Green Human Resource Management and Environmental Performance: A Bibliometric Study and Future Directions

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Abstract: The global need to solve escalating environmental challenges brings increased focus on organizations and their impact on environmental performance. The significance of green human resources management (GHRM) is increasingly recognized as aligning organizational objectives with environmental sustainability goals, fostering eco-friendly workplace practices and enhancing corporate social responsibility. GHRM and its contribution to environmental performance has received growing attention from scholars, however, a need to systematically review and synthesize the literature in this area remains. This research offers a comprehensive overview of green human resources management and environmental performance literature highlighting the major themes in the current developments along with the new trends and patterns for future research observed in this field. For conducting a systematic literature review and bibliometric analysis, a total of 227 documents were extracted from the Scopus database. Following the PRISMA 2020 Protocol, 144 published articles from 2014 to 2024 were included for final analysis. Performance analysis and science mapping (citation, co-citation, bibliographical coupling, and keyword co-occurrence analysis) were performed to examine how knowledge has been constructed, disseminated, and shaped over time. VOSviewer software was used to systematically investigate, map, and visualize the bibliometric results as the main trends. The study reveals the current status in GHRM and performance management publications and citations, identifying key contributors such as influential countries, journals, and authors and outlines keywords, and thematic areas. Lastly, this study identifies research gaps and emerging trends such as green transformational leadership, green innovation, green behaviour, environmental values, green intellectual capital, environmental economics in GHRM, offering valuable insights for scholars and practitioners seeking to advance understanding and implementation of green HR practices.

Keywords: Green Human Resources Management; Environmental Performance; Systematic Literature Review; Bibliometric Analysis; Science Mapping

1. Introduction

The escalating global environmental challenges have increased the focus on organizations and their impact on environmental performance. With increasing societal pressures for organizations to adopt environmental responsibility and manage their environmental footprint, coupled with the need to remain competitive (Tang et al., 2018), there is a growing interest to integrate environmental sustainability into organizational and human resource management (Jabbour and de Sousa Jabbour, 2016; Deshwal, 2015).

Green human resources management (GHRM) is emerging as a strategic function within organizations, contributing to the successful design and implementation of environmental management practices (Jabbour and de Sousa Jabbour, 2016). GHRM plays a crucial role in achieving enhanced environmental performance (Ramasamy, 2017; Ansari et al., 2021; Marrucci et al., 2023). GHRM enables organisations to attract, select, recruit environmentally conscious employees, train and develop employees' environmental knowledge and competencies, change environmentally unfriendly behaviours, implement environmental performance in the organisation and reward employees for it (Deshwal, 2015; Jabbour and de Sousa Jabbour, 2016). By fostering greater efficiency, reducing costs, and promoting sustainable operations, GHRM enables organizations to operate in an environmentally friendly manner (Hosain et al., 2016).

GHRM and its contribution to environmental performance has received growing attention from scholars. However, there remains a need for a systematic review and synthesis of the literature in this field. This research provides a comprehensive overview of the GHRM and environmental performance literature, highlighting major themes, current developments, and new trends and patterns for future research.

The study aims to examine how knowledge in GHRM and environmental performance has been disseminated, and shaped over time, and to make recommendations for future research.

The following **research questions** were addresed:

RQ 1: What are the current status and trends of publications and citations in the GHRM and environmental performance literature?
RQ 2: Which countries, journals and authors have contributed the most to the GHRM environmental

performance literature?
RQ 3: What are the most frequently used keywords and thematic areas in the literature?
RQ4: What are emerging trends and research gaps that will shape the future GHRM and environmental performance research?

2. Theoretical Background

Environmental performance refers to an organization's initiatives aimed at meeting and exceeding societal expectations for conserving the natural environment (Chan et al., 2012). This involves managing processes, products, and resources to meet environmental requirements while minimizing the ecological impact (Dubey and Gupta, 2018). Organizations are adopting a variety of sustainability initiatives to gain a competitive advantage (Yang and Yang, 2020), increase productivity (Dangelico and Pujari, 2010), and attract talent (Yusliza et al, 2017). Environmental performance encompasses the development of eco-friendly products, green process and product innovation, and the integration of ecological sustainability into business operations and product development (Oliva et al., 2019).

Studies on green human resource management and environmental performance utilize various theoretical frameworks, with the most common being the Ability–Motivation–Opportunity (AMO) theory, the Resource-Based View (RBV), the Theory of Planned Behaviour (TPB), and the Natural Resource-Based View (NRBV). In the context of GHRM, the RBV emphasizes the strategic role of human resources by developing green competencies and capabilities among employees that are valuable, rare, and non-substitutable. By leveraging unique green human resources, organizations can create a competitive advantage and achieve superior environmental performance (Yusliza et al., 2017; Singh et al., 2020; Rehman et al., 2023). The NRBV extends this perspective by emphasizing the strategic importance of natural resources and environmental capabilities. This involves developing and managing human resources in ways that enable the organization to reduce its ecological footprint and enhance its environmental performance, such as through green training, eco-friendly policies, and environmental programs (Graham et al., 2023; Cahyadi et al., 2022; Yang et al., 2023). The AMO theory explains how to enhance employees' abilities through training and development, motivate them with incentives and rewards, and provide opportunities for involvement and participation in green practices and environmental performance (Hooi et al., 2022; Akhtar et al., 2022; Aggarwal & Agarwala, 2023). Meanwhile, the TPB helps understand and predict employees' green behaviors by examining their attitudes, subjective norms, and perceived behavioral control. GHRM practices can shape positive attitudes towards sustainability, create a supportive social environment, and enhance employees' confidence in their ability to perform green tasks (Sawang et al., 2014; Yuriev et al., 2020; Patwary et al., 2023).

The role of human resource management is crucial in pursuing green initiatives and achieving environmental performance objectives. Green human resource management supports an organization's sustainability strategy by adapting HRM strategies and practices to achieve financial, social, and environmental objectives, thereby creating long-term positive impacts both internally and externally while mitigating unintended side effects and negative feedbacks (Renwick et al., 2013; Wikhamn, 2019).

Arulrajah and Opatha (2016) define GHRM as encompassing all activities related to designing, implementing, and managing systems aimed at "greening" employees. This transformation in employees' attitudes and behaviors is crucial for achieving the organization’s environmental goals, contributing to environmental sustainability, and creating benefits for individuals, society, the natural environment, and businesses (Opatha, 2013; Arulrajah et al., 2015). Kim et al. (2019) similarly emphasize the role of top managers in communicating the organization’s environmental policy and plan, training and empowering employees to engage in environmental activities, and providing specific rewards for their efforts.

To improve environmental performance, organizations are implementing a range of GHRM practices. These practices include programs, processes, and methods aimed at reducing negative environmental impacts or increasing positive ones (Arulrajah et al., 2015). Various classifications of green HR practices exist in academic literature. Many authors agree on the importance of employee recruitment, performance-based appraisal systems, training programs to raise environmental awareness, labor relations regulation, and reward systems to foster environmental innovation (Mandip, 2012; Renwick et al., 2013; Deshwal, 2015; Hosain et al., 2016). Additional practices identified include human resource planning (Mandip, 2012; Deshwal, 2015), online recruitment and application (Hosain et al., 2016), the selection process, orientation of new employees (Hosain et al., 2016; Deshwal, 2015), human resource administration, talent management, career planning (Deshwal, 2015), green employee discipline, health and safety, and leadership management (Hosain et al., 2016), green

organizational culture management (Ramasamy, 2017), and exit management (Mandip, 2012; Renwick et al., 2013).

3. Methodology

To answer the research questions, bibliometric research methods are used. These methods utilize quantitative techniques to map the structure and evolution of scientific fields and disciplines and offer a systematic, transparent, and reproducible review process without subjective bias (Zupic and Cater, 2015; Donthu *et al,* 2021).

While various databases contain scientific research, the Scopus database was chosen for this review due to its more comprehensive set of author and institution metrics compared to the Web of Science (Singh et al, 2021; Leder et al, 2023). Furthermore, Scopus is widely used for conducting bibliometric analysis in the field of management (Zupic and Cater, 2015; Donthu et al, 2021).

The records for this study's results were obtained in April 2024. To ensure comprehensive coverage of all publications related to GHRM and performance management, several search procedures were employed following the PRISMA 2020 Protocol.

The initial research sample was acquired using the following search query within the Scopus database (see Figure 1):

TITLE-ABS-KEY TITLE-ABS-KEY ("green human resource management" OR "GHRM" OR "green HRM" OR "Green Human Resource* Management" OR "Green HRM" OR "Green HR management" OR "green human resource" OR "green hr" OR "green human resource practices" OR "GHRMP" OR "green HR practices" OR "green HRM practices" OR "green human resource* management practice*" OR "Environmental human resource management" AND "environmental* performance*")

Figure 1: Search query

The initial search identified 227 documents from 2012 to 2024 (identification stage). The search was then refined to include only articles written in English, resulting in 205 articles from 2014 to 2024 (screening stage).

In the next step, titles, abstracts, and keywords of all 205 publications were thoroughly examined to ensure relevance to GHRM and performance management (eligibility stage). After removing irrelevant papers, less relevant studies, and duplicates, a final collection of 144 articles from 2014 to 2024 was obtained. Figure 2 graphically summarizes the research process.

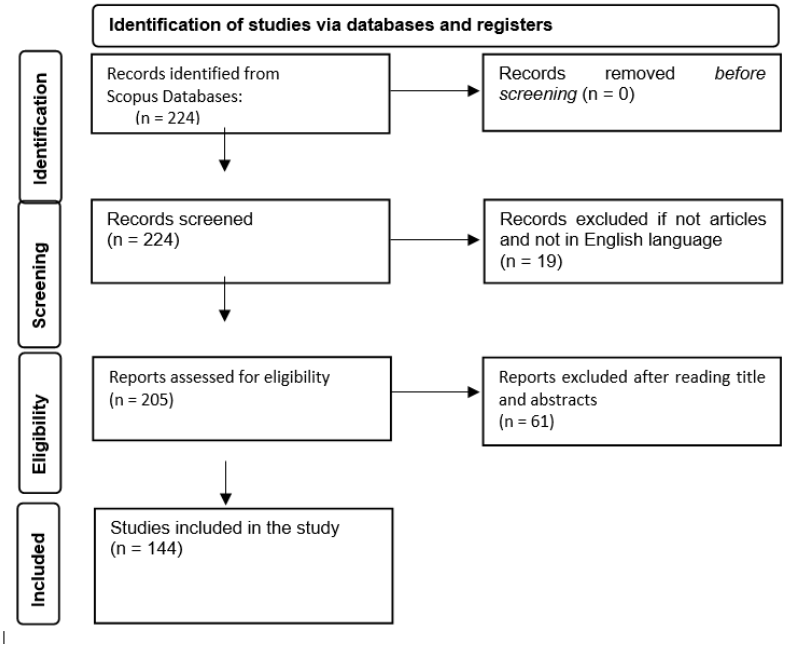

Figure 2: Research process workflow

The final step before data analysis involved cleaning and standardizing the keywords, ensuring that terms referring to the same topic were homogenized.

VOSviewer software was utilized for data analysis and visualization. Performance analysis and science mapping, including citation, co-citation, bibliographic coupling, and keyword co-occurrence analysis, were conducted (Van Eck and Waltman, 2010).

4. Results

4.1 Descriptive Bibliometric Analysis

The analysis revealed a significant increase in the number of publications in the field of GHRM and performance management. There is a slow increase between 2014 and 2019 (from 1 to 5 publications per year), but from 2020 onwards, the number of publications has risen sharply, with the highest number of publications in 2023 (49 published articles). The citation trend also illustrates the increasing popularity of the topic over a decade. Starting with 541 citations in 2014, the numbers saw a significant rise, particularly peaking at 2114 in 2020 and 1352 in 2021. It is observed that while the number of articles has been increasing, the number of citations has not kept pace in recent years. This discrepancy can be attributed to the citation time lag, as newly published articles often require time to be read and cited by other researchers.

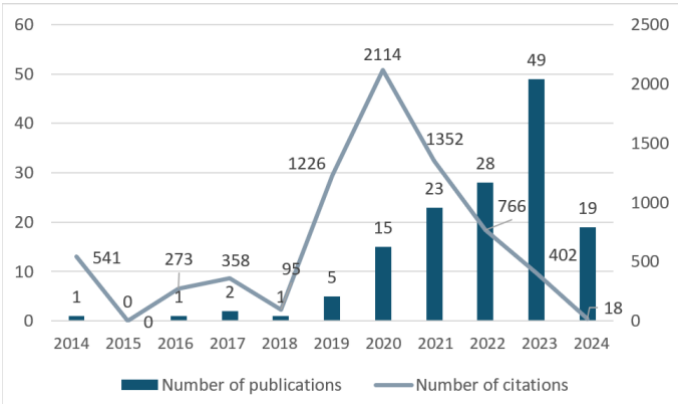

Figure 3: Publications and citations

The 144 articles in the final sample were published in 84 different scientific journals and eleven of them published at least three studies in the field of GHRM and performance management. *Sustainability (Switzerland)* (11 articles), *Journal of Cleaner Production* (9 articles), *Environmental Science And Pollution Research* (6 articles), are among the top three journals that have published the maximum number of articles.

In addition, the most cited article with 846 citations, Singh *et al,* (2020) is published in *Technological Forecasting and Social Change*, the second most cited article with 548 citations, Kim *et al,* (2019), is published in International Journal of Hospitality Management. *The overview of the six most active journals is stated in Table 1.*

Table 1: Most active journals

Journal	Publications	Citations
Sustainability (Switzerland)	11	264
Journal Of Cleaner Production	9	1188
Environmental Science And Pollution Research	6	147
Benchmarking	5	165
International Journal Of Hospitality Management	5	917
International Journal Of Manpower	5	273

Researchers from 46 countries are investigating the field of GHRM and performance management. The highest contributions come from 7 countries, each with more than 10 publications. The top five most productive countries are all from Asia: Pakistan (49 publications), China (34 publications), Malaysia (30 publications), Saudi

Arabia (14 publications), and India (12 publications). Following these are the Australia (11) and France (11) (figure 4).

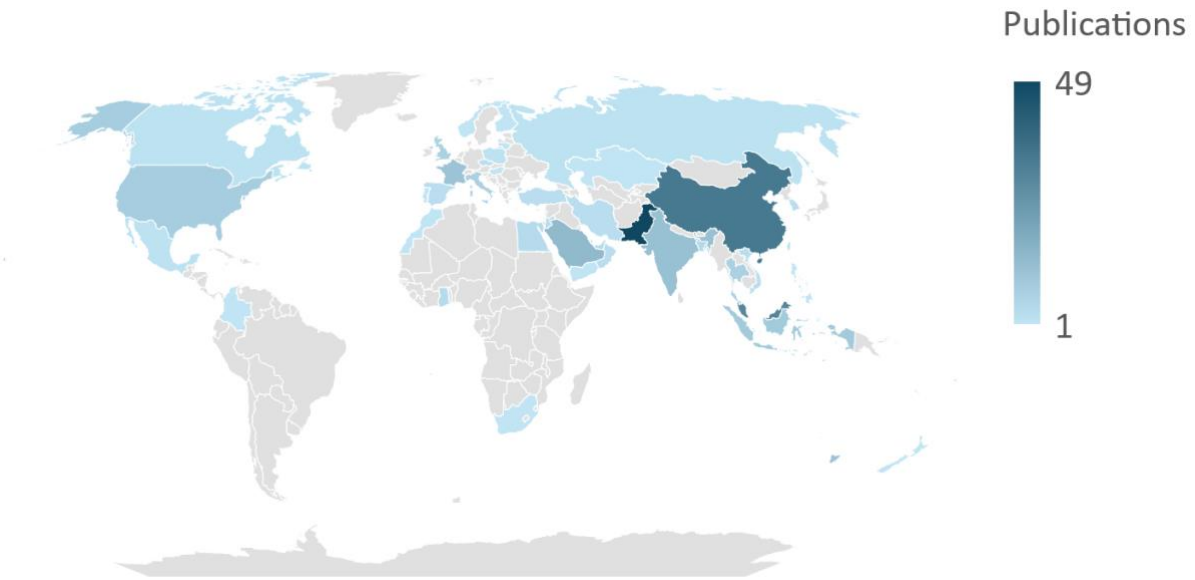

Figure 4: Authors' country of provenance

An analysis at the author level was performed, revealing that 229 out of 457 authors met the threshold after keeping the criteria as the minimum number of documents per author (n = 1) and number of citations per author (n = 10). Authors who have made major contributions to GHRM and environmental performance research: Q. A. Nisar (7 articles, 253 cit.), Ramayah (5 articles, 452 cit.), P. Paillé (3 articles, 634 cit.). TOP 7 most active and most cited researchers are shown in the Table 2.

Table 2: Most active and cited researchers

Author	Articles	Citations	H-index
Nisar, Qasim Ali	7	253	27
Ramayah, Thurasamy	5	452	119
Paillé, Pascal	3	634	42
Channa, Nisar Ahmed	3	288	12
Yusliza, Mohd Yusoff	3	275	40
Raza, Syed Ali	3	207	60
Haider, Shahbaz	3	178	7

4.1.1 Bibliometric Analysis

During the keyword co-occurrence network analysis, a minimum threshold of 4 occurrences per keyword was set. This analysis resulted in a network of 64 keywords that met the criteria. The most frequently occurring keywords were: environmental performance (114), green human resource management (96), green human resource management practices (29), human resource management (28), human resource (27), environmental management (22), green innovation (21), manufacturing sector (18), resource management (18), sustainability (15), corporate social responsibility (14), Pakistan (14), pro-environmental behavior (14), sustainable development (14), training (13), resource allocation (12), green supply chain management (11) (figure 5).

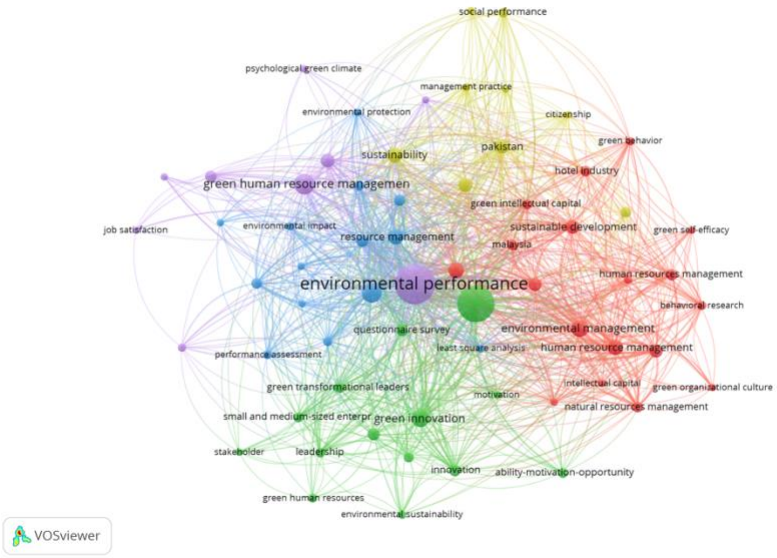

Figure 5: Keyword co-occurrence network analysis

Incorporating temporal analysis, the results revealed that the most recent research focuses on green transformational leadership, green behaviour, green innovation, environmental values, pro-environmental behaviour, green intellectual capital, environmental economics (figure 6).

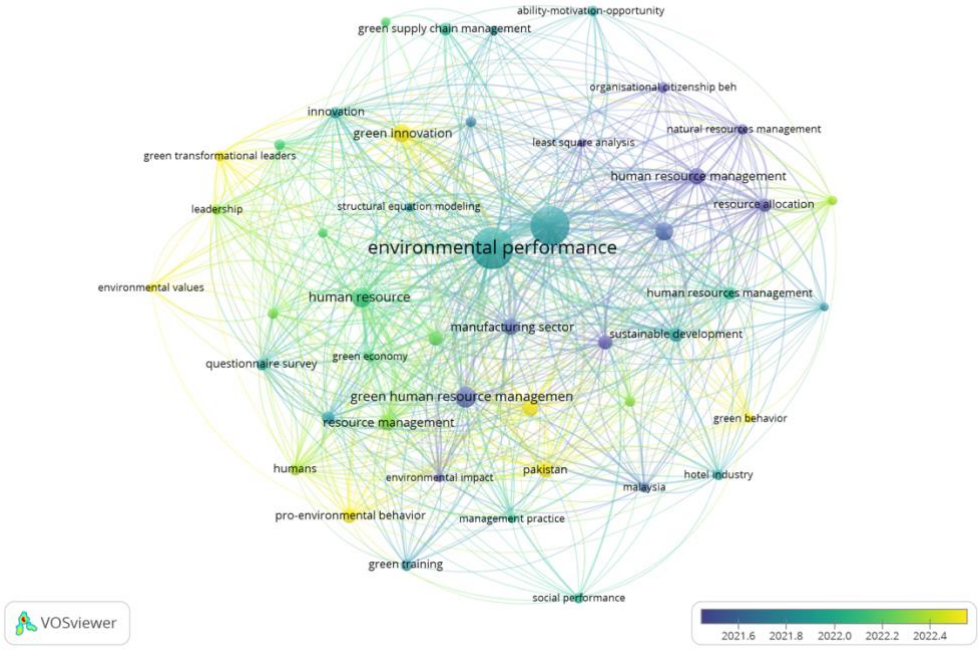

Figure 6: Keyword co-occurrence network with temporal analysis

As a result of the analysis, a 5-cluster structure of field research is determined in the figure 5 andthe table 3:

The first (red) cluster investigates the role of employee behavior in achieving environmental sustainability. By fostering a green organizational culture and enhancing green intellectual capital, organizations can create a supportive environment for green behavior (Nisar et al, 2021; Haldorai et al, 2022; Mahmood and Nasir, 2023; Sarwar and Mustafa, 2023; Yong et al, 2023). Key strategies include focusing on comprehensive training programs and boosting employees' green self-efficacy, which contribute to a proactive approach to environmental management (Ali et al, 2023; Muhammad and Nisar, 2023; Nisar et al, 2024).

The second (green) cluster explores the relationship between green human resource management (GHRM) and green innovation (Rehman et al,2021; Ullah et al, 2023), emphasizing the role of green transformational leadership (Singh et al, 2020; Awan et al, 2023) and stakeholder engagement in advancing green supply chain management and driving environmental sustainability within organizations (Acquah, 2020; Saeed et al, 2022).

The third (blue) cluster focuses on the link between human resources management and the green economy, emphasizing how HRM practices can contribute to environmental sustainability and economic growth (Paillé et al, 2020; Al Doghan et al, 2022). Through effective performance assessment and environmental protection strategies, organizations can enhance their green performance and contribute to sustainable development (Martins et al, 2021; Mansoor et al, 2022)

The fourth (yellow) cluster examines the synergy between organizational citizenship behavior and corporate social responsibility. By encouraging employees to engage in behaviors that benefit both the organization and society, companies can enhance their economic, social, and sustainable performance (Gaafar et al, 2021; Memon et al, 2022; Japir Bataineh et al, 2023).

The fifth (purple) cluster explores the impact of green human resources management practices, such as green recruitment and training, on environmental performance. By fostering a supportive psychological climate (Li et al, 2023) and implementing various GHRM practices, organizations can enhance environmental knowledge (Aftab and Veneziani, 2024; Rehan et al, 2024), encourage pro-environmental behavior, and boost job satisfaction among employees who share green values (Shafaei et al, 2020; Al-Sabi et al, 2024).

Table 3: Thematic clusters

Cluster	Title of Cluster	Main Keywords
Red Cluster	Environmental Management and Green Behavior	Environmental management, green behaviour, green self-efficacy, green intellectual capital, training, behavioral research, green organizational culture
Green Cluster	Green Human Resources Management and Green Innovation	Green human resource management, green innovation, green supply chain management, green transformational leadership, stakeholder, environmental sustainability, leadership, small and medium enterprises
Blue Cluster	Human Resources Management and Green Economy	Human resource management, green economy, environmental economics, environmental impact, environmental protection, green performance, performance assessment
Yellow Cluster	Organizational Citizenship Behavior and Corporate Social Responsibility	Corporate social responsibility, organizational citizenship behavior, economic performance, social performance, sustainable performance
Purple Cluster	Green Human Resources Management Practices and Environmental Performance	Green human resources management practices, environmental knowledge, environmental performance, environmental values, green recruitment, green training, job satisfaction, pro-environmental behavior, psychological green climate

5. Conclusions

This study of existing green human resource management and environmental performance literature revealed growing interest in the field over the past decade. The number of publications and citations has increased sharply, particularly since 2020, indicating a rising recognition of GHRM's importance in academia.

Sustainability (Switzerland), Journal of Cleaner Production, and *Environmental Science And Pollution Research* have emerged as leading journals for publishing GHRM and environmental performance studies.

5.1 Theoretical Implications and Future Research

Contributions from all continents highlight the global interest of the topic. However, research is predominantly concentrated in Asian countries like Pakistan, China, and Malaysia. This geographic imbalance and uneven representation highlight the need for more studies across other regions. Moreover, the food, hospitality, and manufacturing sectors currently dominate studies on green human resources and environmental performance. It is recommended that future research includes a broader range of sectors to extend the impact of green human resources to other industries.

Keyword co-occurrence and network analysis revealed five research clusters: green human resource management and pro-environmental behavior; environmental management and organizational sustainability; research directions and practices; green transformational leadership and green innovation; organisational citizenship behaviour and green economy. Keyword co-occurrence network with temporal analysis identified emerging research trends such as green transformational leadership, green innovation, green behaviour, environmental values, pro-environmental behaviour, green intellectual capital, environmental economics suggesting new directions for GHRM research (Rehan et al, 2024; Nisar et al, 2024, Al-Sabi et al, 2024). Scholars should investigate these areas further to understand their links to GHRM and environmental performance.

5.2 Research Limitations and Directions for Future Research

While the study provides valuable insights into green human resource management and environmental performance, several limitations must be acknowledged. Firstly, the study data was sourced from the Scopus database. Despite its extensive and recognized coverage, it may omit some important journals and publications, so future research should include other databases such as Web of Science, Google Scholar, or Dimensions. Secondly, the analysis was restricted to articles published in English, potentially excluding significant research published in other languages or in other types of documents. Lastly, although the study identified major clusters and research themes, it may not delve deeply into specific subfields within GHRM and environmental performance that are less frequently studied but equally important.

References

Acquah, I.S.K., Agyabeng-Mensah, Y. and Afum, E. (2020), "Examining the link among green human resource management practices, green supply chain management practices and performance", *Benchmarking: An International Journal*, Vol. 28 No. 1, pp. 267-290.

Aftab, J. and Veneziani, M. (2024), "How does green human resource management contribute to saving the environment? Evidence of emerging market manufacturing firms", *Business Strategy and the Environment*, Vol. 33 No. 2, pp. 529-545.

Aggarwal, P., & Agarwala, T. (2023), "Relationship of green human resource management with environmental performance: mediating effect of green organizational culture", Benchmarking: An International Journal, Vol. 30 No. 7, pp. 2351-2376.

Akhtar, S., Khan, K. U., Atlas, F., & Irfan, M. (2022), "Stimulating student's pro-environmental behavior in higher education institutions: An ability–motivation–opportunity perspective", Environment, Development and Sustainability, Vol. 24 No. 3, pp. 4128-4149.

Al Doghan, M.A., Abdelwahed, N.A.A., Soomro, B.A. and Ali Alayis, M.M.H. (2022), "Organizational environmental culture, environmental sustainability and performance: the mediating role of green HRM and green innovation", *Sustainability*, Vol. 14 No. 12, p. 7510.

Ali, Q.M., Nisar, Q.A., Abidin, R.Z.U., Qammar, R. and Abbass, K. (2023), "Greening the workforce in higher educational institutions: The pursuance of environmental performance", *Environmental Science and Pollution Research*, Vol. 30 No. 60, pp. 124474-124487.

Al-Sabi, S.M., Al-Ababneh, M.M., Al Qsssem, A.H., Afaneh, J.A.A. and Elshaer, I.A. (2024), "Green human resource management practices and environmental performance: the mediating role of job satisfaction and pro-environmental behavior", *Cogent Business & Management*, Vol. 11 No. 1, p. 2328316.

Ansari, N.Y., Farrukh, M. and Raza, A. (2021), "Green human resource management and employees pro-environmental behaviours: Examining the underlying mechanism", *Corporate Social Responsibility and Environmental Management*, Vol. 28 No. 1, pp. 229-238.

Arulrajah, A.A. and Opatha, H.H.D.N.P. (2016), "Analytical and theoretical perspectives on green human resource management: A simplified underpinning".

Arulrajah, A.A., Opatha, H.H.D.N.P. and Nawaratne, N.N.J. (2015), "Green human resource management practices: A review".

Awan, F.H., Dunnan, L., Jamil, K. and Gul, R.F. (2023), "Stimulating environmental performance via green human resource management, green transformational leadership, and green innovation: a mediation-moderation model", *Environmental Science and Pollution Research*, Vol. 30 No. 2, pp. 2958-2976.

Cahyadi, A., Natalisa, D., Poór, J., Perizade, B., & Szabó, K. (2022), "Predicting the relationship between green transformational leadership, green human resource management practices, and employees' green behavior", Administrative Sciences, Vol. 13 No. 1, pp. 5.

Chan, H.K., He, H. and Wang, W.Y. (2012), "Green marketing and its impact on supply chain management in industrial markets", *Industrial Marketing Management*, Vol. 41 No. 4, pp. 557-562.

Dangelico, R.M. and Pujari, D. (2010), "Mainstreaming green product innovation: why and how companies integrate environmental sustainability", *Journal of Business Ethics,* Vol. 95 No. 3, pp. 471-486.

Deshwal, P. (2015), "Green HRM: An organizational strategy of greening people", *International Journal of Applied Research*, Vol. 1 No. 13, pp. 176-181.

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N. and Lim, W.M. (2021), "How to conduct a bibliometric analysis: An overview and guidelines", *Journal of Business Research*, Vol. 133, pp. 285-296.

Dubey, S. and Gupta, B. (2018), "Linking green HRM practices with organizational practices for organizational and environmental sustainability", *International Journal of Engineering and Management Research (IJEMR),* Vol. 8 No. 2, pp. 149-153.

Gaafar, H., Elzek, Y. and Al-Romeedy, B. (2021), "The effect of green human resource management on green organizational behaviors: Evidence from Egyptian travel agencies", *African Journal of Hospitality, Tourism and Leisure*, Vol. 10 No. 4, pp. 1339-1356.

Graham, S., Cadden, T., & Treacy, R. (2023), "Examining the influence of employee engagement in supporting the implementation of green supply chain management practices: A green human resource management perspective", Business Strategy and the Environment, Vol. 32 No. 7, pp. 4750-4766.

Haldorai, K., Kim, W.G. and Garcia, R.F. (2022), "Top management green commitment and green intellectual capital as enablers of hotel environmental performance: The mediating role of green human resource management", *Tourism Management*, Vol. 88, p. 104431.

Hooi, L. W., Liu, M. S., & Lin, J. J. (2022), "Green human resource management and green organizational citizenship behavior: do green culture and green values matter?", International Journal of Manpower, Vol. 43 No. 3, pp. 763-785.

Hosain, S. and Rahman, M.D. (2016), "Green human resource management: A theoretical overview", *IOSR Journal of Business and Management*, Vol. 18.

Jabbour, C.J.C. and de Sousa Jabbour, A.B.L. (2016), "Green human resource management and green supply chain management: Linking two emerging agendas", *Journal of Cleaner Production*, Vol. 112, pp. 1824-1833.

Japir Bataineh, M.A., Ghasemi, M. and Ghadiri Nejad, M. (2023), "The Role of Green Training in the Ministry of Education's Corporate Environmental Performance: A Mediation Analysis of Organizational Citizenship Behavior towards the Environment and Moderation Role of Perceived Organizational Support", *Sustainability*, Vol. 15 No. 10, p. 8398.

Kim, Y.J., Kim, W.G., Choi, H.M. and Phetvaroon, K. (2019), "The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance", *International Journal of Hospitality Management,* Vol. 76, pp. 83-93.

Li, M., ul Abidin, R.Z., Qammar, R., Qadri, S.U., Khan, M.K., Ma, Z., ... and Mahmood, S. (2023), "Pro-environmental behavior, green HRM practices, and green psychological climate: examining the underlying mechanism in Pakistan", *Frontiers in Environmental Science*, Vol. 11, p. 1067531.

Mahmood, F. and Nasir, N. (2023), "Impact of green human resource management practices on sustainable performance: serial mediation of green intellectual capital and green behaviour", *Environmental Science and Pollution Research*, Vol. 30 No. 39, pp. 90875-90891.

Mandip, G. (2012), "Green HRM: People management commitment to environmental sustainability", *Research Journal of Recent Sciences,* ISSN, Vol. 2277, p. 2502.

Mansoor, A., Farrukh, M., Jahan, S., Lee, J.K. and Abd Wahab, S. (2022), "Promoting green performance through green human resource practices and green servant leadership", *Asia Pacific Journal of Human Resources*, Vol. 60 No. 4, pp. 900-918.

Marrucci, L., Daddi, T. and Iraldo, F. (2023), "Institutional and stakeholder pressures on organisational performance and green human resources management", *Corporate Social Responsibility and Environmental Management*, Vol. 30 No. 1, pp. 324-341.

Martins, J.M., Aftab, H., Mata, M.N., Majeed, M.U., Aslam, S., Correia, A.B. and Mata, P.N. (2021), "Assessing the impact of green hiring on sustainable performance: mediating role of green performance management and compensation", *International Journal of Environmental Research and Public Health*, Vol. 18 No. 11, p. 5654.

Memon, S.B., Rasli, A., Dahri, A.S. and Hermilinda Abas, I. (2022), "Importance of top management commitment to organizational citizenship behaviour towards the environment, green training and environmental performance in Pakistani industries", *Sustainability*, Vol. 14 No. 17, p. 11059.

Muhammad Ali, Q. and Nisar, Q.A. (2023), "Nexus between green human resource management and environmental performance: a green approach for higher education institutes", *Kybernetes*, Vol. 52 No. 11, pp. 5706-5729.

Nisar, Q.A., Haider, S., Ali, F., Gill, S.S. and Waqas, A. (2024), "The role of green HRM on environmental performance of hotels: Mediating effect of green self-efficacy & employee green behaviors", *Journal of Quality Assurance in Hospitality & Tourism*, Vol. 25 No. 1, pp. 85-118.

Nisar, Q.A., Haider, S., Ali, F., Jamshed, S., Ryu, K. and Gill, S.S. (2021), "Green human resource management practices and environmental performance in Malaysian green hotels: The role of green intellectual capital and pro-environmental behavior", *Journal of Cleaner Production*, Vol. 311, p. 127504.

Oliva, F.L., Semensato, B.I., Prioste, D.B., Winandy, E.J.L., Bution, J.L., Couto, M.H.G. and Massaini, S.A. (2018), "Innovation in the main Brazilian business sectors: characteristics, types and comparison of innovation", *Journal of Knowledge Management,* Vol. 23 No. 1, pp. 135-175.

Opatha, H.H.P. (2013), "Green human resource management: a simplified introduction".

Paillé, P., Valéau, P. and Renwick, D.W. (2020), "Leveraging green human resource practices to achieve environmental sustainability", *Journal of Cleaner Production*, Vol. 260, p. 121137.

Patwary, A. K., Mohd Yusof, M. F., Bah Simpong, D., Ab Ghaffar, S. F., & Rahman, M. K. (2023), "Examining proactive pro-environmental behaviour through green inclusive leadership and green human resource management: an empirical investigation among Malaysian hotel employees", Journal of Hospitality and Tourism Insights, Vol. 6 No. 5, pp. 2012-2029.

Ramasamy, A. (2017), "A study on implications of implementing green HRM in the corporate bodies with special reference to developing nations".

Rehan, M., Abbass, K., Hussain, Y., Usman, M. and Makhdum, M.S.A. (2024), "Green human resource management in Pakistan tourism industry: Moderating role of environmental knowledge and individual green values", *International Journal of Environmental Science and Technology*, Vol. 21 No. 3, pp. 2505-2516.

Rehman, S. U., Giordino, D., Zhang, Q., & Alam, G. M. (2023), "Twin transitions & industry 4.0: Unpacking the relationship between digital and green factors to determine green competitive advantage", Technology in Society, Vol. 73, 102227.

Rehman, S.U., Kraus, S., Shah, S.A., Khanin, D. and Mahto, R.V. (2021), "Analyzing the relationship between green innovation and environmental performance in large manufacturing firms", *Technological Forecasting and Social Change*, Vol. 163, p. 120481.

Renwick, D.W., Redman, T. and Maguire, S. (2013), "Green human resource management: A review and research agenda", *International Journal of Management Reviews*, Vol. 15 No. 1, pp. 1-14.

Roscoe, S., Subramanian, N., Jabbour, C.J. and 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*, Vol. 28 No. 5, pp. 737-749.

Saeed, A., Rasheed, F., Waseem, M. and Tabash, M.I. (2022), "Green human resource management and environmental performance: the role of green supply chain management practices", *Benchmarking: An International Journal*, Vol. 29 No. 9, pp. 2881-2899.

Sarwar, A. and Mustafa, A. (2023), "Analysing the impact of green intellectual capital on environmental performance: the mediating role of green training and development", *Technology Analysis & Strategic Management*, pp. 1-14.

Sawang, S., & Kivits, R. A. (2014), "Greener workplace: understanding senior management's adoption decisions through the Theory of Planned Behaviour", Australasian Journal of Environmental Management, Vol. 21 No. 1, pp. 22-36.

Shafaei, A., Nejati, M. and Yusoff, Y.M. (2020), "Green human resource management: A two-study investigation of antecedents and outcomes", *International Journal of Manpower*, Vol. 41 No. 7, pp. 1041-1060.

Singh, S.K., Del Giudice, M., Chierici, R. and Graziano, D. (2020), "Green innovation and environmental performance: The role of green transformational leadership and green human resource management", *Technological Forecasting and Social Change*, Vol. 150, p. 119762.

Singh, V.K., Singh, P., Karmakar, M., Leta, J. and Mayr, P. (2021), "The journal coverage of Web of Science, Scopus and Dimensions: A comparative analysis", *Scientometrics*, Vol. 126, pp. 5113-5142.

Tang, G., Chen, Y., Jiang, Y., Paillé, P. and Jia, J. (2018), "Green human resource management practices: scale development and validity", *Asia Pacific Journal of Human Resources*, Vol. 56 No. 1, pp. 31-55.

Ullah, S., Mehmood, T. and Ahmad, T. (2023), "Green intellectual capital and green HRM enabling organizations go green: mediating role of green innovation", *International Journal of Innovation Science*, Vol. 15 No. 2, pp. 245-259.

Van Eck, N.J. and Waltman, L. (2010), "Software survey: VOSviewer, a computer program for bibliometric mapping", *Scientometrics*, Vol. 84 No. 2, pp. 523-538.

Wikhamn, W. (2019), "Innovation, sustainable HRM and customer satisfaction", *International Journal of Hospitality Management*, Vol. 76, pp. 102-110.

Yang, C. and Yang, F. (2020), "Guanxi HRM practices and employee creative performance", *Personnel Review,* Vol. 49 No. 8, pp. 1713-1729.

Yang, J., Malik, S. Y., Mughal, Y. H., Azam, T., Khan, W., Chuadhry, M. A., ... & Cao, Y. (2023), "Assessing the Impact of Corporate Social Responsibility, Green Shared Vision on Voluntary Green Work Behavior: Mediating Role of Green Human Resource Management", Sustainability, Vol. 15 No. 23, 16398.

Yong, J.Y., Yusliza, M.Y., Ramayah, T., Farooq, K. and Tanveer, M.I. (2023), "Accentuating the interconnection between green intellectual capital, green human resource management and sustainability", *Benchmarking: An International Journal*, Vol. 30 No. 8, pp. 2783-2808.

Yuriev, A., Boiral, O., & Guillaumie, L. (2020), "Evaluating determinants of employees' pro-environmental behavioral intentions", International Journal of Manpower, Vol. 41 No. 7, pp. 1005-1019.

Yusliza, M.Y., Norazmi, N.A., Jabbour, C.J.C., Fernando, Y., Fawehinmi, O. and Seles, B.M.R.P. (2019), "Top management commitment, corporate social responsibility and green human resource management: A Malaysian study", *Benchmarking: An International Journal*, Vol. 26 No. 6, pp. 2051-2078.

Yusliza, M.Y., Othman, N.Z. and Jabbour, C.J.C. (2017), "Deciphering the implementation of green human resource management in an emerging economy", *Journal of Management Development*, Vol. 36 No. 10, pp. 1230-1246.

Zupic, I. and Cater, T. (2015), "Bibliometric methods in management and organization", *Organizational Research Methods*, Vol. 18 No. 3, pp. 429-472.