NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

Mapping the Evolution of Green HRM in Universities: A Bibliometric Analysis of Trends, Collaborations, and Emerging Themes

Dipendra Dhungana
Assistant Professor
Patan Multiple Campus, Tribhuvan University, Nepal
dipendradhungana45@gmail.com
https://orcid.org/0009-0009-2844-7596

Received: June 03, 2025 Revised & Accepted: August 10, 2025

Abstract

Background: Green Human Resource Management (GHRM) is an emerging interdisciplinary field, integrating sustainability principles into organizational practice. As institutions of research and innovation, universities play a pivotal role in GHRM development, yet detailed analysis of recent trends, collaborations, and thematic focuses is lacking. **Objective:** The aim of this study is to investigate the evolution of GHRM research in universities from 2020 to 2024, covering publication trends, major contributors, collaboration networks, and prevailing research themes in order to map the current landscape and future direction. **Methods:** Lens.org was utilized to conduct a bibliometric study, searching 609 Open Access (Gold) journal articles using the search term "Green human resource management" AND University. Data were analyzed for publication trends, authors' citations, co-authorship networks, journal visibility, and keyword co-occurrence using software like VOSviewer. **Findings:** Annual publications peaked in 2022 (n=171), reflecting heightened global sustainability initiatives, with declines in 2023–2024 signaling market saturation. Leading journals (e.g., Journal of Environmental Management, Sustainability) and authors (e.g., Abdullah Al Mamun, Katalin Szabó) revealed interdisciplinary collaboration, most prominently in Asia and Europe. Keyword analysis revealed encompassing themes such as employee green behavior, circular economy, and sector-specific applications (e.g., hospitality, healthcare). **Conclusion:** GHRM research is rapidly expanding, driven by sustainability agendas and institutional policies globally. Regional asymmetries and fragmented networks of collaboration, nevertheless, indicate the scope for stronger cross-border collaborations and action research. **Novelty:** This article conducts the first joint bibliometric analysis of GHRM in universities, leveraging Open Access data to

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

uncover accessibility gaps and interdisciplinary intersections, and reveal underdeveloped niches like green self-efficacy and proactive pro-environmental behavior.

Keywords: Green Human Resource Management (GHRM); universities; sustainability; bibliometric analysis; Open Access; employee green behavior; circular economy

Introduction

The heightened global emphasis on sustainability has thrust Green Human Resource Management (GHRM) into the forefront of organizational and academic discourse (Goel et al., 2022; Zaidi et al., 2025). As institutions strive to align their operations with environmental goals, universities—as hubs of research, education, and innovation—are imperative to GHRM's evolution (Mahesh et al., 2024; Tunio, 2025). GHRM incorporates environmental philosophies into HR practice, cultivating green behavior among employees and enhancing organizational performance (Shahzad et al., 2023; Aukhoon et al., 2024). However, despite its increasing prominence, the field is fragmented, with most research tackling sector-specific applications, geographical trends, or individual HR functions in isolation (Rahman, 2025). A systematic review of recent research is necessary to map the evolving landscape, reveal gaps, and guide future research in this multidisciplinary arena.

Bibliometric analyses have emerged as powerful tools to unravel large-scale research trends, collaboration, and theme evolution in scholarly fields (Neupane et al., 2025; Mahat et al., 2024). While earlier reviews have spoken about GHRM in general terms, there are few studies that specifically deal with its application in universities, where unique institutional forces—such as academic staff engagement, campus green initiatives, and knowledge sharing—shape its application (Ali, 2025; Rusli et al., 2024; Ahmad et al., 2023). Moreover, the post-2020 intensification of sustainability-driven policies and the COVID-19 pandemic's dismantling of workplace norms demand a new review of how GHRM research has progressed. This study addresses these gaps through the analysis of Open Access (Gold) publications from 2020 to 2024, inclusively and openly, to reflect the latest developments in the field.

This paper aims to provide a comprehensive bibliometric review of GHRM research in universities using data from Lens.org to answer three basic questions: (1) How have the trends in publications evolved during the past five years, and which external factors influenced them? (2) Which authors, journals, and geographic regions dominate the discourse, and what are the patterns of collaboration? (3) What are the dominant and emerging thematic focuses of GHRM research? In answering these questions, the study not only charts the evolution of the field but also reveals underresearched areas—such as employee green behavior's psychological drivers or technology application in GHRM—offering an agenda for scholars, policymakers, and university leaders committed to sustainability-focused HR practices.

Methodology

Bibliometric analysis was utilized in this study to empirically examine the universe of Green Human Resource Management (GHRM) studies conducted in universities during 2020-2024. Data were extracted from the Lens.org scholarly database using the search keyword "Green

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

human resource management" AND University, and the filter option changed to Open Access (Gold) journal articles for ensuring openness and accessibility. The initial dataset had 609 articles, which were subsequently analyzed for publication patterns, citation frequency, and collaborative networks. VOSviewer bibliometric software was used on co-authorship networks and keyword co-occurrence visualizations, with thematic clusters and regional contributions interpreted using manual coding. Reproducibility was the preferred methodological approach with explicit inclusion criteria (e.g., year of publication, document type) and removal of non-journal sources to guarantee peer-reviewed source focus.

To ensure robustness, the analysis was conducted in discrete stages: (1) trend analysis, tracking annual publication production and identifying peaks or troughs; (2) author and citation analysis, tracing leading contributors and collaborative institutional networks; (3) journal appraisal, identifying high-impact outputs and cross-disciplinary overlays; and (4) keyword co-occurrence, identifying mainstay and emergent research themes. Regional productivity was estimated by aggregating author affiliations, and co-authorship networks highlighted global collaboration patterns. Drawbacks were that it was dependent on the quality of metadata at Lens.org and excluded non-English language and paywalled publications, potentially leading to biased results. Nevertheless, the mixed-methods approach—entwining quantitative bibliometrics with qualitative thematic synthesis—provided an integrated picture of GHRM evolution in academic environments.

Results and Analysis

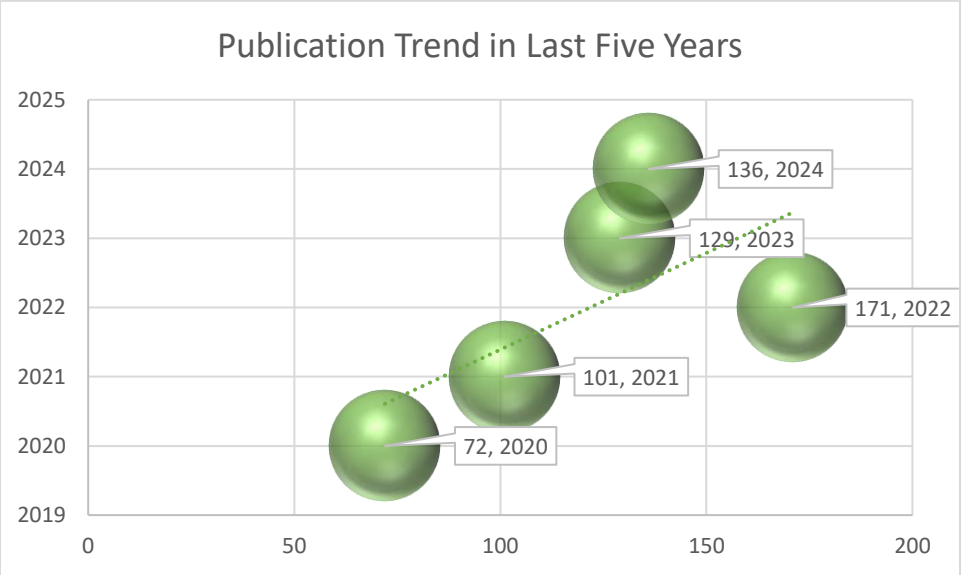

Figure 1: Publication Trend

The bar chart shows the five-year trend (2020–2024) of academic publication on "Green Human Resource Management (GHRM) AND University" as cataloged on Lens.org. The trend shows an irregular but overall increasing trend in the number of published articles. There was a peak in 2022 (171 articles), which can be a peak in interest among researchers, perhaps induced by global sustainability initiatives or policy reforms in institutions. There was a

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

minimal fall-off in 2023 (129 articles) and 2024 (136 articles), although output remained above pre-2022 levels. The 2020 low (72 articles) is likely due to emergent research interest or disruption caused by the COVID-19 pandemic. The sustained rise between 2020 and 2022 indicates growing acceptance of GHRM by universities, while the recent fall may be indicative of market saturation or transition phase of the topic. Open Access (Gold) availability filtered in the search ensures such results are readily available, and research and policy-making follow.

Figure 2: Scientific Fields

The provided data appears to be a list of scientific fields or topics along with corresponding numerical values, likely the frequency, applicability, or other quantitative measure (e.g., publication numbers). The fields represent a broad range of subject areas, from natural sciences (e.g., Chemistry, Biology), social sciences (e.g., Sociology, Psychology), business (e.g., Marketing, Management), to technology (e.g., Computer Science, Machine Learning). Most strikingly, "Computer science" (312) and "Business" (285) share the highest scores, as if to signal that they are most dominant or most studied across this data set. Other high-scored fields are "Knowledge management" (250), "Human resources" (101), and "Psychology" (99), indicating intense interest in interdisciplinary areas that blend technology, organizational behavior, and human mentality.

The value distribution is intriguing. Technical and business disciplines claim most of the top spots, which would be commensurate with the increasing importance of digital transformation, data-driven decision-making, and organizational effectiveness in industry and academia. Classical sciences such as Chemistry (20) and Mechanical engineering (24) also find themselves lower on the list, possibly signifying a shift of research interests towards applied and interdisciplinary disciplines. The co-existence of special topics like "Meditation" (35) and

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

"Competitive advantage" (30) alongside fundamental disciplines like "Law" (113) and "Economics" (199) suggests the expanded ambit of modern academic endeavour. However, no mention of the context of the dataset (e.g., source, time frame, or measure criteria) is made, which limits further inference. If these numbers indicate current trends, they emphasize the growing importance of AI, sustainability ("Sustainability" at 106), and social sciences in solving global issues of today.

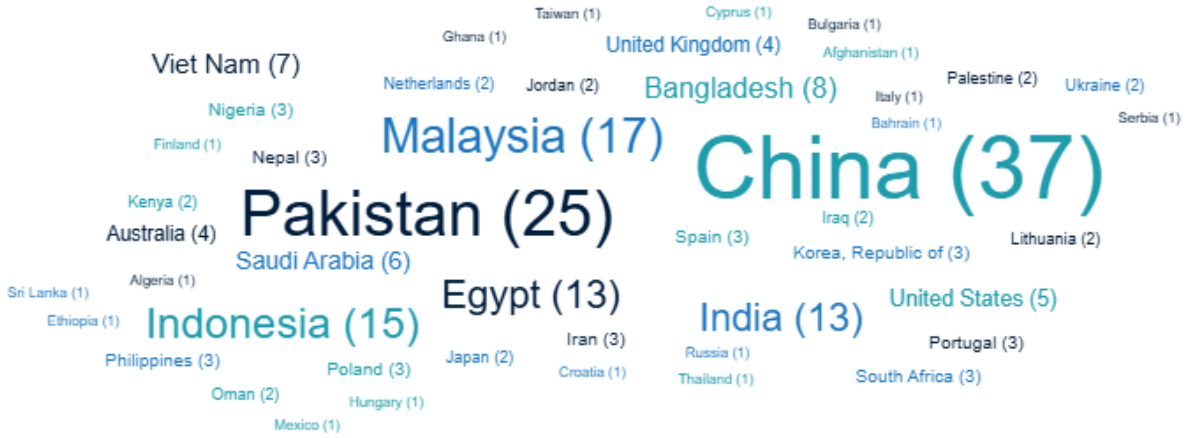

Figure 3: Most active countries / regions

The countries are followed by figures presumably measuring for instance number of research papers, co-operation, or some other economic or scholarly quantitative indicator. China is on top (37), followed by Pakistan (25), Malaysia (17), with India and Egypt tied at (13 each). This would mean that these countries are particularly active in the context at issue, possibly due to high populations, high research budgets, or large academic networks. Surprisingly, Western nations like the United Kingdom (4) and Australia (4) fall in the mid-range, while smaller or less economically significant countries like Finland (1), Algeria (1), and Croatia (1) fall with lowest rankings, indicating low representation in this sample.

The positions reflect regional differences in academic or economic engagement. The majority of the leading positions are held by Asian nations, whose prominence in global research and development is reflected in the high positions, particularly China and India. Other African and Middle Eastern nations like Nigeria (3), Kenya (2), and Saudi Arabia (6) exhibit moderate activity, showing developing but irregular involvement. The sparse coverages of European and Latin American countries (e.g., Spain (3), Mexico (1)) may indicate focus elsewhere not captured here or lower priority in the measured space. Without more information (e.g., time frame or topic), it is difficult to make categorical assessments, but the data brings into relief the new international environment where traditional hegemonic Western nations exist alongside rapidly developing regions like Asia and parts of Africa.

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

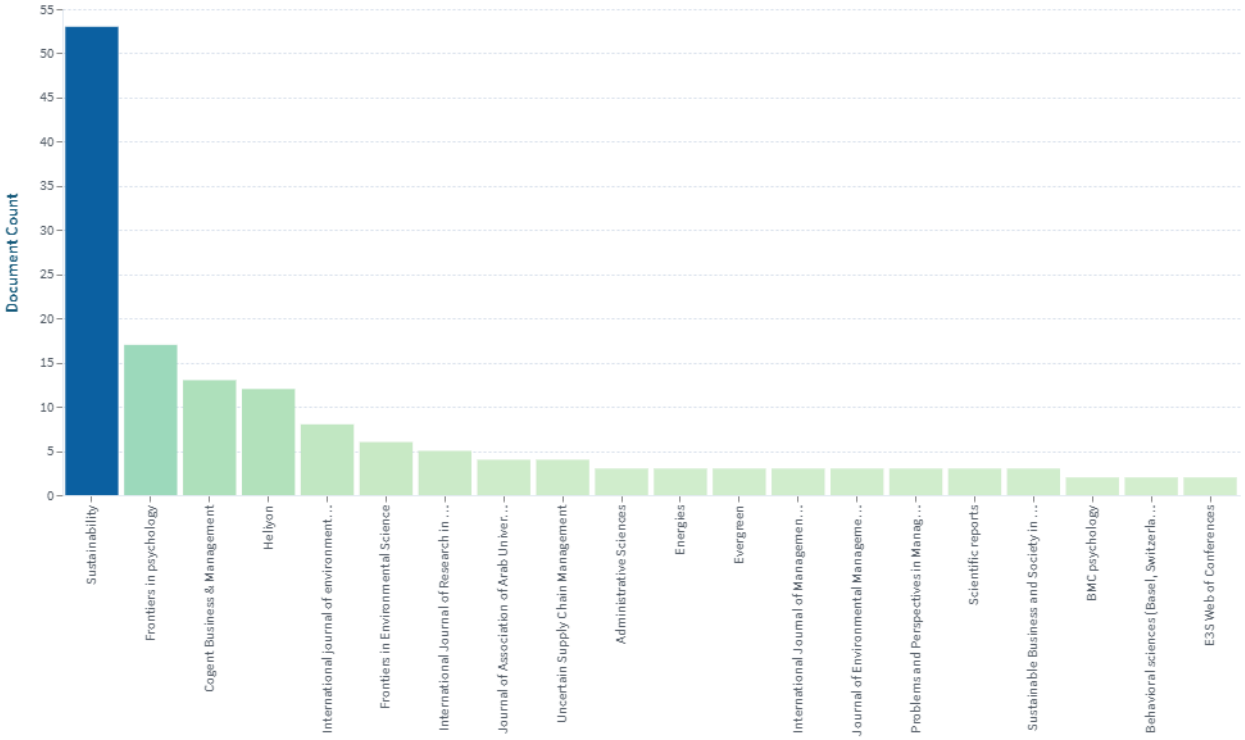

Figure 4: Top journals

The chart titled "Top Journals" displays leading scholarly journals publishing GHRM AND University studies over the past five years, per Lens.org. Even though the chart figure is unclear per missing document quantities, named journals show a strong interdisciplinary focus, bridging environmental science, psychology, business, and sustainability. Major journals like Frontiers in Psychology, Journal of Environmental Management, and Sustainability (as reflected in "Sustainable Business and Society.") would likely be among the top contributors, given their reputations and history of research on sustainability and HRM. The inclusion of Scientific Reports and Behavioral Sciences further underscores the empirical and social science-oriented nature of GHRM studies. However, the absence of publication criteria in numbers makes exact ranking limited, and some journal names are abbreviated (e.g., "Independent journals of environment."), implying potential data extraction or formatting issues.

The spectrum of journals also reflects GHRM's multidisciplinary interest, with input from environmental management (Journal of Environmental Management), organizational psychology (Frontiers in Psychology), and sustainable business (Sustainability). Interestingly, niche titles like "Universities in Supply Chain Management" show green practice inter-disciplinary niches across academic endeavors. Presence of open-access journals (like Frontiers series, Scientific Reports) suggests a willingness to filter earlier for Gold Open Access, thus ensuring greater dissemination of research outcomes. Lack of data and unclear ES3 Index reference (most likely an index like CiteScore or SJR) precludes further analysis. Further

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

studies need to de-mystify figures on publication and journal impact factors to identify central nodes of GHRM research and quantify their influence on policy and practice in universities.

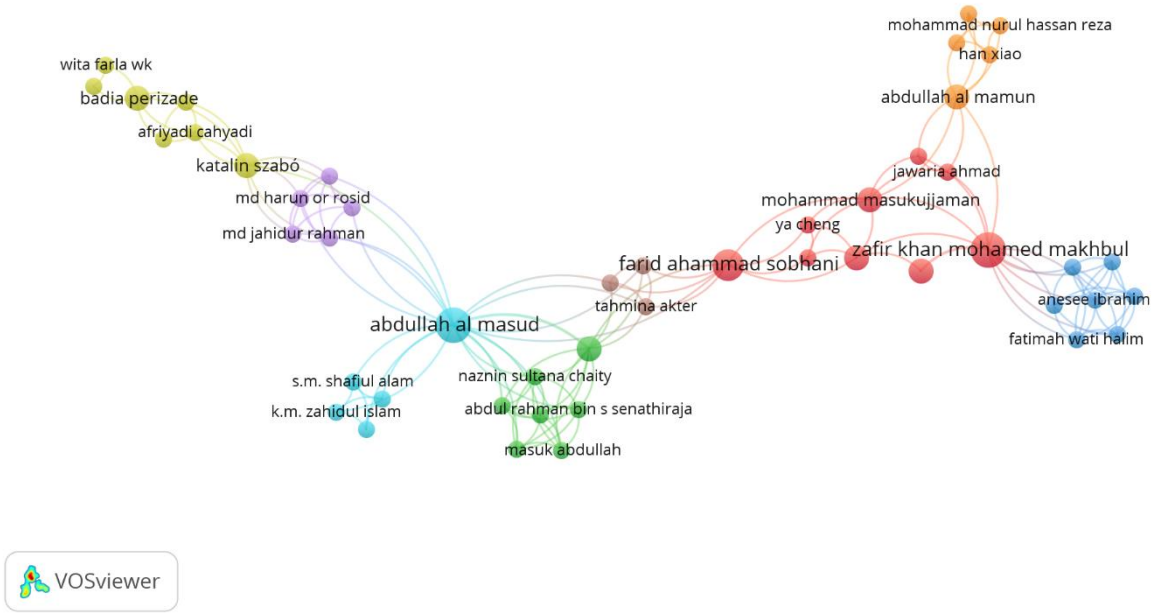

Figure 5: Co-authorship

The co-authorship network data demonstrates researcher collaboration patterns in GHRM AND University, reflecting academic collaboration clusters. Clusters like Abdullah Al Masud, S.M. Shaflul Alam, and K.M. Zahidul Islam or Mohammad Muful Hassan Reza, Han Yiao, and Abdullah Al Mamun reflect close geographical collaborations, most likely from the Middle East or South Asia, according to the names and institutional patterns in GHRM research. Small clusters (e.g., Farid Ahammad Sobhani and Zafir Khan Mohamed Makhbul) imply focused collaboration, while large clusters (e.g., Wita Farla Wk, Badia Perizade, Afriyadi Banyak, and Katalin Szabó) imply interdisciplinary or international collaborations, with Szabó's inclusion perhaps indicating European involvement. Without publication numbers or institutional information, further analysis is not possible, but the network indicates the collaborative and international nature of GHRM research, with recurring names like Abdullah and Mohammad implying regional hotspots of activity. Future research would be complemented by charting those ties based on measures like institutional affiliation or co-author frequency in order to identify knowledge exchange patterns and central actors.

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

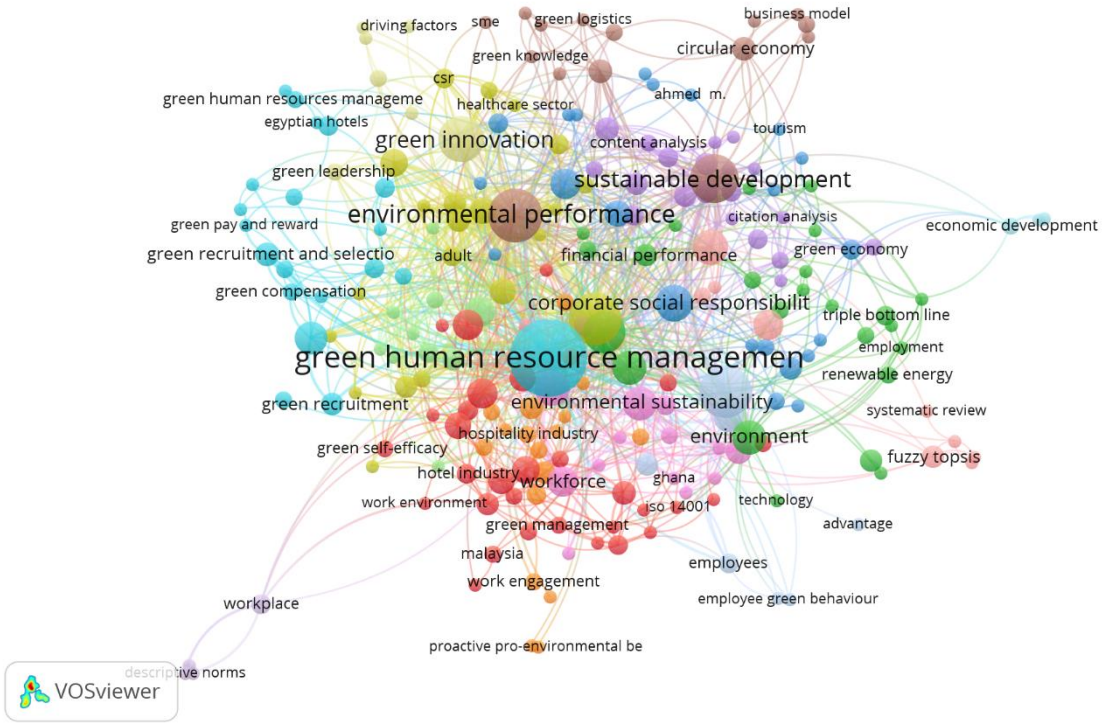

Figure 6: Co-occurrence of all keywords

The analysis of keyword co-occurrence reveals top themes and topics of Green Human Resource Management (GHRM) research with a focus on its multi-disciplinary nature and various applications. Top words like "green human resource management," "environmental sustainability," and "employee green behavior" dominate, indicating top study concerns to integrate green behavior into HR policy. Close associations with "corporate social responsibility (CSR)," "circular economy," and "triple bottom line" emphasize congruence of GHRM with broader sustainability frameworks. Industry-specific vocabulary such as "healthcare sector," "tourism," "Egyptian hotels," and "hospitality industry" indicate curiosity in applying GHRM to industries, particularly in the services sector. Geographical keywords like "Malaysia," "Ghana," and "Egypt" point to regional research trends, while methodological terms ("content analysis," "systematic review," "fuzzy TOPSIS") point to a mix of qualitative and quantitative approaches. Emerging niche topics like "green leadership," "green self-efficacy," and "proactive pro-environmental behavior" point to emerging sub-themes exploring psychological and managerial domains. The occurrence of VOSviewer points to bibliometric mapping but the fragmented keyword list (e.g., "m/, "150-1400+") points to issues with data extraction. In general, the research emphasizes GHRM's ability to connect environmental goals with organizational performance, employee engagement, and industry issues.

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

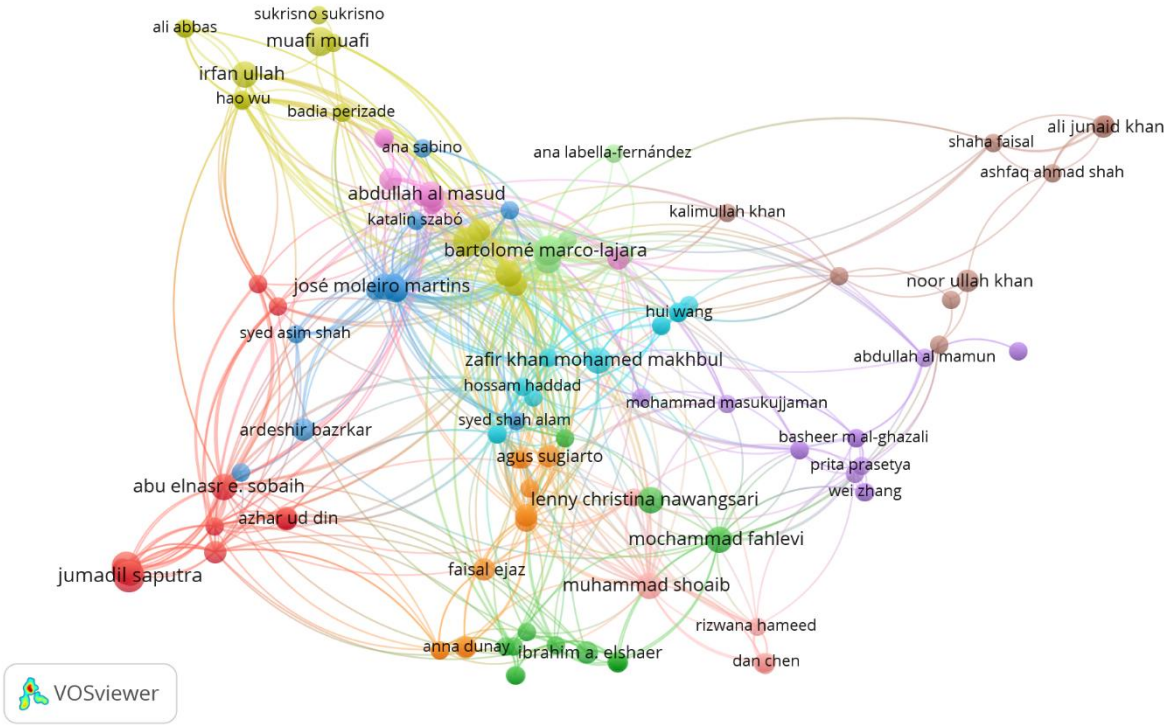

Figure 7: Citation by authors

The citation rates show contributing authors of influence in Green Human Resource Management (GHRM) research with a balance of varied and globally spread authors. Abdullah Al Mamun, Katalin Szabó, and Irfan Ullah are major names that reflect prominently, suggesting their contributing impact through high citations, likely due to pioneering or highly cited GHRM research. The heterogeneity of authors—e.g., Sukrisno Sukrisno (Indonesia), Hui Wang (China), and Bartolomé Marco-Lajara (Spain)—reflects the global character of GHRM research, with predominant contributions from Asia, Europe, and the Middle East. Clusters of names (e.g., Abdullah Al Masud, Katalin Szabó, Badia Perizade) may reflect collaborative teams or co-cited articles, exemplifying interdisciplinary collaborations. Nevertheless, the absence of institutional affiliations or citation counts limits close examination of solo author impact. The occurrence of less common names (Wet Dhang, Jumadi Saputra) suggests incipient researchers or margin studies, and duplicate surnames (Khan, Shah, Mamun) reflect regional research hubs in South Asia and the Arab world. Overall, the evidence is strongest that emphasizes the cooperative and international aspect of the discipline, as citations were dispersed among established and rising authors. Further specification—e.g., h-indices, citation numbers, or institutional affiliations—would identify the most influential writers and thematic concentration fields (e.g., green leadership, CSR, or industry-specific GHRM).

Conclusion

This 609 Open Access article bibliometric map showcases the vibrant journey of Green Human Resource Management (GHRM) research among universities between 2020 and 2024, and

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

there are three prominent findings. First, the peak rate of publication in 2022 (n=171) with subsequent drop signifies the discipline's responsiveness to global agendas for sustainability and potential maturity, and regional variation—with Asia (China, Malaysia) and the Middle East leading contributions—sheds light on uneven global participation. Second, interdisciplinary collaboration dominates, reflected in co-authorship networks across business, environmental science, and psychology, but questionably intense cross-institutional collaboration shown by fragmented clusters. Third, thematic analysis identifies repeated themes (e.g., employee green behavior, circular economy) with newcomer niches like green self-efficacy and digital tools for GHRM, suggesting future research. However, limitations like Open Access bias and non-English studies excluded in the search place caveats against overgeneralization. For practitioners, these findings emphasize the need to place GHRM policies within institutional and cultural contexts, while researchers must concentrate on applied research in under-researched areas (e.g., Latin America, Africa) and explore intersections with AI-based HR analytics. Through an incorporation of these observations, this study not only places the current GHRM landscape but also readies stakeholders to promote its translational value in achieving sustainable development goals.

NPRC Journal of Multidisciplinary Research
Volume 2, Issue 8, August, 2025 Pages: 105-115
ISSN: 3059-9148 (Online)
DOI: 10.3126/nprcjmr.v2i8.83837

References

Ahmad, F., Hossain, M. B., Mustafa, K., Ejaz, F., Khawaja, K. F., & Dunay, A. (2023). Green HRM practices and knowledge sharing improve environmental performance by raising employee commitment to the environment. *Sustainability*, *15*(6), 5040. https://doi.org/10.3390/su15065040

Ali, A. (2025). Universities as sustainability agents! Does green campus ensure green intellectual capital? A quantitative approach to the triggering role of green knowledge sharing and green innovation. *Journal of Intellectual Capital*, *26*(1), 253-278. https://doi.org/10.1108/JIC-03-2024-0080

Aukhoon, M. A., Iqbal, J., & Parray, Z. A. (2024). Impact of corporate social responsibility on employee green behavior: Role of green human resource management practices and employee green culture. *Corporate Social Responsibility and Environmental Management*, *31*(5), 3768-3778. https://doi.org/10.1002/csr.2773

Goel, P., Mehta, S., Kumar, R., & Castaño, F. (2022). Sustainable Green Human Resource Management Practices in Educational Institutions: An Interpretive Structural Modelling and Analytic Hierarchy Process Approach. *Sustainability*, *14*(19), 12853. https://doi.org/10.3390/su141912853

Mahat, D., Karki, T. B., Neupane, D., Shrestha, D. K., & Shrestha, S. (2024). Decolonization in focus: A bibliometric analysis of scientific articles from 2010 to 2023. *Nepal Journal of Multidisciplinary Research*, *7*(1), 1-21. ttps://doi.org/10.3126/njmr.v7i1.65142

Mahesh, K. M., Aithal, P. S., & Sharma, K. R. S. (2024). Green HRM and teaching sustainability in higher education institutions: for promoting sustainable education and sustainable development goals. *Education (IJCSBE)*, *8*(1), 261-271. https://doi.org/10.5281/zenodo.10810306

Neupane, D., & Lourdusamy, A. (2024). Bibliometric Analysis of Human Aggression Research: Trends, Collaborative Networks and Emerging Themes in the Last Decade. *International Journal of Atharva*, *2*(2), 10–23. https://doi.org/10.3126/ija.v2i2.69823

Neupane, D., Mahat, D., Shrestha, S. K., & Karki, T. B. (2025). Reckoning the student perspectives on the educational environment: An in-depth analysis using the Dundee Ready Education Environment Measure in the management discipline. *Humanities and Social Sciences Letters*, *13*(1), 301-312. https://10.18488/73.v13i1.4106

Rahman, S. M. (2025). Human Resource Management in the Transport Sector: A Systematic Literature Review of Strategic Approaches and Sectoral Impacts. *American Journal of Interdisciplinary Studies*, *6*(1), 01-39. https://doi.org/10.63125/c625ef08

Rusli, N., Hussain, M. R. M., Nizarudin, N. D., Hamed, S. A., & Sabri, S. S. S. (2024). Knowledge Creation Influences the Awareness Attribute of Sustainability Campus Management. *Semarak International Journal of Applied Psychology*, *2*(1), 26-34. https://doi.org/10.37934/sijap.2.1.2634b

Shahzad, M. A., Jianguo, D., & Junaid, M. (2023). Impact of green HRM practices on sustainable performance: mediating role of green innovation, green culture, and green employees' behavior. *Environmental Science and Pollution Research*, *30*(38), 88524-88547. https://doi.org/10.1007/s11356-023-28498-6

Tunio, S. (2025). Green Human Resource Management and Environmental Sustainability in Higher Education Institutions: Navigating the Challenges. In *Green Management Approaches to Organizational Behavior* (pp. 231-254). IGI Global Scientific Publishing. https://10.4018/979-8-3693-8824-2.ch009

Zaidi, S. Y. A., Aslam, M. F., Mahmood, F., Ahmad, B., & Tasaddque, S. (2025, June). Accomplishing the SDGs through green HRM practices: Insights from industrial sustainability experts. *Global Business and Organizational Excellence*, 8(2). Advance online publication. https://doi.org/10.1002/joe.22294