



CONCEPTUAL FRAGMENTATION IN GREEN HUMAN RESOURCE MANAGEMENT: A
BIBLIOMETRIC ANALYSIS OF ITS PATH TOWARD THEORETICAL INTEGRATION

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DOI: <https://doi.org/10.63544/jbii.v5i9.190>

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Article History:

Received: 18.07.2026

Accepted: 22.08.2026

Published: 02.09.2026

Abstract

Purpose: This study aims to systematically map the intellectual, thematic, and temporal development of Green Human Resource Management (GHRM) research and examine its conceptual maturity within the broader HRM domain.

Design/Methodology/Approach. A bibliometric analysis was conducted on 1,426 publications indexed in Scopus from 2011 to 2025. Using VOSviewer, the study applies keyword co-occurrence and bibliographic coupling techniques to identify major research clusters, thematic evolution, and intellectual structures within the GHRM literature.

Findings. The development of GHRM scholarship shows a transition from system-level integration toward behavioural and psychological mechanisms, which indicates theoretical consolidation despite persistent fragmentation. Four distinct research clusters were identified: (1) foundational GHRM and sustainability HRM integration, (2) leadership, culture, and employee pro-environmental behaviour, (3) behavioural mechanisms and psychological drivers of green actions, and (4) reviews, models, and measurement development. Temporal analysis reveals a shift from structural HR systems to micro-level behavioural and psychological processes.

Research Limitations. This review is limited to Scopus-indexed sources, which may exclude relevant publications from other databases. Future studies should incorporate broader datasets and diverse methodological approaches.

Practical Implications. This study provides a theory-based diagnosis of fragmentation, offering guidance for developing coherent GHRM constructs into a unified theoretical foundation to support more effective sustainability-oriented HR practices.

Originality/Value. This study extends existing literature by integrating bibliometric analysis with construct development theory to assess the maturity of GHRM, providing a structured and theory-driven perspective on its evolution and future research directions.

Keywords: Green Human Resource Management (GHRM), Conceptual Fragmentation, Theoretical Integration, Bibliometric Analysis, Construct Development Theory.

1. Introduction

Over the last two centuries, global economic development has dramatically raised living standards while simultaneously generating significant environmental pressures (Singh et al., 2025). Industrialization, mass production, and resource-intensive practices have contributed to pollution, waste accumulation, and ecological fragility (Aust et al., 2020). Climate change is now defining global competitiveness, regulatory frameworks, and environmental policy procedures that aim at limiting carbon emissions (Faeni et al., 2025). Climate change is increasingly manifested through loss of biodiversity and environmental instability that makes organizations re-strategize and adapt to new socio-economic realities (Sharif & Malik, 2025).

To counteract this, organizations across the globe are implementing proactive environmental strategies including low-carbon technologies, energy-saving operations, and renewable resource strategies in an attempt to promote sustainable development (Singh & Singh, 2025). The concept of sustainability has been extended



to other fields of science including management, behavioural science, and research in organizations, elevating topics such as corporate social responsibility (CSR), environmental management (EM), ethical governance, socially responsible consumption, and sustainability-oriented decision making (Rahmat et al., 2024).

Human Resource Management (HRM) has traditionally focused on staffing, performance, and administrative efficiency (Aust et al., 2020). However, its role has evolved significantly. HRM is currently moulding organizational culture, talent development, employee wellbeing, and innovation (Cheng & Hackett, 2021). With the rise of sustainability, organizations realized that the environment does not change merely as a result of technological changes, but also on the people and their values, behaviours, and everyday decision-making (Banga & Gobind, 2025). Employees define the way environmental policies will be implemented, the utilization of resources, and the incorporation of sustainability values into organizational behaviour (Proença, 2022). Therefore, HRM became an important source of environmental responsibility (Jabeen et al., 2025), through which HR practices were applied to create environmental consciousness, green skills, and pro-environmental conduct (Nadeem et al., 2025). This change led to this specific field of research: Green Human Resource Management (GHRM) (Lu et al., 2022).

1.1. Problem Statement

Nonetheless, the research on GHRM is conceptually disjointed even though it is growing very fast. There is no consensus among scholars about whether GHRM represents a mere ecological expansion of HRM, a subdivision of Sustainable HRM, or an overall behavioural system based on the values of the environment (Agmapisarn & Khetjenkarn, 2025). These inconsistencies have generated differences in definition, operationalization, and theoretical foundation (Cerchione, Alghafes, Gupta, Galgotia, & Papa, 2025). It lacks conceptual unity, which becomes one of the central problems that this study will seek to explore through tracing the intellectual, thematic, and temporal development of GHRM in order to comprehend how fragmentation impacts theoretical development, measurement consistency, and the role of GHRM in the mainstream discourse of HRM (Al Doghani, Ali Soomro, Bano, & Abdelmegeed Abdelwahed, 2024).

Despite numerous literature reviews available, there have been missing links of bibliometric evidence as well as construct-development theory to assess the maturity of GHRM or its path toward consolidating its path. This study addresses this gap by offering a theory-based explanation of conceptual fragmentation in GHRM.

2. Theoretical Foundations and Conceptual Positioning

Although the literature of Green Human Resource Management (GHRM) is growing rapidly, its theoretical basis still remains fragmented, scattered throughout a variety of disciplinary lenses. To overcome this shortcoming, this paper incorporates three complementary theoretical perspectives: Resource-Based View (RBV), Ability-Motivation-Opportunity (AMO) model, and construct development theory to offer a consistent analytical approach to understanding the intellectual evolution of GHRM.

2.1 Resource-Based View (RBV)

In the RBV perspective, human capital is a strategic resource that can help organizations to maintain a competitive advantage in the long term when it is aligned with environmental goals. Green skills, environmental knowledge, and sustainability-oriented competencies are useful, infrequent, and inimitable resources that facilitate environmental performance in the context of GHRM. Nevertheless, the literature shows inconsistency in the conceptualizations and operationalizations of these resources, which adds to fragmentation in the field.

2.2 Ability-Motivation-Opportunity (AMO) Framework

To supplement this macro-level view, the AMO framework offers a micro-foundational description of how GHRM practices result in environmental outcomes. In particular, GHRM increases the capacity of employees via green training, motivation via rewards and incentives, as well as opportunity via participative practices, which develops pro-environmental behaviour. This growing popularity of behavioural and psychological constructs in recent works indicates the shift of thinking about sustainability as being based on employee-level mechanisms instead of a structural HR system.



2.3 Construct Development Theory

To further contextualize this fragmentation, the research is based on construct development theory (Reichers & Schneider, 1990), which theorizes the development of a scholarly field as a series of phases of introduction, evaluation, and consolidation. Using this prism, GHRM seems to be in a transitional phase between evaluation and consolidation in which rival definitions, measurement strategies, and theoretical lenses co-exist without being completely integrated.

Combining these theoretical insights, this paper goes beyond descriptive bibliometric mapping and offers a systematic account of how fragmentation continues to exist in GHRM research and how the discipline is shifting to theoretical maturity.

2.4 Research Questions

Correspondingly, the study poses these research questions:

RQ1. How has the intellectual and thematic structure of GHRM changed over time and what does this say about the conceptual fragmentation of the field?

RQ2. How far has GHRM gone in the construct-development cycle suggested by Reichers and Schneider (1990)?

RQ3. What are the paths that GHRM must take to pursue theoretical integration in the HRM scholarship?

3. Research Methodology

3.1 Research Design and Philosophical Orientation

The proposed study adopts a theory-based bibliometric review approach in which bibliometric methods act as a tool to aid theory interpretation, instead of serving as an objective. The previous reviews find isolated themes but fail to indicate how the themes interact, develop, or how they lead to the development of constructs. Through the combination of bibliographic coupling, co-occurrence, and temporal analysis, this paper presents the first structural map to explain why GHRM has never been structurally consistent and what it takes to advance the subject matter to theoretical solidification.

3.2 Data Source and Search Strategy

In order to achieve methodological rigor and replicability, the study uses a systematic bibliometric approach under the basis of well-defined inclusion and exclusion criteria. Data were collected using the Scopus database, which was chosen because of its large number of high-impact peer-reviewed journals in the social sciences and its ability to be analyzed using bibliometric analysis tools.

The initial step of the analysis was the descriptive review of all the publications in Scopus dated 2011 to 2025 using a search key regarding the term of human resources and green human resources management. This is the term that resulted in the greatest number of relevant publications compared to other related keywords like (TITLE-ABS-KEY ("green human resource management" OR "GHRM" OR "green HRM" OR ("human resource management" AND sustainability))). The findings showed that the articles obtained with the help of the extra keywords were already included into the more general search query of human resources and green human resource management which justified its choice as the main one to be used as the key to the dataset.

The time frame was selected as the first article that Scopus indexed with this keyword was published in 2011, and it was reasonable to consider that this article marked the obvious beginning of the review. Only journals included in the Social Sciences Citation Index (SSCI) and the Emerging Sources Citation Index (ESCI) were searched to be able to include the high-quality and highly reviewed academic outlets.

3.3 Inclusion and Exclusion Criteria

Inclusion Criteria:

Journal articles, reviews, and conference papers that are peer reviewed

Articles that are included in the Scopus index in the social sciences fields

English-language publications

Research that specifically deals with HRM and environmental sustainability

Exclusion Criteria:

Non-academic work (e.g., editorials, no empirical/theoretical contribution to the work)



Redundant and unrelated records

- Other studies not at the HRM-sustainability intersection

3.4 Analytical Techniques

This paper uses a mixture of analysis of co-occurrence of keywords (to determine thematic structures), bibliographic coupling (to trace intellectual connections), and temporal overlay (to study how things have changed) (Koştı & Kayadibi, 2025). VOSviewer, a tool that allows visualizing large-scale bibliometric networks, was used to implement these techniques (Qamar & Samad, 2022).

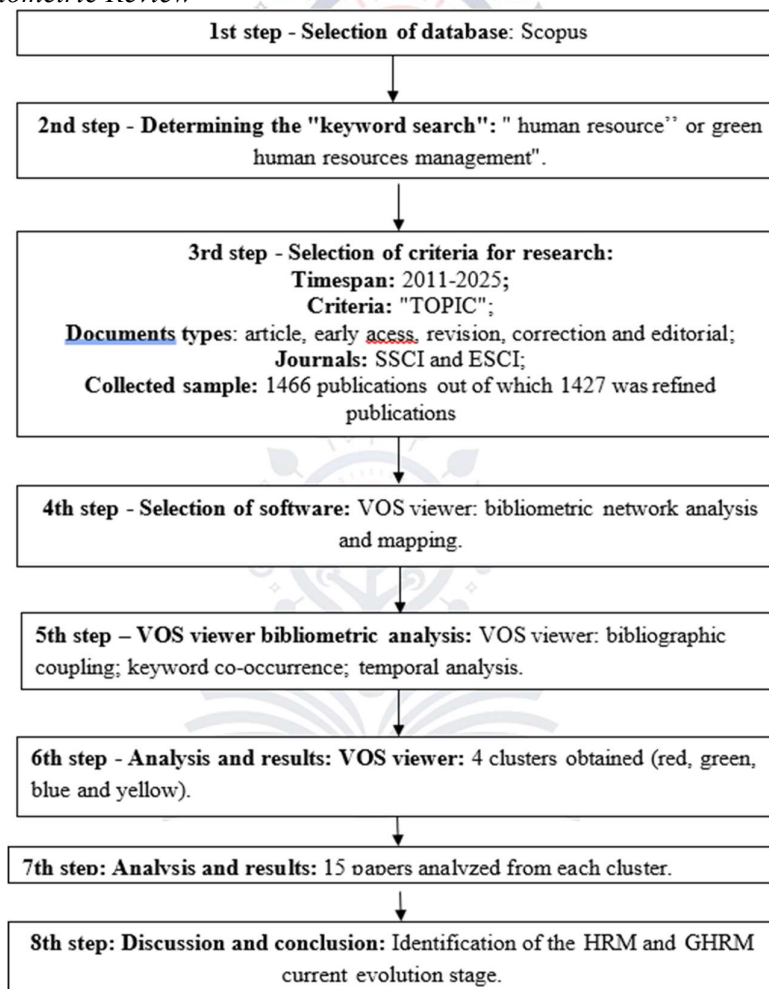
Analytical Strategy: This study contrasts with previous bibliometric studies which have mainly depended on descriptive mapping; instead, it embraces an analytic approach which is theory-driven. Specifically, RBV and AMO frameworks are used not just to identify clusters, but also to interpret them. Historical changes are examined to interpret the development of theory. The evaluation of findings is done through construct development theory to determine field maturity.

3.5 Data Analysis Procedure

The search of the keyword performed in the 2011-2025 period brought a total of 1,426 publications. Out of these, 991 publications (69.48%) were research articles, 247 (17.32%) were book chapters, and 77 (5.40%) were conference papers. Furthermore, a total of 50 review articles (3.51%), 50 books (3.51%), 4 editorials (0.28%), 4 retracted articles (0.28%), one note (0.07%), one letter (0.07%), and one erratum (0.07%) were located in the search. The step-by-step method of the current paper is given in Figure 1.

Figure 1

Workflow of this Bibliometric Review





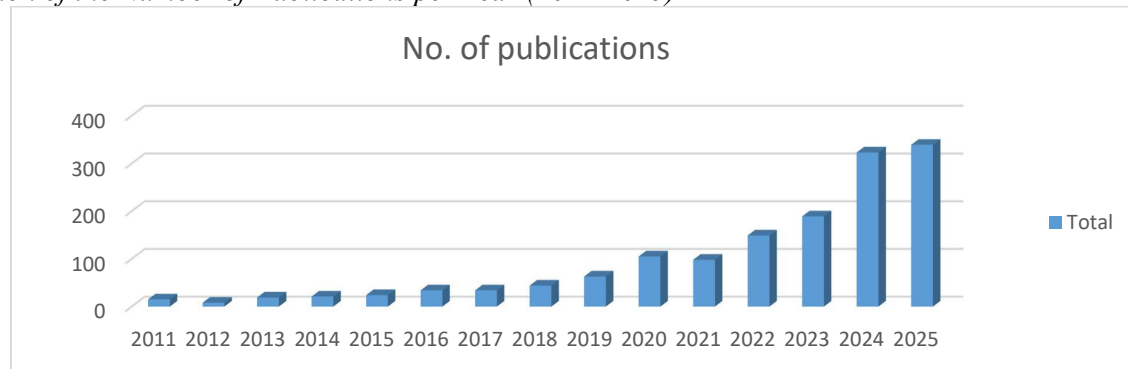
4. Findings of the Study

The results are divided into two sections: firstly, a characterization of the keyword search sample is presented, and secondly, the VOSviewer bibliometric maps are highlighted.

4.1 Evolution of Publications and Citations

Figure 2

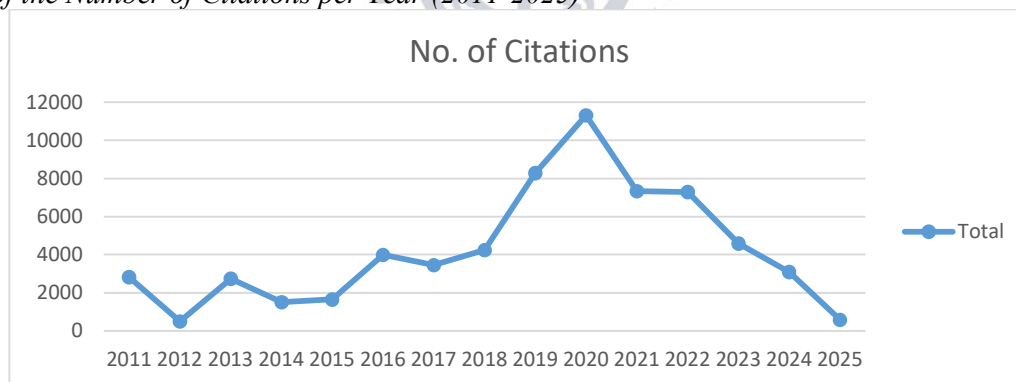
Evolution of the Number of Publications per Year (2011-2025)



The findings indicate that the number of publications has grown steadily in the initial years, but after 2019, it increased at a significant rate. The largest increase was seen in the latter part of the period with the highest volume of 2024 ($N \approx 330$) and 2025 ($N \approx 350$) being the highest publication years. The two-year span of these two years shows the majority share of the sample, as a strong influx of scholarly interest and the fast increase in the research activity in the HRM and GHRM fields.

Figure 3

Evolution of the Number of Citations per Year (2011-2025)



Citation trends show significant fluctuation during the initial years, then a substantial increase since 2018. The peak is seen in 2020 with approximately 11,000 citations. Citations decrease regularly after 2020, but significant numbers remain up to 2021 and 2022. This trend indicates a common pattern of citation lifecycle as older publications accumulate more citations over time compared to recent publications.

4.2 Authors' Affiliation

The scientific production related to HRM and GHRM is mainly represented by India, China, and Malaysia (Table 1).

Table 1

Authors Affiliation

Countries/Regions	% of Total Paper publications	Record count of country
India	13.88%	198
China	9.05%	129
Malaysia	7.64%	109
Pakistan	5.89%	84



Countries/Regions	% of Total Paper publications	Record count of country
United Kingdom	5.54%	79
United States	5.19%	74
Indonesia	4.35%	62
Australia	3.37%	48
Viet Nam	2.59%	37
France	2.31%	33
Brazil	2.17%	31
Italy	2.03%	29
Saudi Arabia	1.82%	26
Spain	1.82%	26
United Arab Emirates	1.75%	25
Turkey	1.54%	22
Bangladesh	1.47%	21

4.3 Most Cited Publications

Table 2

Most Cited Publications

Title	Author(s)	Year	Journal*	No. of Citations	Subject Area
Green Human Resource Management: A Review and Research Agenda	Renwick	2013	IJMR	1618	HRM / Management
Green innovation and environmental performance: The role of green transformational leadership and green human resource management	Singh	2020	TFSC	1487	Sustainability / Innovation / Management
Effects of Green HRM Practices on Employee Workplace Green Behaviour: The Role of Psychological Green Climate and Employee Green Values	Dumont, J.	2017	HRM	1059	HRM / Organizational Behaviour
Green innovation and organizational performance: The influence of big data and the moderating role of management commitment and HR practices	El-Kassar	2019	TFSC	992	Innovation / Technology / Sustainability
The effect of green human resource management on hotel employees' eco-friendly behaviour and environmental performance	Kim	2019	IJHM	893	Hospitality Management / HRM
The Impact of Human Resource Management on	Paillé	2014	JBE	747	Business Ethics / HRM



Title	Author(s)	Year	Journal*	No. of Citations	Subject Area
Environmental Performance: An Employee-Level Study Promoting employee's pro environmental behaviour through green human resource management practices	Saeed	2019	CSREM	714	CSR / Environmental Management
Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental performance for sustainable development	Roscoe	2019	BSE	705	Sustainability / HRM / Organizational Culture
Green human resource management practices: Scale development and validity	Tang, G.	2018	APJHR	700	HRM / Measurement
Green Human Resource Management and Green Supply Chain Management: Linking two emerging agendas	Jabbour	2016	JCP	644	Supply Chain / Sustainability / HRM
The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study	Zaid	2018	JCP	618	Green Supply Chain / HRM
Green human resource management research in emergence: A review and future directions	Ren	2018	APJM	612	Management / HRM
From green to sustainability: Information Technology and an integrated sustainability framework	Dao	2011	JSIS	608	Information Systems / Sustainability
Analyzing the relationship between green innovation and environmental performance in large manufacturing firms	Rehman	2021	TFSC	593	Sustainability / Innovation / Environmental Performance

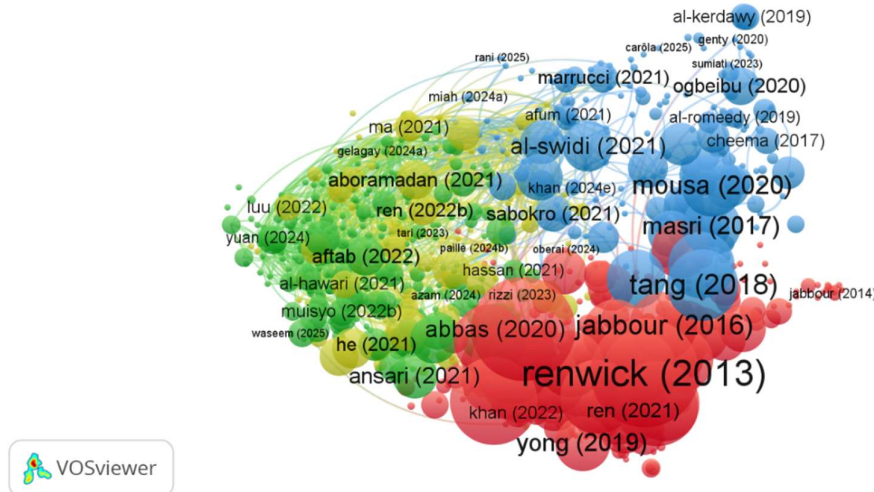
*International Journal of Management Reviews, Technological Forecasting and Social Change, Human Resource Management, the International Journal of Hospitality Management, the Journal of Business Ethics, Corporate Social Responsibility and Environmental Management, Business Strategy and the Environment, the Asia Pacific Journal of Human Resources, the Journal of Cleaner Production, the Asia Pacific Journal of Management, and the Journal of Strategic Information Systems.



4.4 Bibliometric Maps

Figure 4

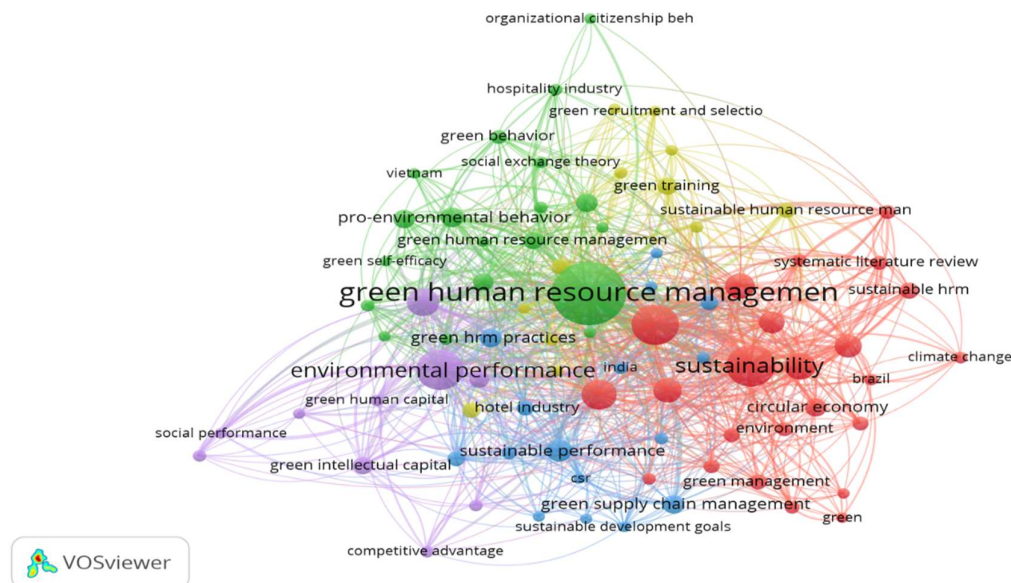
Bibliographic Coupling Network Visualization



The bibliographic coupling analysis indicates that there were four separate clusters (red, green, blue, and yellow), each of which can be considered a group of publications sharing an excellent overlap of their reference lists. The clusters illustrate the intellectual interrelations of the various streams of research in the field based on shared foundational works.

Figure 5

Keyword Co-occurrence Network Visualization



Among the 3,017 keywords obtained during the data analysis, 81 keywords were found to meet the VOSviewer requirement; they had to have at least 10 occurrences as a threshold to be included in the analysis. The Keywords Plus option has been utilized, which offered the opportunity to include the terms that are frequently used in the titles of the bibliographic references along with the keywords that were given by the authors.



Figure 6

Bibliographic Coupling with Temporal Analysis

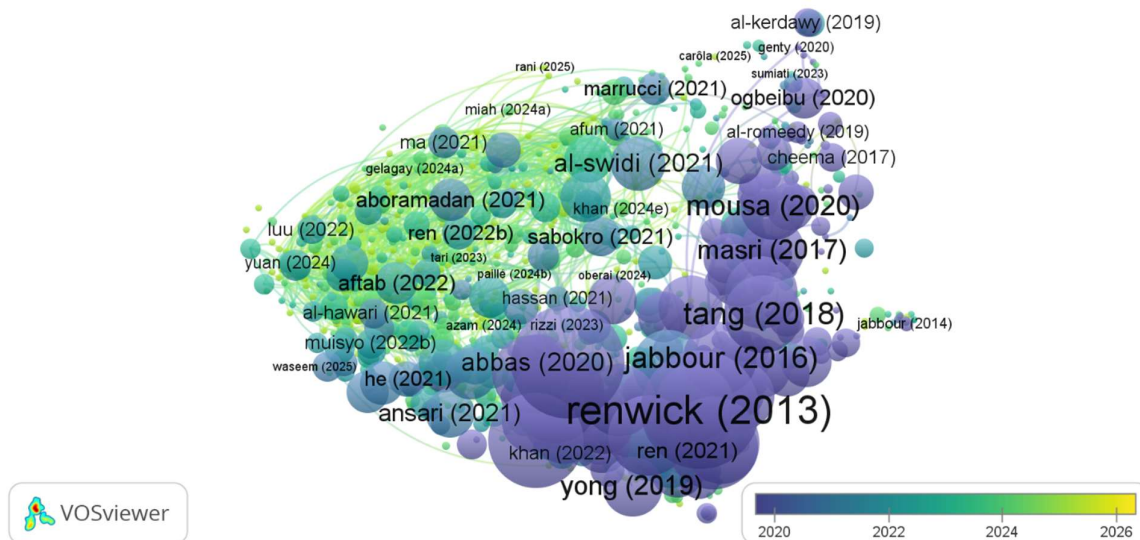
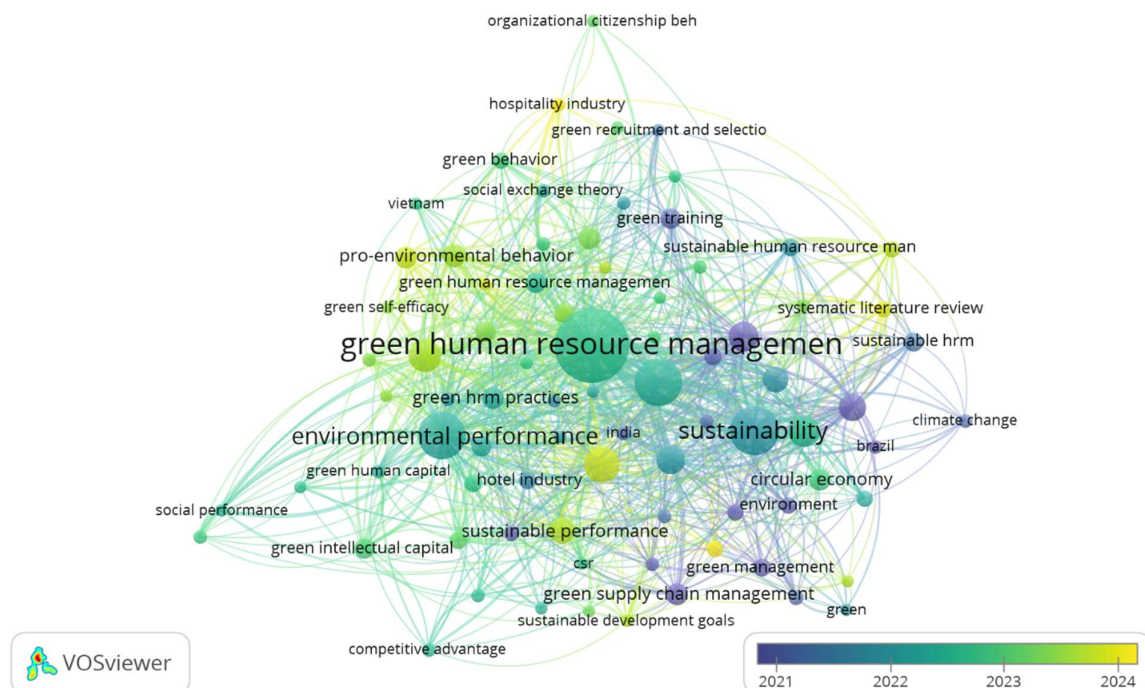


Figure 7

Keyword Co-occurrence Network with Temporal Analysis



4.5 Cluster Analysis

Red Cluster: Implementation of Foundational GHRM and Sustainability HRM Integration.

This grouping includes 24 articles that address the fundamental ties of GHRM practices to larger sustainability-related HRM approaches. The keywords like green HRM, sustainability integration, HR systems, environmental training, green recruitment, and policy implementation emphasize the central nature



of instilling systematic GHRM bases within the organizational systems (Papademetriou, Anastasiadou, Belias, & Ragazou, 2025).

Research within this cluster tends to think of GHRM as a strategic expansion of HRM which is sustainability-based. The early works of this stream focus on the basic part of the HR practices like training, performance appraisal, and recruitment to in still environmental principles on the corporate culture (Chowdhury, Mendy, & Rahman, 2023).

Blue Cluster: Consequences of Leadership, Culture, and Employee Pro-environmental Behaviour. The blue cluster of 16 articles analyses the effects of GHRM on employees, and more specifically on leadership influence, organizational culture, and employee pro-environmental behaviour (PEB) (Q. Ren, Li, & Mavros, 2024). The keywords like leadership, organizational citizenship behaviour, culture, motivation, employee green behaviour, and psychological climate, as well as workplace engagement, are frequently used, which indicates the attitudinal and behavioural focus of such research (Lili & Rafiq, 2024).

Green Cluster: Behavioural Mechanisms and Psychological Drivers of Green Actions. This group brings together 19 articles researching the psychological processes and cognitive-behavioural processes related to green behaviour at work. The high-frequency keywords like psychological ownership, attitudes, beliefs, self-efficacy, green identity, behavioural intention, and pro-environmental mechanisms demonstrate the high psychological orientation of this cluster (Sivarajah, 2024).

Yellow Cluster: Reviews, Models and Measurement. This group illustrates 12 articles, theoretical models, and measurement development studies, denoted by such keywords as model development, frameworks, reviews, measurement instruments, and conceptualization (R. Nadeem, R. Singh, A. Patidar, M. Y. Yusliza, & T. J. B. A. I. J. Ramayah, 2025). These pieces of work offer classification systems that combine HR practice dimensions, organizational and environmental results, behavioural mechanisms, cultural moderators, and leadership (Xie & Lau, 2023).

5. THEORETICAL INTEGRATION OF BIBLIOMETRIC CLUSTERS

In order to go further than the level of descriptive bibliometric mapping, the clusters identified were interpreted systematically by the help of the existing theoretical frameworks in the field of human resource management and organizational research.

The **red cluster** that focuses on the integration of HR systems and sustainability can be based on the Resource-Based View (RBV) and point to the strategic role of human capital and organizational capabilities in creating environmental competitiveness and sustained advantage.

The **blue cluster**, focusing on leadership and behaviour of the employees, can be aligned with the Ability-Motivation-Opportunity (AMO) model, which implies that green HR practices contribute to the ability of the workers, motivation, and opportunity to become active participants in sustainability activities.

The **green cluster**, emphasizing psychological variables like identity, self-efficacy, and environmental commitment, is indicative of micro-foundational orientations of organizational behaviour, thus bringing the AMO framework to a more profound cognitive and affective level that supports pro-environmental behaviour.

Lastly, measurement and conceptual development are the interests of the **yellow cluster** that refers to the stage of construct evolution suggested by Reichers and Schneider (1990) and suggests that the scholarly community continues to refine, operationalize, and standardize Green Human Resource Management (GHRM) as a consistent theoretical construct.

6. BEYOND DESCRIPTIVE MAPPING: ELUCIDATING FRAGMENTATION

Although the four main clusters are found during the bibliometric analysis, there is also a more underlying structural problem of lack of theoretical synthesis between the research streams. The clusters are not an expression of a unified body of knowledge, but instead, parallel but loosely coupled lines of inquiry.

The red cluster underlines structural HR systems, in line with RBV, but not related to mechanisms at the employee level. Conversely, blue and green clusters move towards behavioural and psychological dimensions, which is consistent with AMO and micro-foundational views. But these streams tend to work out of sync and a gap in between the macro-level strategy and the micro-level behaviour occurs.



Three main reasons can be identified why this fragmentation has taken place:

1. **Theoretical Silos** - The RBV, AMO, or psychological theories are not combined with each other, but applied independently in a study.
2. **Measurement Inconsistency** - The absence of a standardized GHRM construct results in different operationalizations.
3. **Contextual Bias** - High concentration in new economies constrains cross-generalizability and theory consolidation.

These results imply that GHRM has developed by growth instead of assimilation, which explains the failure to achieve conceptual unity.

7. EVOLUTION OVER TIME

The prior research in GHRM literature appears in the foundational and review/model-development areas, represented by the red and yellow clusters. These early studies focus on introductory HRM and GHRM structures, conceptual frameworks, and the development of sustainability-oriented HR practices. Between 2016 and 2018, keywords associated with implementation and environmental management emerged (Dwita, Supardi, Santoso, & Dexon, 2024). During this period, research increasingly linked GHRM to environmental management strategies, the development of green products, and the overall maturity of organizational sustainability initiatives.

Between 2019 and 2023, GHRM studies moved to the blue and green clusters, which was based on behavioural and psychological themes. The literature puts more focus on employee-based constructs such as green behaviour, motivation, self-efficacy, and leadership, which is an indication of a shift in structural policies to psychological forces that drive sustainability (Fachada, Rebelo, Lourenço, Dimas, & Martins, 2022).

Table 3

Evolution of Theoretical Contributions in Green Human Resource Management (2011-2025)

Year	Journal	Paper Title	Dominant Theory
2011	JSIS	From Green to Sustainability: IT & Sustainability Framework	Systems Theory / Sustainability Integration
2013	IJMR	Green HRM: A Review and Research Agenda	Conceptual Foundation (Early Stage)
2014	JBE	HRM Impact on Environmental Performance	RBV (Resource-Based View)
2016	JCP	GHRM & Green Supply Chain Linkage	Systems Integration Theory
2017	HRM	GHRM & Employee Green Behaviour	Micro Behavioural Theory
2018	APJHR	GHRM Scale Development	Construct Development Theory
2018	APJM	GHRM Research Emergence	Conceptual Expansion
2019	TFSC	Green Innovation & Performance	RBV + Innovation Theory
2019	BSE	Green Culture & Performance	Organizational Culture Theory
2019	CSREM	GHRM & Pro-environmental Behaviour	AMO Theory
2020	TFSC	Leadership & Green Innovation	Leadership Theory
2021	TFSC	Green Innovation & Environmental Performance	Integrated Sustainability Framework
2023	Sustainability	Systematic GHRM Review	Integrative Theory Development
2024	Sustainability	Green HRM & Behavioural Drivers	Psychological Theory
2025	Multiple Journals	AI & GHRM / Digital HRM	Emerging Digital + AI Theory

According to the table, early GHRM studies were largely conceptual and systems-based in their perspective, and then RBV and AMO schools of thought dominated in the later stages of development. Recent research indicates a distinct trend towards micro-level psychological and behavioural theories. The new trends



also emphasize the blending of digital and AI-based viewpoints, while previous theories still ensure a backbone but are not fully integrated.

5. Discussion

This paper expands on the descriptive bibliometric mapping to offer a theory-based explanation of the development of Green Human Resource Management (GHRM). The results indicate an apparent but not synthesized shift of macro-level HR systems to micro-level behavioural and psychological processes, indicative of the increased complexity of the field but little theoretical integration. Although initial studies defined GHRM as a structural continuation of HRM with a Resource-Based View (RBV), more recent studies put more stress on employee-level procedures that are consistent with the (AMO) concept. These views have mostly grown in parallel, resulting in parallel yet weakly integrated knowledge streams.

This gap shows a crucial weakness in the existing body of research, namely the lack of a multi-tiered theoretical framework that can be used to connect organizational competencies to individual behavioural outcomes. According to the RBV, GHRM asserts human capital as a strategic resource towards environmental sustainability but does not elaborate on how these capabilities are converted into quantifiable environmental results. On the other hand, studies based on AMO and those with psychological bases offer detailed information about employee behaviour without linking it to the larger strategic HR systems. Such theoretical decoupling has led to conceptual ambiguity, inconsistent measurement, and scant cumulative knowledge building.

The analysis of these results in the context of the construct development theory implies that GHRM is at the transitional phase between evaluation and consolidation. Despite the empirical and thematic growth in the field, standardized definitions, congruent measurement systems, and integrative theoretical limits are yet to be determined. Consequently, GHRM is now a fragmented construct that has overlapping domains, albeit loosely coupled.

This study therefore calls for a paradigm shift from fragmented theoretical development toward multi-level integrative theory building in GHRM research. In particular, it is necessary to balance the macro-level strategic outlook and micro-level behavioural understandings within a multi-level outlook. This kind of integration would not only lead to a better conceptual understanding but also allow sounder theoretical and empirical developments in sustainability-focused HRM research.

5.1 Research Implications

This research will contribute to the GHRM literature by positioning GHRM as an evolving theoretical domain rather than a fully established construct. It builds on previous bibliometric studies by going beyond descriptive analysis to offer critical, theory-based explanation of intellectual structures in the discipline. Through construct development theory, the study locates GHRM into a maturity framework, suggesting that it is still in the transition phase of moving out of evaluation and into consolidation, although theoretically it is incomplete.

This research will also help organizations and HR practitioners to understand the current state of GHRM research and its practical implications for implementing sustainability-oriented HR practices. The findings will guide future research directions and assist in developing coherent GHRM strategies in organizations.

5.2 Limitations of the Study

There are some restrictions to note. First, the study is limited to Scopus-indexed sources, which may exclude relevant publications from other databases such as Web of Science or Google Scholar. Second, the bibliometric analysis, while comprehensive, does not provide in-depth qualitative analysis of specific theoretical arguments or methodological approaches. Third, the study focuses on publications in English only, which may limit the representation of research published in other languages. Fourth, the temporal analysis covers up to 2025, which means that more recent publications may not have received sufficient citations to be fully represented in the analysis. Fifth, the study does not examine the moderating role of industry type, organizational size, or geographical context, and future studies could benefit from including such variables to enhance explanatory power.



6. Conclusion and future directions

The bibliometric survey of the HRM and GHRM literature published in the years 2011-2025 supports the above assertion as the rate of growth was high after 2018 when sustainability was placed at the center of organizational strategy. GHRM has emerged as a strategic mechanism that influences organizational values, employee behaviour, and transitions to sustainability. Four major research streams were identified, which include implementation, leadership and behavioural outcomes, psychological drivers, and conceptual approaches. Findings suggest that GHRM enhances environmental performance and pro-environmental attitudes, where employees are treated as strategic assets.

6.1 Future Research Recommendations

The creation of unified and standardized measurement models of Green Human Resource Management (GHRM) should be given precedence in future research to improve comparability and conceptual clarity across research. Cross-country comparative research is also required in order to gain more insight into how the effectiveness of GHRM practices is influenced by institutional, cultural, and regulatory contexts.

Also, researchers ought to consider how artificial intelligence and digital HRM tools can be integrated in the promotion of organizational sustainability initiatives. Longitudinal research designs are crucial in order to determine the cause-and-effect relationships and the dynamic nature of GHRM over time.

To enhance the business case of sustainability, future research ought to investigate the connection between GHRM practices and tangible organizational results, in terms of financial performance and environmental, social, and governance (ESG) measurements.

Additionally, future studies should:

- Incorporate broader datasets from multiple databases
- Employ mixed-method approaches combining bibliometric analysis with qualitative case studies
- Investigate the role of contextual factors such as industry type, organizational culture, and national culture
- Develop and test integrative theoretical frameworks that bridge macro and micro perspectives
- Examine the dark side or unintended consequences of GHRM practices

Author Contributions

All authors participated in ideation, development, and writing the manuscript. All authors read and approved the final manuscript.

Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this article.

Funding Statement

The authors did not receive financial support from any funding agency or external organization for the research, authorship, or publication of this article.

Informed Consent

Not applicable. This study does not involve human participants requiring informed consent. The data used in this bibliometric analysis were derived from publicly accessible published literature, and no private or sensitive information was collected from individuals.

Data Availability

The datasets generated and analysed during the current study are available from the corresponding author upon reasonable request. The bibliometric data were sourced from the Scopus database, and the VOSviewer output files, including network maps and cluster analyses, can be shared for verification and further research purposes. Due to licensing restrictions, raw data from Scopus may not be publicly distributed but can be accessed through institutional subscriptions. The authors are committed to transparency and will provide detailed methodological information and analysis protocols upon request.



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Appendix A

Table A1. Publications from the bibliographic coupling analysis—Red cluster.

	Authors and Date	Title of Paper	Citation Frequency	TBF
RED CLUSTER (Cluster 1)	(Kutu'Kampilong, Karauwan, Suatan, Merentek, & Korua, 2025)	Sustainable leadership innovation capability (SLIC)	1	36
	(Ali, Yang, Ali, Ali, & Noman, 2025)	AI-driven capabilities & green HRM	1	145
	(Mahmud, 2025)	Circular economy readiness & digital solutions	6	30
	(Bangura, 2025)	Barriers in adopting GHRM	3	118
	(H. J. Ren, 2025)	Digital transformation & ESG rating	0	40
	(Z. Liu, Wang, Gupta, Alghafes, & Broccardo, 2025)	How green HRM boosts resilience	1	151
	(Cooke, 2025)	From strategic HRM to sustainable HRM	4	34
	(Tudu & Mishra, 2025)	Smart & green: IT-HRM framework	0	167
	(Y. Liu & Wang, 2025)	Faultline & corporate green innovation	2	120

TableA2. Publications from the bibliographic coupling analysis—green cluster.

	Authors and Date	Title of Paper	Citation Frequency	TBF
GREEN CLUSTER (Cluster 2)	(Agmapisarn & Khetjenkarn, 2025)	Green leadership, support & environmental performance	0	94
	(Jiang, Shan, & Qalati, 2025)	Executive sustainability orientation & green HRM	0	73
	(Xiang Zhang, Zhang, & Yang, 2024)	Green entrepreneurial orientation	2	110
	(Gao, Al Mamun, Masukujjaman, & Yang, 2025)	GHRM, leadership & culture	2	395
	(Koupaei, Karatepe, Rezapouraghdam, Rescalvo-Martin, & Enea, 2025)	Triple serial mediation in GHRM	0	310
	(Cerchione et al., 2025)	GHRM strategies & CSR	0	268
	(Doghan, Soomro, Bano, & Abdelmegeed Abdelwahed, 2024)	Green workplace & environmental passion	0	430
	(Guo, Wang, & Yang, 2025)	Synthesizing GHRM outcomes	0	156
	(Uzkurt, Arslan, Budhwar, Ekmekcioglu, & Ceyhan, 2025)	Green intentions to financial performance	0	410
	(Guan & Frenkel, 2025)	Environmental responsibility & GHRM	0	194
	(Uddin et al., 2025)	Review of sustainable HRM	0	283
	(Opata & Akuoko, 2025)	Emotional intelligence & SME greening	0	116
	(Nabi, Liu, & Fahim, 2025)	GHRM & sustainability	0	147



(Al-Nimer, 2025)	GHRM & environmental performance	1	90
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TableA3. Publications from the bibliographic coupling analysis— blue cluster.

	Authors and Date	Title of Paper	Citation Frequency	TBF
BLUE CLUSTER (Cluster 3)	(Jerónimo, Tigre, Henriques, & Lourenço, 2025)	Green work-life synergy	3	260
	(Amin, Rubel, Kee, Rimi, & Oláh, 2025)	GHRM, circular economy & knowledge sharing	1	73
	(Pan, Xiang, & Qin, 2025)	GHRM & pro-environmental behaviour	1	158
	(Uddin et al., 2025)	GHRM & sustainable performance	1	407
	(Aiswarya & Manivel, 2025)	GHRM & OCB	0	209
	(Ashraf, Qing, Nasir, & Amin, 2025)	Green innovation to sustainable performance	0	161
	(Glińska-Neweś, Glinka, Lewicka, Keranen, & Fu, 2025)	Corporate entrepreneurship climate	1	249
	(Gupta & Sharma, 2025)	GHRM for conflict management	0	163
	(Abid, Faisal, Al-Esmael, Farooq, & Nassour, 2024)	AI & GHRM challenges	4	287
	(Yee Yen & Chin Wei, 2023)	Sustainability in MSMEs	4	135
	(Aggarwal & Agarwala, 2023)	Environmental strategy & GHRM	5	276
	(Sanusi & Farida, 2023)	Transformational leadership & GHRM	34	296

TableA4. Publications from the bibliographic coupling analysis—Yellow cluster.

	Authors and Date	Title of Paper	Citation Frequency	TBF
YELLOW CLUSTER (Cluster 4)	(Paillé, Mejia, Cisneros, Sanchez-Famoso, & Chouchane, 2024)	Configurations of GHRM for sustainability	1	193
	(Zeina & Youssef, 2025)	GHRM & hotel sustainable performance	3	369
	(Al Doghan et al., 2024)	GHRM & organizational green image	0	89
	(Pichlak, 2024)	Green crafting & eco-participation	22	195

TBF-total binding force.



Appendix B:

TableA5. Keywords from the keyword co-occurrence analysis.

Yellow Cluster		Blue Cluster		Green Cluster		Red Cluster	
Keywords	Frequency	Keywords	Frequency	Keywords	Frequency	Keywords	Frequency
Configurations of GHRM	1	Green work–life synergy	3	Green leadership & performance	0	SLIC leadership capability	1
Hotel sustainable performance	3	Circular economy & GHRM	1	Executive orientation & GHRM	0	AI-driven sustainability	1
Green organizational image	0	GHRM in high-tech firms	1	Green entrepreneurial orientation	2	Circular economy readiness	6
Green crafting & behaviour	22	GHRM & sustainable performance	1	GHRM, leadership & culture	2	Barriers adopting GHRM	3
Environmental engagement	0	GHRM & OCB	0	Triple serial mediation (GHRM)	0	Digital transformation & ESG	0
		Green innovation & performance	0	GHRM strategies & CSR	0	GHRM to resilience	1
		Entrepreneurship climate	1	Green workplace & passion	0	Strategic HRM to sustainable HRM	4