

Tri-pillar of human resource practices: an integrated review of green, sustainable and environmental practices in HRM with insights for future research

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Abstract

Purpose – This study aims to investigate the role of human resource management (HRM) strategies in advancing sustainability. It focuses on integrating green HRM (GHRM), sustainable HRM (SHRM) and environmental HRM (EHRM) into a unified tri-pillar framework. Rather than treating these domains separately, the study explores their combined relevance to long-term organizational goals. It also touches on broader socioeconomic influences.

Design/methodology/approach – A dual-method approach is adopted, combining bibliometric analysis with a systematic literature review (SLR). The bibliometric component maps key publications, trends and author networks, while the SLR offers conceptual depth by reviewing theoretical and practical developments. This blend provides a quantitative and qualitative perspective on the evolution of sustainable HRM. The review is theoretically based on stakeholder theory, resource-based theory and institutional theory to elucidate complementarities among three pillars of HRM.

Findings – The review outlines three central elements in sustainable HRM: green performance, environmental sustainability and employee empowerment. Though consumption trends are not deeply analyzed, they are briefly acknowledged as potential external influences. The focus remains on internal organizational strategies and their alignment with sustainability.

Research limitations/implications – The study is limited to peer-reviewed academic sources, excluding grey literature and real-time corporate practices. It also does not explore regional or sectoral differences in sustainable HRM, which may limit the generalizability of findings.

Originality/value – This research offers a novel conceptual synthesis by merging GHRM, SHRM and EHRM into a tri-pillar framework. While not exhaustive, it encourages further inquiry and practical reflection on aligning human resource functions with sustainability goals.

Keywords Green HRM, Environmental HRM, Sustainable HRM, Integrative review

Paper type Research article

Introduction

The United Nations' Brundtland Report, published in the late 1980s, quickly made sustainability a popular topic. "A development that meets the needs of the present without compromising the ability of future generations to meet their own needs" is the definition of "sustainable development", which was the subject of the report (Commission on Environment, n.d.). The idea of organizational sustainability has been developed based on this definition. Organizational sustainability is a comprehensive concept that includes social responsibility, ecological issues and the integration of business operations concerning the social and natural



environments since for-profit entities have traditionally been the first to address this issue the most (Linnenluecke & Griffiths, 2010).

The term “green technology innovation” refers to any new products, procedures or technologies that assist in preserving resources and lessening environmental pollution. As a result, it is one of the main ways that highly polluting companies can make the green shift. Green innovation is recognized as a key factor influencing commercial development, ecological sustainability and quality of life (Brahmi *et al.*, 2023). As sustainability and environmental awareness have become more popular over the past 20 years, practitioners and scholars have been forced to consider HRM by way of a tactical tool for creating an eco-friendly association, which in turn has a confident impact on the economy and culture. According to Wehrmeyer (2017), “If a firm wants to adopt an environmentally conscious approach to its operations, its employees are the main determinant of either success or failure; this explains the development of a new idea known as green human resource management (GHRM).”

GHRM adopts a multidisciplinary perspective, integrating theories and methodologies from various fields to explore key issues and challenges (Ren, Tang, & Jackson, 2018). GHRM research encompasses all aspects of human resource (HR) practices that affect sustainability, including awareness, acceptance and implementation. Specifically, it includes all practices that support an organization’s social, economic and ecological sustainability dimensions from the viewpoint of its employees, considering corporate sustainability requirements. This last dimension pertains to employee safety, health, equity and well-being (Renwick, Redman, & Maguire, 2013; Dyllick & Hockerts, 2002). There are several justifications for viewing GHRM as a critical obstacle to an organization’s successful adoption of a sustainable strategy.

First and foremost, HR practices are essential to implementing the environmental policies at the core of a company’s sustainability by “hiring and selection, learning and development, performance appraisals, compensation and benefits, incentives, rewards and exit policies” (Renwick *et al.*, 2013). This transition to a sustainable approach requires commitment from both the management side and the employees’ side, not just from those who are directly engaged in new GHRM practices. “These activities can promote and sustain green behaviors among all members of an organization” (Dubois & Dubois, 2012). Environmental concerns have varying effects on employees’ personal lives, which adds to the significance of GHRM. This is because not only does the state of the environment clearly affect people’s quality of life, but environmental issues are also connected to the actions, beliefs and decisions of employees (Brekke & Nyborg, 2008). In this regard, several studies revealed that firms are facing an increasing number of individuals who would choose to work for greener companies or jobs when they are hiring new staff (Guerci, Montanari, Scapolan, & Epifanio, 2016b). Hence, although the earlier studies have dealt with Green HRM (GHRM), Environmental HRM (EHRM) and Sustainable HRM (SHRM) individually, there is a lack of attempts to derive a unified framework for integrating all three at the conceptual level. This research attempts to bridge the gap by suggesting a framework that comprises the three pillars.

Theoretical background

The proposed tri-pillar framework is grounded in diverse relevant significant theoretical perspectives, which provide a foundation for the reason and basis of sustainability-focused HRM practices. For example, the stakeholder theory offers a fundamental theory explaining the emergence or proliferation of GHRM and SHRM, which argues that, in recent years, organizations are increasingly becoming responsive to environmental stakeholder demands raised by employees, governments, and society (Guerci, Longoni, & Luzzini, 2016a; Mousa & Othman, 2020). Further, since HRM plays an integral role in organizational behavior, the resource-based view theory offers a significant theory that affirms the importance of HRs and HRM as fundamental intangible resources, which can help build organizational capabilities favorable for organizational sustainability competitiveness (Liang & Li, 2025; Ren *et al.*, 2018). In particular, the resource-based view theory emphasizes the importance of EHRM and

SHRM as resources that can act as organizational strategies to achieve organizational competitive superiority. Institutional theory offers an informative theory, which provides an explanation for the formalization of EHRM practices by organizations that are aware of organizational legitimacy (Anlesinya & Susomrith, 2020; Guerci *et al.*, 2016a).

Sustainability-focused human resource management is now represented by two conceptual streams running in parallel rather than within an integrated framework of analysis. GHRM still leads the discussion and is mainly used to describe how HR practices shape individual pro-environmental behaviors of employees through hiring, development, appraisal and rewarding practices (Mousa, Fernandez-Crehuet, & Thaher, 2025). Nonetheless, this particular focus on behavioral activation falls short in describing how green practices are institutionalized within organizations and how they are sustained post-enactment. It is for this reason that EHRM has been proposed to institutionalize environmental considerations within HR practices through governance and control of environmental performances, but the conceptual foundations of this perspective are still very weak and often encompassed within GHRM conceptual frameworks (Anlesinya & Susomrith, 2020). Finally, SHRM conceives of sustainability as an enduring strategy for organizations that are consistent with their purposes and the triple bottom line approach. However, SHRM is often formulated in a way that is highly normative and conceptual and is not necessarily linked to the actual practices within which sustainability is embedded within organizations (Liang & Li, 2025). The GHRM framework has embraced the high-commitment, high-performance and strategic HRM approaches. The ability-motivation-opportunity (AMO) and the social identity theory are the two main theories used to examine green HR practices (Renwick *et al.*, 2013). According to the AMO theory, “an employee’s performance is determined by their ability, motivation, and opportunity to participate, and therefore, implementing the AMO theory to green HR practices entails determining and enhancing employees’ green abilities, creating a structure of green performance reviews and incentives that inspire green motivation, and giving employees ways to work with flexibility, autonomy and decision-making involvement” (Cabral & Lochan Dhar, 2019). According to the social identity theory, “individuals form their identity based on their association with various demographic collections, like age and gender, which will be taken into consideration. Regardless of their participation in green initiatives, this theory contends that workers who cultivate a green personality in the workplace are more inclined to support environmentally conscious behavior, which may affect the environmental outcomes of their company” (Kim, Kim, Choi, & Phevaroon, 2019).

Through green performance management, employers’ outputs and actions are tracked to ensure they align with the organization’s set green goals. Workplace environmental factors should be used to assess employee performance. Managers should develop reasonable green targets and communicate their policies and expectations. The managers should oversee any deviation from these objectives (Singh, 2010). A “green recruitment” strategy places a high priority on the environment and incorporates it into the employment process. This can draw in and keep those who are aware of sustainable practices while also assisting with effective environmental management. To accomplish their goals, employers can also use green practices, including eco-friendly environments, paperless interviews and others. Employee skill, knowledge and attitude development are the main goals of green training and development (Guerci *et al.*, 2016b). Along with garbage management and other conservation methods, it educates children about energy management, waste reduction and environmental consciousness. To guarantee that workers can get in touch with them without hesitation, eco-friendly supervisors are created (Singh, Mishra, & Keshri, n.d.). By providing the chance for workers to take part in environmental management and green employee empowerment, these strategies can assist firms in reaching their green performance objectives, and it will also involve formulating a strong green vision, establishing a green learning atmosphere, providing green activities and also promoting green engagement (Gupta, 2018; Guerci *et al.*, 2016b).

GHRM incorporates and applies environmental principles to HR activities aiming at promoting positive employee behaviors that are less harmful to the organization’s

environment (Dumont, Shen, & Deng, 2017). EHRM considers the planning and implementation of HR functions concerning the broader goal of achieving ecological sustainability alongside adherence to organizational environmental policies and initiatives for social responsibility (Wehrmeyer, 2017). SHRM is the more complex one, taking, in principle, the long-term view (Mousa & Othman, 2020).

The significance of GHRM, EHRM and SHRM, as it pertains to sustainable business models and the attainment of ecological development objectives, is an integral part of the subject matter of this research (Renwick *et al.*, 2013; Mousa & Othman, 2020). This article will highlight the significance of the inclusion of the above HRM practices in enhancing business and employee productivity and the overall sustainability of the company, as they pertain to future business models and sustainable development objectives (Dyllick & Hockerts, 2002; Ren *et al.*, 2018).

Bibliometric analysis proves to be a well-styled and unbiased technique to understand the intellectual profile of a specific research domain, identify emerging bibliometric trends and identify knowledge gaps (Donthu, Kumar, Mukherjee, Pandey, & Lim, 2021). Bibliometric methods prove useful within the contemporary scope of HRM and sustainability as a systematic technique to aggregate vast volumes of literature available in various bibliographic sources (van Eck & Waltman, 2017). This bibliometric technique has tremendous applicability in the highly dynamic domain of HRM involving GHRM, SHRM and EHRM in the last two decades, marked by various terminologies, conceptualizations and orientations (Ren *et al.*, 2018).

By analyzing citation patterns, co-authorship networks, keyword co-occurrences and bibliographic couplings, bibliometric analysis provides a macro-level overview that complements the depth offered by systematic literature reviews. This dual approach facilitates a comprehensive understanding of how sustainability has been conceptualized within HRM, highlights underexplored areas and tracks the evolution of scholarly interest over time. Moreover, it aids in justifying the integration of tri-pillar practices and informs directions for future research (Fernandez-Alles & Ramos-Rodríguez, 2009; Donthu *et al.*, 2021; van Eck & Waltman, 2017).

Tools such as VOSviewer and Bibliometric have been instrumental in visualizing bibliometric networks, enabling researchers to discern patterns and relationships within the literature effectively. These tools support the identification of influential publications, key contributors and thematic clusters, thereby enhancing the analytical rigor of the study (van Eck & Waltman, 2017).

The focus of this study is the incorporation of GHRM, EHRM and SHRM to promote business sustainability. It determines the effect of these factors on employee engagement, the environmental performance of the organization and existing organizational sustainability. The study is also aimed at establishing the major issues and prospects for the application of GHRM and SHRM practices. Furthermore, it intends to develop a framework that defines the relationship between sustainability and HR practices. Research on GHRM, EHRM and SHRM is interesting and growing, yet there is limited literature that combines these topics into one study.

Research questions:

- RQ1. “How have green HRM, environmental HRM and sustainable HRM research developed in recent times (publication trend)?”
- RQ2. “What are the most renowned articles, authors, journals, countries that contribute the most and associations in this field?”
- RQ3. “What is the thematic structure in this area?”

Research methodology:

In this study, we used an integrated review approach that incorporated both the bibliometric evaluation and an in-depth evaluation of the collected works, as both are more appropriate approaches for this vibrant research area. We employed bibliometric analysis to perform the thematic study of the body of existing research on GHRM, EHRM and SHRM. It is among the most rigorous methods to track the abundance of data on the research subject (Brahmi *et al.*, 2023). A systematic literature review (SLR) is an appropriate method to identify evolving and emerging research scope in a specific zone of study and to analyze and then summarize the existing literature. According to Paul, Lim, O’Cass, and Hao (2021), SLR is “an efficient technique for hypothesis testing, summarizing the results of existing studies and assessing consistency among previous studies; these tasks are unique to medicine.” For cluster diagrams, the threshold criteria were based on the “Louvain clustering algorithm” used to generate figures that used standardized associations. The authors used the bibliometrix package and an SLR to conduct the study. The analysis focused on the existing literature based on yearly publications, top-rated authors, journals and articles and keyword usage and their co-occurrence and reference analysis, as illustrated in Figure 1.

The results of the information-gathering process, as they were being obtained, were not considered conclusive evidence on their own, but their implications were considered for further informing the organization and conduct of the SLR that followed as a function of this research exercise (Donthu *et al.*, 2021). Thus, it was observed that the thematic groups of publications, as well as the keyword co-occurrence patterns identified as a function of citation analysis and social networking methodology, informed the organization of the qualitative review, leading to the identification of the three dominant pillars of business, as discussed through the systematic literature review, namely, green performance, environmental sustainability and employee empowerment, as identified through an SLR (van Eck & Waltman, 2017).

Data collection procedure:

The study was conducted by following a structured approach encompassing three steps: Selecting the sources of data, identifying the relevant articles and defining the addition and omission criteria. To carry out the data collection process, the researchers used the most widely recognized databases, “Scopus and Web of Science” (WoS), which are used especially in social science research. However, these databases were chosen because of their massive coverage and credibility, and mainly, most of the researchers frequently used these databases in their bibliometric and SLR papers.

The following criteria were subsequently applied to select articles for examination. Articles required to mention the following words in their title, abstract or keywords: “green human resource management practices” OR “green HRM practices” OR “green HR practices” OR

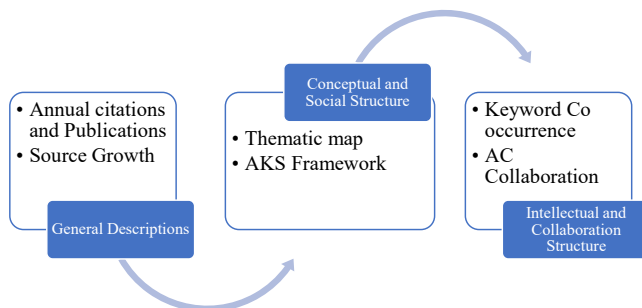


Figure 1. Methodological flowchart. Source: Developed by authors

“sustainable human resource management practices” OR “sustainable HRM practices” OR “sustainable HR practices” OR “environmental human resource management practices” OR “environmental HRM practices” OR “environmental HR practices” “Articles required to be published in subjects like” “business management and accounting,” “social sciences,” “economics, econometrics and finance” and “arts and humanities”. The document type should be articles and reviews, and the articles are required to be in English. The authors’ search included publications until January 2025. They identified 818 publications between 2012 and January 2025 based on the above criteria, basically known as the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method, subject, document type and English language (Figure 2). While merging the databases, the authors removed 75 identical articles.

Results and findings:

Summary of the bibliometric analysis

In previous studies, authors utilized numerous procedures for performing bibliometric analysis, each of which has its set of strengths and limitations. This bibliometric analysis is structured with three main components: main information (bibliographic) data, document

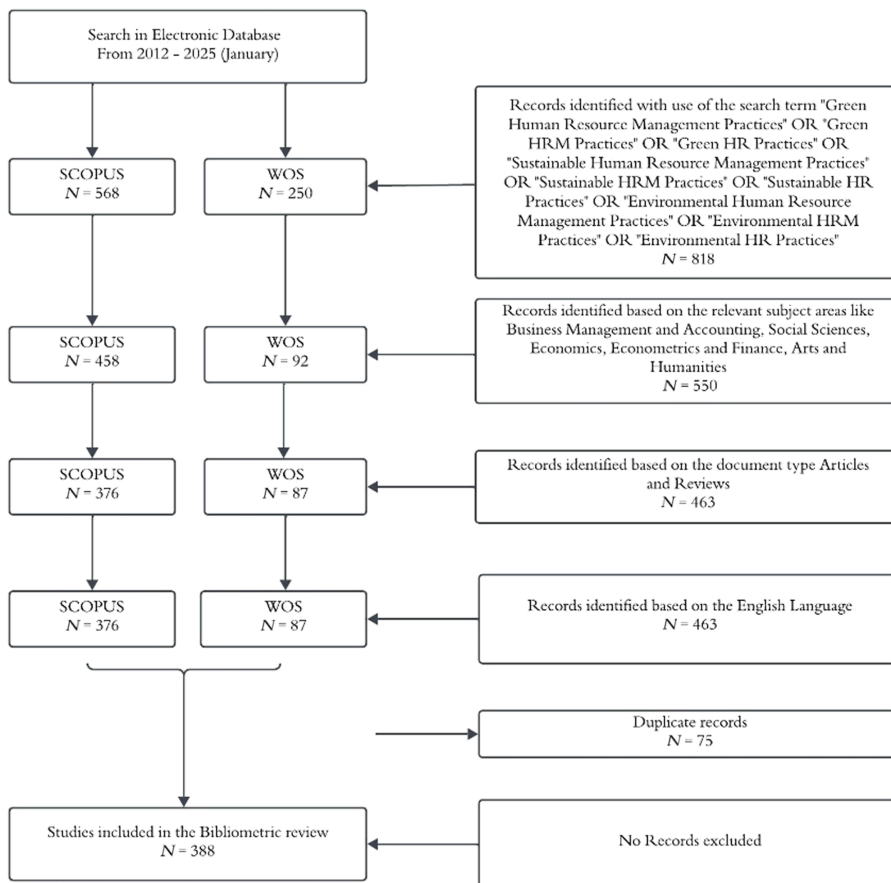


Figure 2. Conceptual framework (PRISMA). Source: Developed by authors

Table 1. Summary statistics

Description	Results
<i>Main information about data</i>	
“Period”	2012:2025
“Sources (Journals, Books, etc)”	173
“Total number of documents”	388
“Annual growth rate %”	8.82
“Document average age”	2.82
“Average citations per doc”	41.2
<i>Document information</i>	
“Keywords plus (ID)”	583
“Author’s keywords (DE)”	998
“Article”	360
“Reviews”	28
<i>Author information</i>	
“Authors”	1,164
“Authors of single-authored documents”	37
“Author of multi-authored documents”	351
“Single-authored documents”	44
“Documents per Author”	0.33
“Authors per document”	3
“Co-authors per documents”	3.54
“International co-authorship %”	7.474

information and author information. Table 1 presents the summary of statistics that helps us to examine the overall authors in this field, the collaborative research culture and the document type published, which provides a deeper insight into the academic landscape of this research area.

Year-wise publication and mean citations

The annual publications and the citations that go with them are shown in Figure 3. The graph shows a stable growth in the overall number of publications annually (RQ1 addressed).



Figure 3. Publication trend and total mean citations. Source: Developed by authors

However, there is a visible variation when looking at the total number of citations annually. The development of GHRM, EHRM and SHRM practices indicates highly cited papers that laid a solid foundation during the early period (2012–2016) of research. Rising scholarly interest was reflected in the rise in publications along with enduring high impact during the 2017–2019 timeframe. After 2020, the research publications may have increased, but simultaneously, the mean citation score decreased. The reason behind the extensive increase in publications could be the United Nations (UN) Sustainable Development Goals (SDGs), which focus on sustainable and positive environmental actions.

Top-cited source productions with indexes

Over the last 15 years, the top 10 journals have published more articles on this research topic, as shown in Table 2 and Figure 4. “Furthermore, it offers information on the journals’ influence as determined by their h and g indices. The g-index, on the other hand, finds the greatest number such that the top g papers collectively have more citations” (Egghe, 2006). “The h-index, a metric at the author level, measures an author’s scholarly influence by counting the number of publications cited at least that many times by other authors” (Hirsch, 2005). Sustainability is the most prominent journal in this discipline, with 55 publications, making it

Table 2. Top 10 cited sources with indexes

Source	H-index	G-index	TC	NP
“Journal of Cleaner Production”	17	24	3,922	24
“Sustainability (Switzerland)”	20	37	1,405	55
“Technological Forecasting and Social Change”	1	1	1,155	1
“Human Resource Management”	3	3	950	3
“Corporate Social Responsibility and Environmental Management”	4	10	920	10
“International Journal of Human Resource Management”	5	6	671	6
“Asia Pacific Journal of Human Resources”	5	6	644	6
“Business Strategy and The Environment”	5	7	614	7
“International Journal of Manpower”	6	8	578	8
“Tourism Management”	1	1	479	1

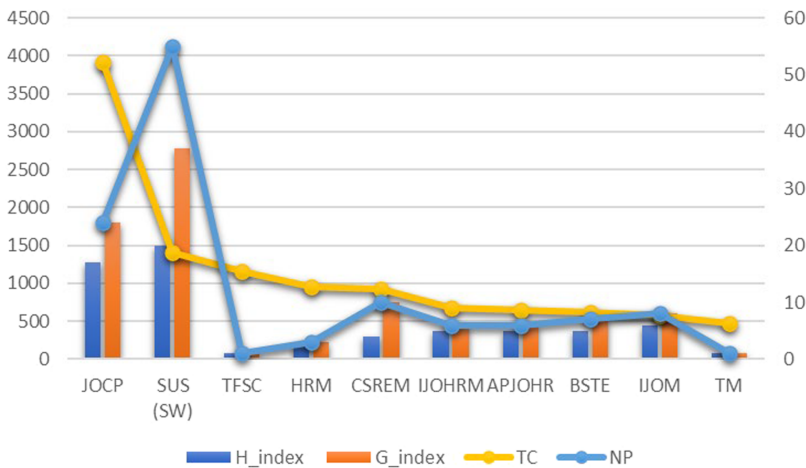


Figure 4. Top-10 cited sources. Source: Developed by authors

stand out at the top of this list. Additionally, in this specific field of study, the “*Journal of Cleaner Production*” stands out as the journal with the most citations (3,922).

Most influential articles

The most significant papers’ data were gathered from “Scopus and the Web of Science” databases. Table 3 presents the top ten contributing articles in GHRM, EHRM and SHRM. The following are the top contributing articles published by “Singh, Giudice, Chierici, and Graziano (2020), Dumont *et al.* (2017) and Saeed *et al.* (2019)” with total citations of 1,155, 835 and 572, respectively, in the areas of green transformational leadership, pro-environmental behavior, and green behavior. To improve environmental performance, Singh *et al.* (2020) observed how GHRM mediates the relationship between “green transformational leadership and green innovation.” The outcome of GHRM on ecological behavior in the workplace was examined by Dumont *et al.* (2017). They found that a person’s green values and psychological green atmosphere acted as moderators. Using environmental knowledge as a mediator and pro-

Table 3. Top-cited articles

Authors and PY	Title	Journal	TC
Singh <i>et al.</i> (2020)	“Green innovation and environmental performance: the role of green transformational leadership and green human resource management”	“ <i>Technological Forecasting and Social Change</i> ”	1,155
Dumont <i>et al.</i> (2017)	“Effects of green HRM practices on employee workplace green behaviour: the role of psychological green climate and employee green values”	“ <i>Human Resource Management</i> ”	835
Saeed <i>et al.</i> (2019)	“Promoting employee’s pro-environmental behaviour through green human resource management practices”	“ <i>Corporate Social Responsibility and Environmental Management</i> ”	572
Tang, Chen, Jiang, Paillé, and Jia (2018)	“Green human resource management practices: scale development and validity”	“ <i>Asia Pacific Journal of Human Resources</i> ”	549
Zaid, Jaaron, and Bon (2018)	“The impact of green human resource management and green supply chain management practices on sustainable performance: an empirical study”	“ <i>Journal of Cleaner Production</i> ”	506
Pham, Tučková, and Jabbour (2019)	“Greening the hospitality industry: How do green human resource management practices influence organizational citizenship behaviour in hotels? A mixed-methods study”	“ <i>Tourism Management</i> ”	479
Masri and Jaaron (2017)	“Assessing green human resources management practices in Palestinian manufacturing context: an empirical study”	“ <i>Journal of Cleaner Production</i> ”	409
Yong <i>et al.</i> (2020)	“Pathways towards sustainability in manufacturing organizations: empirical evidence on the role of green human resource management”	“ <i>Business Strategy and the Environment</i> ”	409
Mousa and Othman (2020)	“The impact of green human resource management practices on sustainable performance in healthcare organisations: a conceptual framework”	“ <i>Journal of Cleaner Production</i> ”	406
Guerci <i>et al.</i> (2016a)	“Translating stakeholder pressures into environmental performance – the mediating role of green HRM practices”	“ <i>International Journal of Human Resource Management</i> ”	347

environmental emotional capital as a moderator, [Saeed et al. \(2019\)](#) examined the impact of green HR performs on workers' pro-environmental behavior.

Most influential authors

[Table 4](#) and [Figure 5](#) display the top contributing author citation analysis highlight key contributors to the GHRM, EHRM and SHRM address, with Singh *et al.* emerging as a leading influence, likely shaping frameworks integrating HRM and sustainability. According to Jaaron and Chiappetta, GHRM is an interdisciplinary approach that helps to connect with organizational transformation and operations. With the greater number of articles, Yusliza stands out with a significant contribution to many sides of GHRM. Khan and Paille concentrate on staff involvement in sustainable practices and environmental responsibility. Afsar probably looks at motivation and leadership as factors that influence green behavior in businesses. Regarding sustainability, Guerci adds to institutional and policy viewpoints (RQ2 was addressed).

Prominent countries based on citation impact

The contributions of authors about sustainable environments from different countries show how many academicians and scholars have been interested in the scope of GHRM, EHRM and SHRM. [Table 5](#) and [Figure 6](#) display the top ten contributing countries. China, Pakistan and Malaysia are the top three countries in terms of citations, with 2,519, 1,897 and 1,673,

Table 4. Top-cited authors

Author	TC	NP
Singh S <i>et al.</i>	1,535	5
Ramayah T	969	4
Jaaron A	915	2
Chiappetta J C	888	2
Yusliza M	881	8
Khan I	861	2
Dumont J <i>et al.</i>	835	1
Paille P	677	4
Afsar B	643	2
Guerci M	631	2

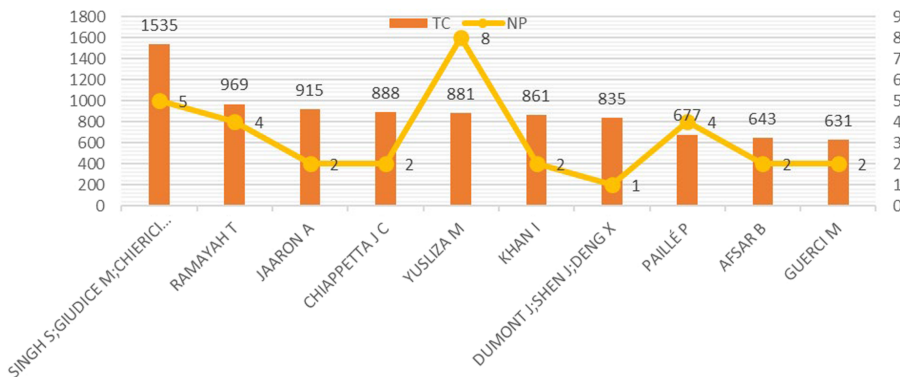
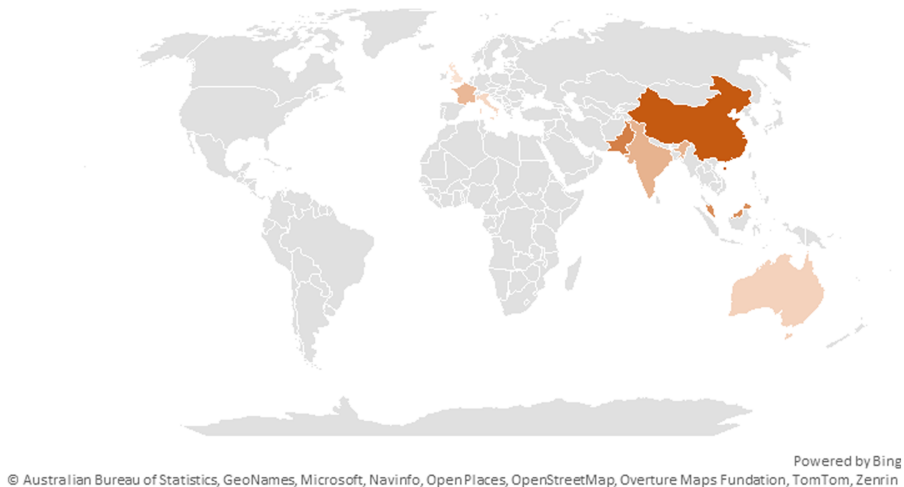


Figure 5. Most influential authors based on citations score. Source: Developed by authors

Table 5. Top countries based on citation scores

Country	TC	NP
China	2,519	34
Pakistan	1,897	41
Malaysia	1,673	70
India	1,085	77
France	996	7
Australia	574	17
Italy	482	6
Qatar	360	6
UK	310	16
Korea	272	4

**Figure 6.** Prominent countries based on citations. Source: Developed by authors with the help of Biblioshiny

respectively. According to the data, many developed nations are engaged in this field, whereas emerging nations like Malaysia and India have a comparatively large number of publications.

Authors' and countries' collaboration

The study of the collaboration network [Figures 7 and 8](#) reveals the existence of strong global research connections, with Malaysia ranked first in betweenness and PageRank. It portrays its centrality in international HRM research. Considerable connectedness is also observed in Pakistan and China, suggesting their increasing power in long-term HRM partnerships. European nations like Hungary and the Czech Republic form a peripheral second cluster that concentrates on regional research developments. With the incorporation of the United Arab Emirates, Saudi Arabia and Egypt, it demonstrates that the participation of the Middle East in HRM research with a sustainability focus is growing. Even though African countries like Ghana and Kenya are poorly connected, their inclusion marks a step towards increased global participation in HRM research. The author collaboration network reveals important contributors to sustainable HRM research, with Ramayah T being the one with the highest betweenness and closeness, resulting in him being the main actor in knowledge transfer. Yusliza M and Mughal Y also collaborate strongly, which implies their powerful position on

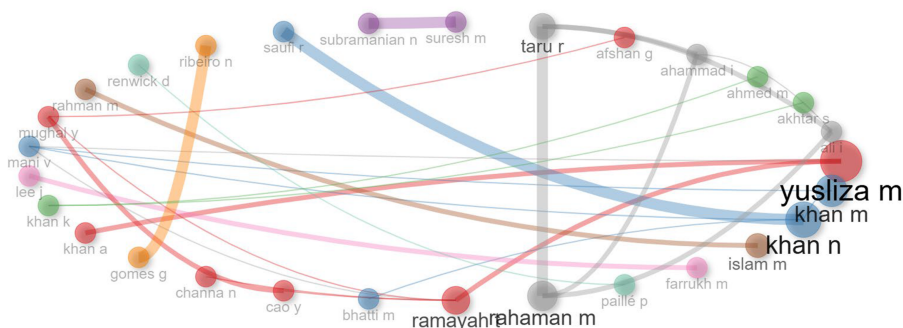


Figure 7. Authors' collaboration. Source: Developed by authors with the help of Biblioshiny

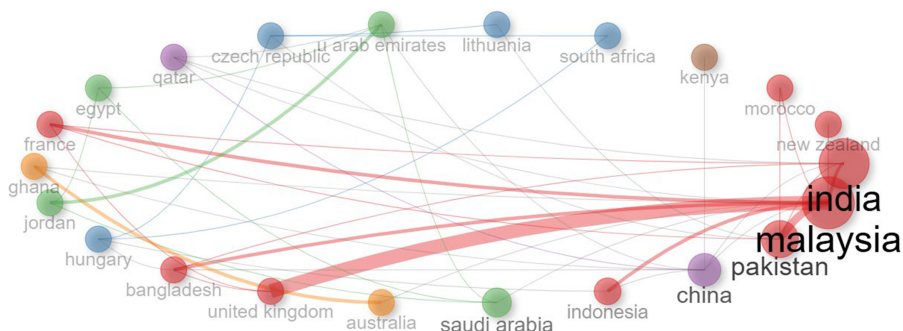


Figure 8. Countries' collaboration. Source: Developed by authors with the help of Biblioshiny

joint research activities. Another contributed hub of interdisciplinary and cross-institutional research is Cluster 2, which includes Khan N and Mani V. Subramanian N and Suresh M and Gomes G, which are dispersed clusters with high closeness, which means their expertise is niche, but integration on a broader level is missing. In detail, the network structure depicts a combination of powerful central pivots and active emerging researchers enhancing the HRM research domain.

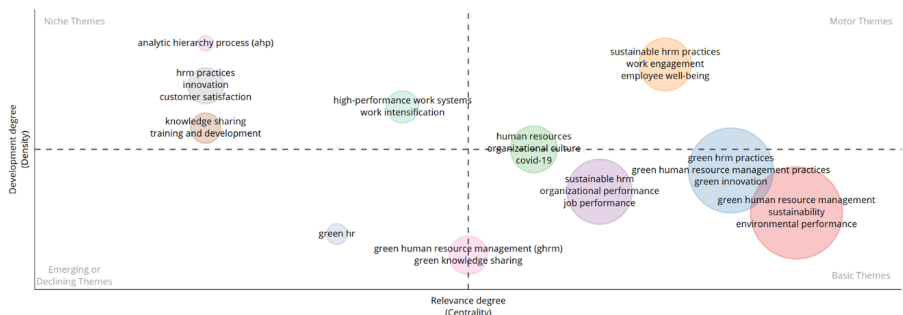


Figure 9. Thematic evolution. Source: Developed by authors with the help of Biblioshiny

Table 6. Thematic literature

Comprehensive themes	Sub-themes	Top-cited supportive literature
“Green HRM”	“Green human resource practices, green performance, employee green behavior, green organizational culture and green training and development”	Singh <i>et al.</i> (n.d.), Dumont <i>et al.</i> (2017)
“Environmental HRM”	“Environmental performance, environmental sustainability, environmental knowledge and environmental management system”	Guerci <i>et al.</i> (2016a), Kim <i>et al.</i> (2019)
“Sustainable HRM”	“Sustainable HRM practices, employee well-being, organizational commitment, employee empowerment, HRM and innovation”	Mousa and Othman (2020), Zaid <i>et al.</i> (2018)

Thematic structure

The thematic map in Figure 9 and Table 6 expresses the concept of GHRM, the focus and major themes and areas of interest within GHRM and related areas of study. The major theme, GHRM, includes green human performance, training and other HR practices, focusing on the infusion of an enterprise’s culture with a green philosophy. EHRM is the practice of HR that combines the need for environmental protection and performance. It is focused on improving knowledge and practice to mitigate the environmental impact of business (RQ3 Addressed). The theme of SHRM highlights the contribution of HR practices to the employees’ well-being and commitment and empowers them in the framework of the achievement of the company’s HR sustainability goals. Lastly, the HRM and innovation theme covers changes and advancement in leadership and permission-based strategies in green management, thus promoting the competitiveness of the organization.

AKS framework (authors, keyword and sources):

These three fields of a path diagram in Figure 10 show how authors (AU) relate to their work published on research topics and sources (SO) provided to them (DE). For example, Khan S and Paille P are active contributors to “green human resource management” and “sustainability” in journals like “Sustainability Switzerland” and “The Journal of Cleaner Production.” Important themes such as “green HRM practices” and “environmental performance” are currently central to research as the sustainable development emphasis. The diagram also shows the wide range of journal publications that include collaborations with

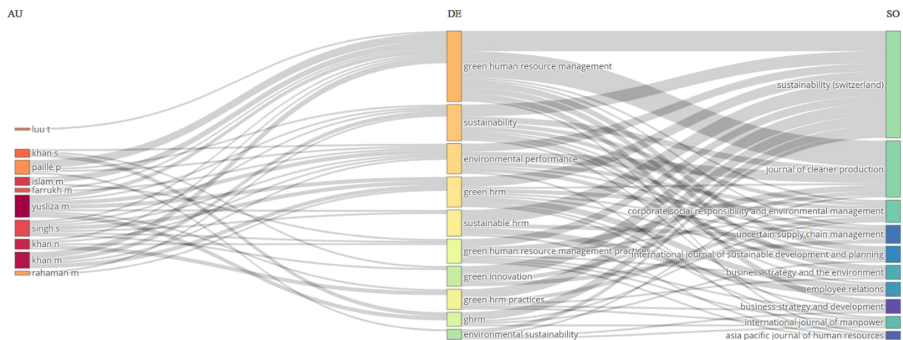


Figure 10. Three-field path. Source: Developed by authors with the help of Biblioshiny

Table 8. Future research directions

Key area focus	Objectives	Future research questions
Green HRM	To explore the integration of green HR practices within organizations and their impact on sustainability	RQ1. How can green HR practices be effectively implemented in diverse industries to enhance sustainability? RQ2. What are the challenges faced by organizations in adopting green HRM practices, and how can they be overcome?
Environmental HRM	To examine the role of environmental HRM in fostering green organizational behavior	RQ1. How do environmental HRM practices influence employee behavior and organizational environmental performance? RQ2. What strategies can HR departments employ to align environmental sustainability with organizational culture and values?
Sustainable human resource management (SHRM)	To analyze the connection between SHRM practices and organizational sustainability outcomes	RQ1. How do sustainable HRM practices affect employee engagement and long-term organizational performance? RQ2. What is the association between sustainable HRM and administrative culture in promoting a sustainability-driven workforce?
HRM and innovation	To examine the role of innovation in shaping green HR practices and enhancing sustainability initiatives	RQ1. What innovative HR practices can organizations adopt to further sustainability and environmental management goals? RQ2. How can HRM contribute to fostering green innovation in industries that are not traditionally focused on sustainability?

conceptually rather underdeveloped, particularly about governance, monitoring and institutionalization, which indicates a rather obvious research gap. Indeed, there would be a room for studies exploring the embedding of environmental HR strategies within organizational structures, as well as contextual regulatory factors (Anlesinya & Susomrith, 2020; Guerci *et al.*, 2016b). Finally, it is essential that in further research on sustainable HRM, the connection between sustainable HR systems and sustainable organizational outcomes such as resilience, as well as employee well-being and sustainable performance, is further established, while at the same time, exploring other underresearched areas of operation within which sustainability issues might affect the application of SHRM approaches (Mousa & Othman, 2020; Liang & Li, 2025)

Managerial implications

Green performance

The findings have shown that environmentally aligned recruitment, training, performance appraisal and reward systems are significant in shaping employee-level pro-environmental behavior (Renwick *et al.*, 2013; Dumont *et al.*, 2017). The incorporation of environmental objectives within the performance management system provides organizations with a better opportunity to link individual employee actions with wider sustainability objectives and achieve improved green performance outcomes (Singh *et al.*, n.d.)

Environmental sustainability

From the environmental HRM perspective, the review emphasizes embedding the dimension of sustainability-oriented practices within organizational policies, governance mechanisms and performance controls. Evidence from bibliometric analysis shows that dependence on individual behavior alone does not guarantee long-term environmental sustainability; therefore, there is a need for institutional mechanisms to formalize and sustain green HR practices in organizations.

Employee empowerment

The results reinforce the importance of employee empowerment, which is another key element in sustainable HRM. Employee empowerment, through involvement, engagement and access to environmental knowledge, would encourage employees' commitment to effective sustainability practices. This would ultimately translate into creative solutions (Mousa & Othman, 2020; Kim *et al.*, 2019). These would lead to the full integration of sustainability into daily human resource management practices.

Limitations

The research has certain constraints. First off, this is an integrative study, and even though we tried to be thorough and objective, further empirical study would be needed to validate the conclusion. We may have ignored things with different keywords in our analysis because of the keyword-based search. Most of the research in our data was carried out in industrialized nations. Due to variations in the factors driving consumption, additional research from developing countries might have produced different findings. Our study's conclusions may be limited due to the use of only WoS and Scopus for data extraction. Future studies should consider adding files, such as Google Scholar, in organized literature reviews, which aligns with mainstream thinking.

Conclusion

The core objective of this article is to provide a progressive assessment of the literature on green, environmental and sustainable human resource approaches. By examining and evaluating 388 articles on the PRISMA framework, we produced a comprehensive map of the literature. We then developed a "summary statistic, year-wise publications with their citations, top-cited source productions with matrices, top-cited articles, most influential authors and countries based on the citations scores, authors and countries collaboration, thematic structure, AKS framework and keyword co-occurrence." Findings reveal that China is the most productive country in accountable consumption research, followed by Pakistan, Malaysia and India. A keyword analysis chart demonstrates the study pattern in this research domain. We next used thematic analysis to identify the elements that promote GHRM, EHRM and SHRM by studying the prevailing literature standard and categorizing the most emergent research themes in this research area. The practical implications of this study are anchored in the identification of three critical drivers of HRM practices: green performance, environmental sustainability and employee empowerment. Green performance involves integrating environmental objectives into employee performance appraisals, incentivizing eco-friendly behavior and aligning individual goals with broader sustainability targets. Environmental sustainability in HRM reflects an organization's commitment to reducing its ecological footprint. This includes adopting green policies in recruitment, training and workplace operations, such as encouraging paperless processes, energy-efficient workspaces and sustainability-focused employee training programs. Employee empowerment ensures that employees are actively engaged and given the autonomy and resources to participate in green initiatives. Empowered employees tend to be more committed to sustainability efforts and contribute innovative solutions toward environmental goals. This comprehensive integrative

review provides thematic, methodological and contextual information for future research agendas. This is supported by the fact that consumption is a critical socioeconomic component with direct and indirect effects on all aspects of human existence and the environment. Consumption is a critical socioeconomic driver that directly shapes environmental sustainability and, by extension, HRM practices. According to the United Nations Environment Programme, nearly two-thirds of global greenhouse gas emissions are linked to household consumption, highlighting the systemic impact of consumer behavior. As public awareness of environmental issues grows, organizations face increasing pressure to reflect sustainable values not only in production but also in workforce management. This has led companies like Patagonia and Unilever to embed sustainability into HRM through green performance metrics, employee engagement and eco-conscious organizational cultures. Thus, consumption patterns are not merely external forces; they influence internal HRM strategies, employer branding and long-term organizational resilience.

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