organizational culture.

Declaration of Interest

The authors hereby confirm that there was no conflict of interest in publishing this paper. No personal or financial relationships existed that could have affected the content of the study. All research work and preparation of this paper were conducted with strict compliance with ethical standards

References

1. Ahmad, S. (2015). Green human resource management: Policies and practices. *Cogent Business & Management*, *2*(1), 1030817. https://doi.org/10.1080/23311975.2015.1030817
2. Álvarez Jaramillo, J., ZarthaSossa, J. W., & Orozco Mendoza, G. L. (2018). Barriers to sustainability for small and medium enterprises in the framework of sustainable development—L iterature review. *Business Strategy and the Environment*, *28*(4), 512-524. https://doi.org/10.1002/bse.2261
3. Amoah, A., & Addoah, T. (2021). Does environmental knowledge drive pro-environmental behaviour in developing countries? Evidence from households in Ghana. *Environment, Development and Sustainability*, *23*, 2719-2738. https://doi.org/10.1007/s10668-020-00698- x
4. Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin, 103(3)*, 411.
5. Antoni, D., Jie, F., &Abareshi, A. (2020). Critical factors in information technology capability for enhancing firm's environmental performance: case of Indonesian ICT sector. *International Journal of Agile Systems and Management, 13(2), 159-181.* https://doi.org/10.1504/IJASM.2020.107907.
6. Anwar, N., Nik Mahmood, N. H., Yusliza, M. Y., Ramayah, T., Noor Faezah, J., & Khalid, W. (2020). Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus. *Journal of Cleaner Production, 256,* 120401. https://doi.org/10.1016/j.jclepro.2020.120401
7. Alsakarneh, A. (2026). An evidence-based examination of how green HRM practices contribute to social responsibility and environmental performance. *Discover Sustainability*, *7*(1), 529.
8. Babiak, K., & Trendafilova, S. (2011). CSR and environmental responsibility: motives and pressures to adopt green management practices. GILAL ET AL. 9 *Corporate Social Responsibility and Environmental Management, 18(1),* 11–24. https://doi.org/10.1002/csr.229
9. Bazrkar., A. &Moshiripour., A. (2021). Corporate Practices of Green Human Resources Management, *Foresight and STI Governance, 15(1),* 97-105.
10. Bresciani, S., Rehman, S. U., Giovando, G., & Alam, G. M. (2023). The role of environmental management accounting and environmental knowledge management practices influence on environmental performance: mediated-moderated model. *Journal of knowledge*

management, *27*(4), 896-918.
11. Bollinger, A. S., & Smith, R. D. (2001). Managing organizational knowledge as a strategic asset. *Journal of knowledge management*.
12. Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences, 2nd Ed. New York: Routledge.
13. Dar, M. S., Khan, H. H., & Bano, S. (2025). Examining the Impact of Environmental Knowingness and Orientation on Environmental Performance: Mediating Role of Awareness of SGDs. *Sage Open*, *15*(4), 21582440251382622.
14. Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Harvard Business Press.
15. Dedeurwaerdere, T., Azadi, H., Wam, H. K., De Clercq, M., & Van Huylenbroeck, G. (2017). Green HRM practices and the role of employee environmental beliefs and values: A conceptual framework. *Sustainability, 9(8),* 1360.
16. Egri, C. P., & Herman, S. (2000). Leadership in the North American environmental sector: Values, leadership styles and contexts of environmental leaders and their organizations. *Academy of Management Journal*, *43*(4), 571–604.
17. Evangelinos, K., Nikolaou, I., & Leal Filho, W. (2015). The effects of climate change policy on the business community: a corporate environmental accounting perspective. *Corporate Social Responsibility and Environmental Management, 22(5),* 257-270.
18. Fawehinmi, O., Yusliza, M. Y., Mohamad, Z., Faezah, J. N., & Muhammad, Z. (2020). Assessing the green behaviour of academics: The role of green human resource management and environmental knowledge. *International Journal of Manpower, 41(7),* 879-900.
19. Gatersleben, B., Steg, L., &Vlek, C. (2002). Measurement and determinants of environmentally significant consumer behavior. *Environment and Behavior, 34(3),* 335–362. https://doi.org/10.1177/0013916502034003004
20. Gilal, F. G., Ashraf, Z., Gilal, N. G., Gilal, R. G., &Chaana, N. A. (2019). Promoting environmental performance through green human resource management practices in higher education institutions: A moderated mediation model. *Corporate Social Responsibility and Environmental Management,* csr.1835. https://doi.org/10.1002/csr.1835
21. Guzman, A., Heinen, J. T., & Sah, J. P. (2020). Evaluating the Conservation Attitudes, Awareness and Knowledge of Residents towards Vieques National Wildlife Refuge, Puerto Rico. *Conservation & Society*, 18(1), 13–24.
22. Hair Jr, J. F., Howard, M. C., &Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research, 109,* 101-110.
23. Harvey, G., Williams, K., & Probert, J. (2013). Greening the airline pilot: HRM and the green performance of airlines in the UK. *The International Journal of Human Resource Management, 24(1),* 152–166. https://doi.org/10.1080/09585192.2012.669783
24. 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.
25. Hornsey, M. J., Harris, E. A., Bain, P. G., & Fielding, K. S. (2006). Meta-analyses of the determinants and outcomes of belief in climate change. *Nature Climate Change, 6(7),* 622-626
26. In D. Skarlicki, S. Gilliland, & D. Steiner (Eds.), *Social issues in management* (Vol. 3, pp. 175–204). Greenwich, CT: Information Age Publishing.
27. Jamison, A. (2001). *The making of green knowledge: Environmental politics and cultural transformation*. Cambridge University Press.
28. Kazdin, A. E. (2009). Psychological science's contributions to a sustainable environment: Extending our reach to a grand challenge of society. *American Psychologist*, *64*(5), 339. https://doi.org/10.1037/a0015685.
29. Kim, Y. J., Kim, W. G., Choi, H. M., &Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *International Journal of Hospitality Management*, *76*, 83-93. https://doi.org/10.1016/j.ijhm.2018.04.007
30. Kormos, C., & Gifford, R. (2014). The validity of self-report measures of pro environmental behavior: A meta-analytic review. *Journal of Environmental Psychology*, *40*, 359-371.
31.. Kramar, R. (2014). Beyond strategic human resource management: is sustainable human resource management the next approach?. *The International Journal of Human Resource Management*, *25*(8), 1069-1089. https://doi.org/10.1080/09585192.2013.816863.
32. Lin, B., & Chen, X. (2020). Environmental regulation and energy-environmental performance— empirical evidence from China's non-ferrous metals industry. *Journal of Environmental Management*, *269*, 110722.https://doi.org/10.1016/j.jenvman.2020.110722.
33. Li, Y., & Li, Y. (2025). Enhancing pro-environmental behavior through green HRM: mediating roles of green mindfulness and knowledge sharing for sustainable outcomes. *Sustainability*, *17*(6), 2411.
34. 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. https://doi.org/10.1007/s10551016-3228-1.

35. Mariani, M., Almira, M., & Nathania, P. (2024). The mediating roles of environmental knowledge and organizational identity in the relationship between green HRM, leadership, and employee green behavior. *Journal of Propulsion Technology, 45*(3).
36. Pan, S. L., Chou, J., Morrison, A. M., Huang, W. S., & Lin, M. C. (2018). Will the future be greener? The environmental behavioral intentions of university tourism students. *Sustainability*, *10*(3), 634. https://doi.org/10.3390/su10030634
37. Phillips, L. (2007). Go green to gain the edge over rivals. People Management, 23rd August, p.9. 38 Portney, P. R. (2016). Public policies for environmental protection, Routledge.
38. Rayner, J., & Morgan, D. (2018). An empirical study of 'green' workplace behaviours: Ability, motivation and opportunity. *Asia Pacific Journal of Human Resources*, *56*(1), 56–78. https://doi.org/10.1111/1744-7941.12151
39. Renwick, D. W., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. *International Journal of Management Reviews*, *15*(1), 1–14. https://doi.org/10.1111/j.14682370.2011.00328.x
40. Renwick, D. W., Redman, T., & Maguire, S. (2016). Green HRM: A review, process model, and research agenda. *Journal of Management, 42(1),* 163-196.
41. Renwick, D., Redman, T., & Maguire, S. (2008). Green HRM: A review, process model, and research agenda. *University of Sheffield Management School Discussion Paper*, *1*, 1–46.
42. Robertson, J. L., & Barling, J. (2013). Greening organizations through leaders' influence on employees' pro-environmental behaviors. *Journal of Organizational Behavior, 34(2)*, 176–194. https://doi.org/10.1002/job.1820
43. Roscoe, S., Subramanian, N., Jabbour, C. J., & Chong, T. (2019). Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental performance for sustainable development. *Business Strategy and the Environment*, *28*(5), 737-749. https://doi.org/10.1002/bse.2277
44. 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. *Corporate Social Responsibility and Environmental Management*, *26*(2), 424–438. https://doi.org/10.1002/csr.1694
45. Singh, M., & Pandey, A. (2020). The impact of environmental knowledge on environmental performance in the Indian hotel industry. *Journal of Cleaner Production, 268*, 121926.
46. Singh, S. K., Del Giudice, M., Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological forecasting and social change*, *150*, 119762. https://doi.org/10.1016/j.techfore.2019.119762.
47. Stern, P. C. (2011). Psychological contributions to limiting climate change. *American Psychologist*, *66*(4), 303-14. https://doi.org/10.1037/a0023235.
48. Stringer, L. (2009). *The green workplace: Sustainable strategies that benefit employees, the environment, and the bottom line*. New York: St. Martin'sPress.
49. Swain, C. K. (2024). Environmental pollution indices: a review on concentration of heavy metals in air, water, and soil near industrialization and urbanisation. *Discover Environment*, *2*(1), 5.
50. Tahir, A. H., Umer, M., Nauman, S., Abbass, K., & Song, H. (2024). Sustainable development goals and green human resource management: A comprehensive review of environmental performance. *Journal of environmental management*, *370*, 122495.
51. 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.
52. Tariq, S., Jan, F. A., & Ahmad, M. S. (2016). Green employee empowerment: A systematic literature review on state-of-art in green human resource management. *Quality & Quantity, 50(1),* 237–269. https://doi.org/10.1007/s11135-014-0146-0.
53. Wei, L. Q., & Lau, C. M. (2018). Green human resource management practices: Drivers and outcomes. *International Journal of Hospitality Management, 69*, 26-34.
54. Whitmarsh, L., & O'Neill, S. (2010). Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviors. *Journal of Environmental Psychology*, *30*(3), 305–314. https://doi.org/10.1016/j.jenvp.2010.01.003
55. Wu, C.-L., Fang, D.-P., Liao, P.-C., Xue, J.-W., Li, Y., & Wang, T. (2015). Perception of corporate social responsibility: The case of Chinese international contractors. *Journal of Cleaner Production*, *107*, 185–194. https://doi.org/10.1016/j.jclepro.2015.04.143
56. Yu, W., Ramanathan, R., & Nath, P. (2017). Environmental pressures and performance: An analysis of the roles of environmental innovation strategy and marketing capability. *Technological*

Forecasting and Social Change, *117*, 160-169. https://doi.org/10.1016/j.techfore.2016.12.005

57. Zaid, A. A., Jaaron, A. A. M., & Talib Bon, A. (2018). The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study. *Journal of Cleaner Production*, *204*, 965–979. https://doi.org/10.1016/j.jclepro.2018.09.062
58. Zsóka, Á. Szerényi, Z. M., Széchy, A., & Kocsis, T. (2013). Greening due to environmental education? Environmental knowledge, attitudes, consumer behavior and everyday pro environmental activities of Hungarian high school and university students. *Journal of Cleaner Production, 48,* 126–138. https://doi.org/10.1016/j.jclepro.2012.11.030