

## **EXPLORING THE CORNERSTONES OF GREEN, SUSTAINABLE, AND SOCIALLY RESPONSIBLE HUMAN RESOURCE MANAGEMENT**

### **Citation**

Murillo-Ramos, L., Huertas-Valdivia, I. and García-Muiña, F.E. (2023), "Exploring the cornerstones of green, sustainable and socially responsible human resource management", *International Journal of Manpower*, Vol. 44 No. 3, pp. 524-542. <https://doi.org/10.1108/IJM-12-2021-0696>

# **EXPLORING THE CORNERSTONES OF GREEN, SUSTAINABLE, AND SOCIALLY RESPONSIBLE HUMAN RESOURCE MANAGEMENT**

## **Keywords:**

Science mapping; CSR-HRM; GHRM; Sustainable HRM and SR-HRM

Abstract (250 words):

- **Purpose:** To delineate the fast-growing path of HRM research with a sustainable orientation and resolve confusion over the differences and interdependences of the various approaches that have emerged: green human resource management (GHRM), sustainable human resource management (Sustainable HRM), and socially responsible human resource management (SR-HRM).
- **Design/methodology/approach:** Bibliometrics and science mapping were used to analyze the field's conceptual structure based on 587 related documents extracted from the ISI Web of Science database. Co-word analysis with SciMAT software enabled us to map the main themes studied and identify their evolution, importance, and relevance.
- **Findings:** SR-HRM is the least-developed of the three approaches analyzed and has been overlooked by the journals that publish the most work in the field of HR. We identify a lack of sustainability-related HRM studies on higher education and an ongoing need both to explore the role of culture in GHRM implementation and to explain further the potential non-green behavioral outcomes that can result from its use.
- **Originality:** Explores in detail the interrelations among various emerging sustainable human resource approaches and subtopics derived from them to reveal hotspots, dilemmas, paradoxes, and research gaps.
- **Practical implications:** Demonstrates how human resource factors are key to managing challenges such as aging workforce, unstable employment relationships, implementation of green supply chain management, and Industry 4.0.

## 1. Introduction

The *Sustainable Development Goals Report 2020* states that significant efforts are still needed to reduce environmental degradation and eliminate or mitigate persistent inequalities (United Nations, 2020). Various groups of stakeholders are demanding that organizations show greater commitment to environmental management (EM) and corporate sustainability issues (Kramar, 2014). Meanwhile, competition has increased sharply in the last decade due to innovation disruption and globalization, causing changes in organizational structure and employment relations (Cugueró-Escofet *et al.*, 2019).

In this context, the functional area of human resource management (HRM) has gained strategic importance for organizations moving towards more sustainable business models. Three HRM approaches have been attracting researchers' and practitioners' attention in the past decade given their increased sustainability orientation. Sustainable HRM, Green Human Resource Management (GHRM), and Socially Responsible Human Resource Management (SR-HRM) are currently seen as key to solving crucial organizational challenges.

Firstly, Kramar (2014) argues that, despite lack of consensus regarding the definition of Sustainable HRM, the term could be defined as the bundle of structured or emerging human resource strategies and activities designed to enable attainment of economic, social, and ecological goals (in accordance with the triple bottom line), while simultaneously reproducing the human resource base in the long run. The notion of *sustainable work systems* and the Sustainable HRM approach overlap in their shared interest in employees' capability regeneration, health, and growth (Ehnert and Harry, 2012). For authors like Stankevičiute *et al.* (2018), the strategy of prompting sustainability of the HRM system itself enhances organizations' continuity, as organizations depend on highly talented employees.

As to GHRM, argue that the approach belongs to the broader category Sustainable HRM. GHRM builds on the application of EM fundamentals and postulates to HRM processes, practices, and systems (Renwick *et al.*, 2013) and is thus associated with construction of green abilities, enhancement of workforce motivation through green performance appraisals and reward programs, and initiatives that promote employee engagement in green affairs (Dumont *et al.*, 2017). The main objective of the practices and policies embedded in GHRM is to develop a green workforce to benefit the organization and its individuals, the natural environment, and society (Ehnert, 2014). To guarantee a

successful shift of organizational behavior towards efficient use of resources, Muster and Schrader (2011) introduced the concept of *green work-life balance*, noting that the scope of GHRM should extend beyond workplace boundaries to support adoption of pro-environmental behaviors in the domain of workers. Although GHRM research is still in its infancy, it is a useful tool for green management, as it nurtures more efficient processes, proactive green behaviors, and waste reduction (Hameed *et al.*, 2020).

Orlitzky and Swanson (2006) coined the term SR-HRM, opening a new path within the Corporate Social Responsibility (CSR) framework. Shen and Benson (2016) define SR-HRM as *CSR directed at employees*, differentiating it from HRM in general because it attends to the interests of external stakeholders. For Shen and Zhu (2011), the concept has three dimensions: labor law-related legal compliance HRM, employee-oriented HRM, and general CSR facilitation HRM. For them, SR-HRM includes not only the need to follow employment-related legal requirements and standards but also the application of employee-centric HRM practices and policies to address their professional and personal demands for self-development and achieve employee engagement in external CSR projects (Newman *et al.*, 2016). To date, literature on the CSR–HRM nexus has adopted two perspectives: HRM as part of CSR and CSR as part of HRM. The former perspective views “good” HRM as a feature of CSR, while simultaneously considering CSR as an indispensable mechanism for “effective” HRM (Iqbal *et al.*, 2019). As Barrena-Martínez *et al.* (2019) asserted, SR-HRM aims to embrace a social focus on managing people, and because SR-HRM practices and policies include creating value for workers, they increase workers’ organizational commitment (Shen and Zhu, 2011).

These sustainability-oriented constructs related to HRM, came to light as a consequence of the multidimensional nature of the Sustainable HRM construct (Kainzbauer and Rungruang, 2019). This alternative approach to HRM entails the establishment of broader goals for HRM by recognizing the complexities of workplace dynamics and by explicitly acknowledging the need to mitigate the negative effects of HRM practices (Anlesinya and Susomrith, 2020). Meanwhile, GHRM and SR-HRM are considered key Sustainable HRM types and are going to reflect both the ecological and social perspective of Sustainable HRM respectively (Piwowar-Sulej, 2021). Kramar (2014, p. 7) claim that the literature on Sustainable HRM “is piecemeal, diverse and fraught with difficulties”. Thus, Piwowar-Sulej (2021) asserts that contemplating the studies on general Sustainable HRM

and its key types GHRM and SR-HRM in literature reviews, following the example of Anlesinya and Susomrith (2020), is the trend so as to cover the different writings on Sustainable HRM that differ in terms of the emphasis given to particular internal and external outcomes.

Recent literature reviews show interest in systematizing and integrating all available literature on these topics. For example, reviewing 74 papers, Pham *et al.* (2020) drew on previous studies to identify and define GHRM practices. These authors also classified the main related topics into ten categories (based on national contexts, continents, research methods, industries/economic sectors, type of practices, etc.) and provided an interesting roadmap to future studies. Because their classification was conducted without the assistance of bibliometric software, they analyzed only a small sample of bibliographic data—an approach that Snyder (2019) argues may affect the rigor and depth of their review.

A small group of studies has employed scientific mapping techniques to display the intellectual and conceptual structures of emerging trends in HRM research. Table I displays the main features of this research. These works present a series of deficiencies that require attention. First, in the work of Khan and Muktar (2020) the generalizability of the results is affected by focusing on a specific approach to Sustainable HRM. Second, in the research by Santana and Lopez-Cabrales (2019) and Santana *et al.* (2020), the selection of documents was based exclusively on certain subject categories. Finally, Kainzbauer and Rungruang (2019) and Farrukh *et al.* (2021), acknowledge that their work focuses on scanning the metadata associated with the academic field under study, without actually examining the specific results of the studies analyzed, which prevents reaching a deep understanding of the field of knowledge.

Table I. Previous papers that use science mapping tools to assess sustainability-oriented HRM literature

Reference	Database	Sample <sup>a</sup>	Timeframe	Software	Analysis	Acknowledgements
(Santana and Lopez-Cabrales, 2019)	WoS	111	1997-2018	SciMAT	Word co-occurrence	Only include articles and reviews Search limited to certain disciplinary categories
(Kainzbauer and Rungtuan, 2019)	Scopus	475	1982-2019	VOSviewer	Author co-citation Document co-citation Word co-occurrence	Focus on Sustainable HRM studies
(Herrera and de las Heras-Rosas, 2020)	WoS	314	1993-2019	SciMAT	Word co-occurrence	Focus on SR-HRM and CSR-HRM interaction
(Santana <i>et al.</i> , 2020)	WoS	194	2006-2019	SciMAT	Word co-occurrence Co-citation	Studies on instruments for measuring CSR-HRM link. Search limited to certain disciplinary categories.
(Khan and Muktar, 2020)	Scopus	147	2008-2020	VOSviewer	Word co-occurrence Co-citation	Focus on GHRM research
(Farrukh <i>et al.</i> , 2021)	Scopus	242	2008-2020	VOSviewer	Word co-occurrence Bibliographic coupling	Focus on GHRM research

<sup>a</sup> Number of documents included in the analysis

In view of these limitations, and to respond to the call made by Chiappetta Jabbour and Renwick (2020), this research aims to work on the total integration of the different approaches that are at the intersection of sustainability and HRM to give direction, structure and shape to the research domain as it develops and advances. Furthermore, due to the multidisciplinary approach given to this subject, the search has not been limited to certain subject categories. Similarly, this bibliometric analysis will not only provide a synthesis of knowledge production patterns but will also carefully analyze the publications that are linked to the results to provide a more solid basis about the theoretical foundations of Sustainable HRM and its variants Green HRM and SR-HRM, as well as research trends and future lines of research. It did so by addressing the following research questions:

RQ1: Which authors, countries, and journals have contributed most significantly to developing Sustainable HRM and its concurring concepts of GHRM and SR-HRM?

RQ2: What specific research subjects are related to Sustainable HRM and its different approaches -GHRM and SR-HRM-, and how these ones have evolved in recent years?

RQ3: What are the promising topics in the scholarly discipline of Sustainable HRM and its subtypes -GHRM and SR-HRM-?

Our paper contributes to the HRM literature in several ways. First, its descriptive analysis highlights indicators of publication activity in the field, guiding scholars to the most relevant literature. Second, it provides a schema for visualizing the evolution of this research area while deciphering which topics have contributed most to its development and which require further research attention. This review thus helps to guide scholars' research towards underexplored topics and emerging areas.

This paper is structured as follows. The method section outlines the research protocol, software, data examination, and co-word analysis technique. Then, the results section elaborates on the publication activity of this research field, identifying its patterns, and the performance of authors, countries and journals in relation to the different Sustainable HRM approaches analyzed. Afterwards, related topics and salient themes associated this knowledge field are identified, and an agenda for future research is presented. Finally, the conclusion illustrates issues to be resolved, and highlights the study's implications and current limitations.

## **2. Methods**

The systematic literature reviews supported by bibliometric methods, such as the science mapping used in this study, are useful in providing a global overview of the body of knowledge on a given field of inquiry. Unlike traditional literature reviews, a specific procedure is followed throughout the review process to obtain the most accurate results and minimize subjectivity bias (Pulsiri and Vatananan-Thesenvitz, 2018). The science mapping analysis tool SciMAT was chosen to perform co-occurrence keyword analysis, as it provides a *robust pre-processing option* to purify the raw bibliographic data. This methodological tool also enables *longitudinal analysis* within specified periods and thus examination of the evolution of themes in a particular interest area. Moreover, this tool incorporates *multiple bibliometric measures* to execute performance analysis of the thematic areas detected (Cobo *et al.*, 2011).

### *2.1. Database selection and research protocol*

We drew the bibliographic data used as input for this bibliometric and scientometric analysis from the Web of Science (WoS) database. WoS's coverage makes it feasible for most bibliometric studies (Zupic and Čater, 2015). Simultaneous use of other databases would have posed a methodological drawback for some phases of our research, as some literature metrics (e.g., impact indexes) differ significantly among the various databases, causing problems of interpretation (Herrera and de las Heras-Rosas, 2020).

To develop a wide-ranging set of articles for review, the search protocol used the search query ("GHRM" OR "green HRM" OR "green human resource management" OR "green human resource\*" OR "SR-HRM" OR "socially responsible human resource management" OR "Sustainable HRM" OR "sustainable human resource management" OR "sustainable human resourc\*" OR "CSR-HRM"). The search retrieved 587 documents (including journal articles, books, book chapters, and conference papers) within the timeframe 2000-November 2021.

### *2.2. Data pre-processing*

Like Kainzbauer and Rungruang (2019), we used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement to ensure transparent reporting of the inclusion and exclusion criteria employed to obtain the final bibliographic sample (see figure 1). The search yielded 587 documents, which were reviewed carefully by the research team (title and abstract, reading whole document when necessary) to check for duplicates and unrelated entries. We eliminated documents included erroneously in the search results because they contained keywords that were spelled the same but had different meanings (in science, the acronym GHRM refers to other concepts, such as Granular Hybrid Reactive Materials, Gene and Hormone Regulatory Matrices, etc.) or because the keywords used in the search appeared as part of the author's details. At the end of this step, we had obtained 569 articles for the bibliometric analysis.



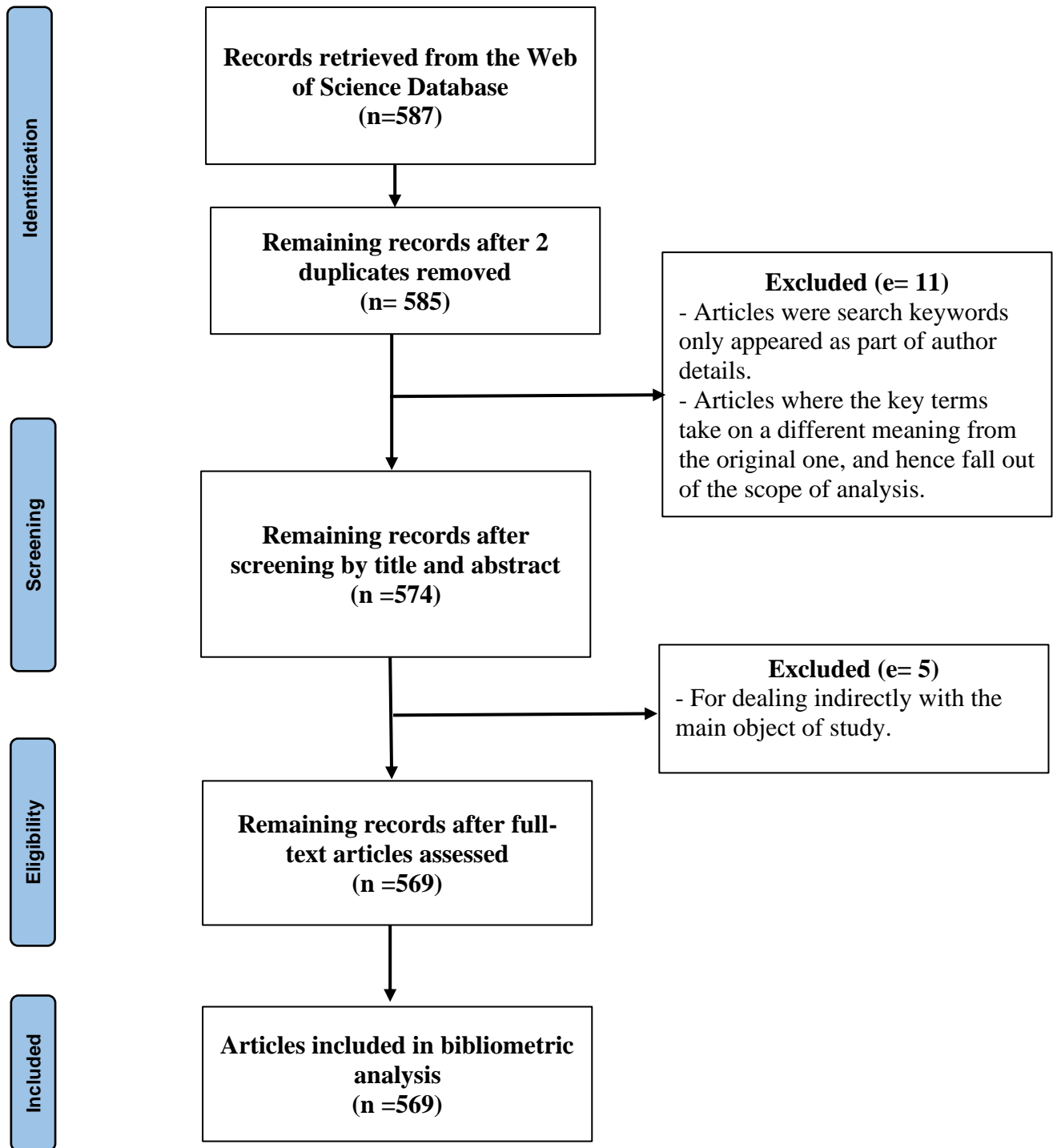


Figure 1. PRISMA flow diagram (n= retained; e= excluded)

The bibliometric software SciMAT has powerful pre-processing utility that enables researchers to purify raw bibliographic data. Authors' names were reviewed to correct duplicate and misspelt names, which may cause misinterpretations regarding the real volume of their scientific contributions (e.g., Renwick, DSW and Renwick, DWS). The document's publication year was introduced manually where this information was missing. The keywords dataset was purified following Cobo *et al.* (2018).

### 2.3. Co-word analysis

Co-word analysis enables us to analyze the conceptual aspects of a discipline. Co-occurrence of terms establishes a series of associations among the nodes or keywords that appear simultaneously in the documents analyzed, forming *thematic networks* or *clusters*. The sample articles' keywords were filtered using the following criteria: 1) grouping synonyms (e.g., “CSR-HRM link,” “CSR-HRM relationship”) and derived terms (e.g., “Companies,” “Organizations”), 2) standardization of terms in their singular form (e.g., “behavior,” “behaviors”), and 3) elimination of terms considered overly general, that is, that did not provide sufficient information (e.g., “resources,” “manager,” “model,” “systems”). After this filtering process, a sample of 1845 keywords remained.

Three periods were then established to perform longitudinal co-word analysis—2001-2013, 2014-2017, and 2018-2021. The periods were determined following guidelines by Herrera and de las Heras-Rosas (2020, p.4), who recommend obtaining “a compromise between the length of the period and the number of publications.” The threshold for minimum frequency of two co-occurrences was established and the equivalence index then used to measure similarity and normalize the network. The simple-center clustering algorithm was used to display the thematic networks (Cobo *et al.*, 2011).

## 3. Results

### 3.1. Publication activity (RQ1)

In this subsection, we provide information on the bibliometric attributes relating to the Sustainable HRM research and the subfields GHRM and SR-HRM. Particularly, the focus is on informing about the publication trend, most prolific authors, top publication countries and the leading journals in this knowledge field.

As Figure 2 shows, the volume of annual publications on the three HRM approaches studied here has increased remarkably in the last decade. Despite the small number of studies published during the first period (2001-2013), the period contains seminal works and important contributions that determine development of this knowledge field. First, *Ehnert's Sustainable Human Resource Management* (2009) described the practical

relevance of Sustainable HRM to corporate success and introduced paradox theory as the analytical framework for examining this emerging human resource strategy. Shen and Zhu (2011) then introduced the topic of SR-HRM and its effects on employee commitment to the organization.

This group of studies also includes two noteworthy special issues. The first, by the *German Journal of Human Resource Management* (Jackson *et al.*, 2011), constituted a milestone for development of the GHRM agenda. The second, by the *Management Revue* (Ehnert and Harry, 2012), sought to provide new insights into the role of Sustainable HRM as a useful tool for attaining corporate sustainability.

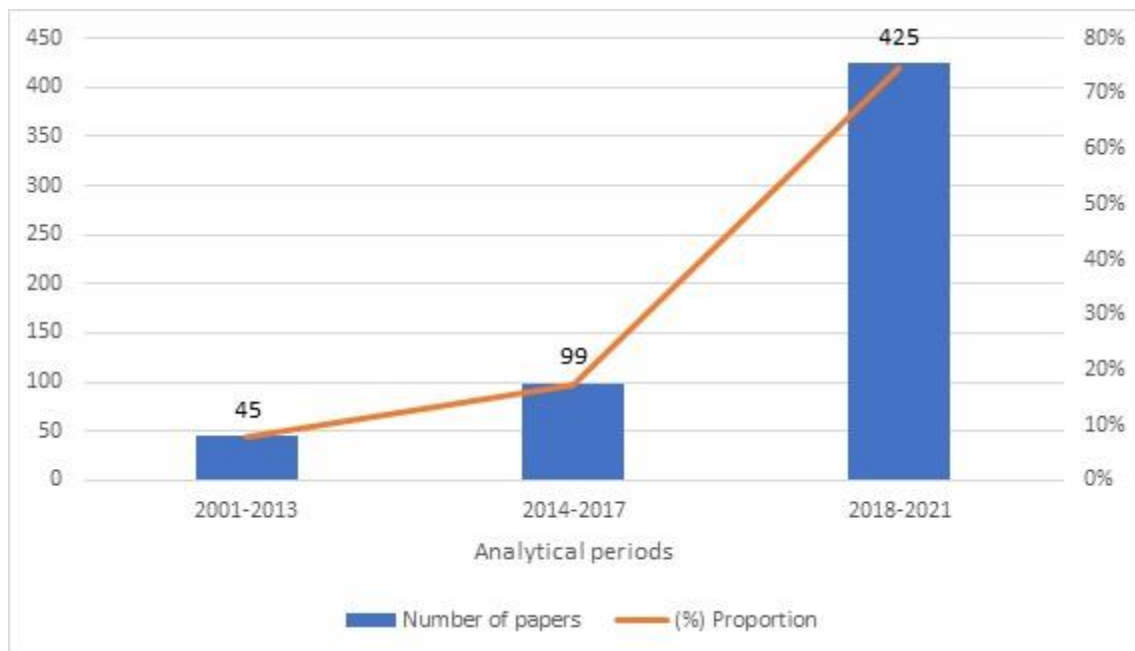


Figure 2. Evolution of HRM-sustainability related publications

From 2015 onwards, scholarly production on Sustainable HRM, GHRM, and SR-HRM increased gradually. This fact was corroborated by (Herrera and de las Heras-Rosas, 2020), who also establish that this was the most productive period, where new discussions proliferate regarding how to adequately measure the impact of CSR, HRM and sustainability on business practices. Al-Ghazali and Afsar (2020) attribute this growth to the emergence of new international policies and standards oriented to achieving sustainable development (SD) and thus shaping the institutional framework in which businesses operate. Meanwhile, (Farrukh *et al.*, 2021) stated that the rapid increase in this debate is because of what the current business context requires, and the need of

researchers to explore how environmental sustainability can be achieved by promoting pro-environmental behavior and actions of the human being. The research focus on HRM as a means to attaining sustainability did not stabilize but continued to increase dramatically over the last period (2018-2021), signaling its contemporary nature as a research area under construction.

Table II shows the main contributors to development of this scientific area, their associated H-index, and an entry indicating their most-cited article (to November 2021). According to the list retrieved, the vast majority of the most published authors have achieved their highest number of citations for articles with a GHRM focus.

Table II. Most prolific authors on HRM approaches to sustainability

Author	Publications*	H-index (WoS)	Author's most-cited paper*	Citations*
Jabbour, CJC (Charbel Jose Chiappetta)	27	18	'State-of-the-art and future directions for green human resource management: Introduction to the special issue' (Jackson <i>et al.</i> , 2011)	224
Yusliza, MY (Mohd-Yusoff)	13	8	'Nexus between green intellectual capital and green human resource management' (Yong <i>et al.</i> , 2019)	75
Ehnert, I (Ina)	12	4	'Reporting on sustainability and HRM: A comparative study of sustainability reporting practices by the world's largest companies' (Ehnert <i>et al.</i> , 2016)	124
Pham, NT (Nhat Tan)	9	4	'Greening the hospitality industry: How do green human resource management practices influence organizational citizenship behavior in hotels? A mixed-methods study' (Pham <i>et al.</i> , 2019)	110
Guerci, M (Marco)	8	7	'Translating stakeholder pressures into environmental performance: The mediating role of green HRM practices' (Guerci <i>et al.</i> , 2016)	103
Lopez-Fernandez, M (Macarena)	8	6	'Towards a configuration of socially responsible human resource management policies and practices: Findings from an academic consensus' (Barrena-Martínez <i>et al.</i> , 2019)	34
Romero-Fernandez, PM (Pedro Miguel)	8	6	'Towards a configuration of socially responsible human resource management policies and practices: Findings from an academic consensus' (Barrena-Martínez <i>et al.</i> , 2019)	34
Renwick DWS (Douglas William Scott)	8	5	'Green human resource management: A review and research agenda' (Renwick <i>et al.</i> , 2013)	444
Mariappannadar, S (Sugumar)	7	6	'Harm of efficiency oriented HRM practices on stakeholders: An ethical issue for sustainability' (Mariappannadar, 2012)	33
Ramayah T (Thurasamy)	7	5	'Nexus between green intellectual capital and green human resource management' (Yong <i>et al.</i> , 2019)	75
Stankeviciute, Z (Zivile)	7	3	'Designing sustainable HRM: The core characteristics of emerging field' (Stankeviciute and Savaneviciene, 2018)	22

Muller-Camen M (Michael)	6	6	'State-of-the-art and future directions for green human resource management: Introduction to the special issue' (Jackson <i>et al.</i> , 2011)	224
Shen J (Jie)	6	5	'Effects of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values' (Dumont <i>et al.</i> , 2017)	189
Tuckova Z (Zuzana)	6	3	'Greening the hospitality industry: How do green human resource management practices influence organizational citizenship behavior in hotels? A mixed-methods study' (Pham <i>et al.</i> , 2019)	110
Yong JY (Jing Yi)	6	5	'Nexus between green intellectual capital and green human resource management' (Yong <i>et al.</i> , 2019)	75

(Note: Data downloaded 2 November 2021)

Although publications came from over 74 nations and regions worldwide, the provenance of the sample articles leading the ranking is as follows: China (103), Australia (68), England (64), Malaysia (62), Pakistan (50), USA (48), India (44), France (39), and Brazil and Spain (29). These results are consistent with those obtained by Piwodar-Sulej (2021, p. 674), "apart from Australia and Asia - mainly western European countries are represented" in the list of regions with the most research activity on Sustainable HRM and its types. Most publications of the sample come from the Asia-Pacific region; this is due to the increasing challenges encountered in this area around sustainable growth, pollution, socially responsible programs and maintaining the balance between economy and society (Shen *et al.*, 2019). Besides, Ehnert *et al.* (2014, p. 339) argue that in "the European context HRM is more prone to long-term thinking, to a multiple stakeholder perspective and to extending the notion of organizational performance beyond the financial bottom line.", hence this geographical area will also support proliferation of this knowledge field.

Finally, in regarding journals' attention to this research area (see Table III), it is noted that the journals with the highest publication rate have more frequently published articles that adopt a GHRM or Sustainable HRM approach; SR-HRM orientation is underrepresented. In parallel, the great variety of publication sources in the sample, as well as their different orientations, attests to the multidisciplinary character of these research topics, which are analyzed from different perspectives and scholarly fields.

Table III. Predominant approach of top publication journals

Publication source	Total documents	(% of 589)	Predominant approach			Number of papers by period		
			GHRM	Sustainable HRM	SR-HRM	2001-2013	2014-2017	2018-2021
Sustainability	78	13	22	46	10	-	2	76
Journal of Cleaner Production	40	7	33	7	-	-	9	31
International Journal of Manpower	24	4	21	3	-	-	2	22
International Journal of Human Resource Management	18	3	11	3	4	2	12	4
Corporate Social Responsibility and Environmental Management	18	3	10	3	5	-	-	18
Journal of Business Ethics	15	3	4	6	5	1	2	12
Human Resource Management Review	12	2	-	9	3	-	2	10
Employee Relations	11	2	2	9	-	-	1	10
Business Strategy and the Environment	10	2	9	1	-	-	-	10
TOTAL (documents)	226	38	112	87	27	3	30	193

### 3.2. Research topic connections and evolution (RQ2)

Thematic areas were identified and their density (degree of development of the theme) and centrality (importance of a particular theme in developing the entire research area) calculated and used to build a strategic diagram that grouped the themes into four different categories. As described by Cobo *et al.* (2011), the motor themes of the specialty are those that show a powerful centrality and high density, and are externally linked to notions applied to other fields that are conceptually closely connected. Next, the second group is that of highly developed and isolated topics, these are only marginally important to the scientific field, because they are very targeted and outlying in nature. Thirdly, the basic and cross-sectional themes, are characterized by a strong centrality and low density, signaling their importance for a research field but the need for further development. Finally, the emerging or disappearing themes, can be distinguished because are underdeveloped and peripheral.

We provide graphical representation of this diagram for each period analyzed in order to examine the progress in this knowledge field (see Figures 3, 4, and 5). In these figures,

the size of the sphere around a keyword reflects the number of articles that include that term (Cobo *et al.*, 2018).

### *Subperiod 2001-2013*

The motor topic “*Sustainable HRM*” as stated by Ehnert and Harry (2012) reframes the HRM field from a sustainability standpoint, becoming a topic of significant substance that underpins HR involvement in accomplishing multiple sustainability dimensions simultaneously (economic, social, ecological and human sustainability). Nonetheless, these authors further assert, that past investigations of Sustainable HRM have frequently overlooked the consideration of all dimensions in parallel. This alternative HRM approach covers two important areas: the development and implementation of sustainable work and HRM systems, and second, its role in supporting the implementation of corporate sustainability strategies (Ehnert, 2014). Noteworthy in Sustainable HRM’s subnetwork is the concept’s relationship to “*health*” and “*stress*.” This approach recognizes the hidden side of HRM, and admits its potential to generate negative human, social and environmental impacts (Kramar, 2014). Therefore, special attention was paid to the proactive implementation of sustainable HRM strategies to mitigate the harms of negative externalities of HRM practices on stakeholders (Mariappanadar, 2012). According to Stankevičiute *et al.* (2018), Sustainable HRM can reduce work-related stress, work–family conflicts, and burnout. In this regard, to measure the harmful effects of HRM practices on stakeholders, from a Sustainable HRM perspective, a health harm of work scale was developed by (Mariappanadar, 2016).

The transversal topic “*environmental management*” is closely connected to “*GHRM*.” GHRM enables EM by aligning HRM practices such as training, performance management, recruitment and compensation with the company’s environmental aims. Thus, GHRM practices are critical to ensuring employees commitment to eco-friendly behavior at the workplace (Al-Ghazali and Afsar, 2020). We also detect a robust connection between “*environmental training*” and “*EM systems*”. When organizational change occurs, training activities are often one of the priorities within HRM to increase employee awareness and understanding of the organization's green values, as well as to provide employees with the knowledge, competencies and skills necessary for the successful deployment of EM objectives (Dumont *et al.*, 2017). Within this realm, there is a call for research that deals with obstacles to the success of environmental training

(Jackson *et al.*, 2011). In addition, attention is lacking with respect to careful evaluation of the overall effectiveness of these development initiatives (Renwick *et al.*, 2013).

The peripheral topic of “CSR” constitutes a useful approach to guiding companies through creation of value for their stakeholders (Iqbal *et al.*, 2019). Organizations are substantially implementing corporate social responsibility (CSR) initiatives, so as to build legitimacy, increase their reputation and improve long-term “*firm performance*” (Newman *et al.*, 2016). As noted by Sarvaiya *et al.* (2018), however, the link between the HRM and CSR functions is understudied, and there is a lack of clarity on the roles of HRM and the circumstances under which they can be strategic or operational in nature. (Sarvaiya *et al.*, 2018). From a “*strategic management*” viewpoint, resource-based perspectives increased appreciation of the importance of internal factors, especially people, to a company’s success (Ehnert, 2009). In this context, HR involvement in CSR can lead to better employee wellbeing through CSR-based HR strategies, smoother shift to a CSR culture, and greater employee involvement in externally driven CSR projects (Sarvaiya *et al.*, 2018). Moreover, potential employees were also observed to seek other qualities embedded in socially responsible corporations, such as better “*work–life balance*”. Hence, this is considered one of the eight specific socially responsible HR policies defined by Barrena-Martinez *et al.*, (2019), which embed compliance with human, ethical and social concerns in HRM.



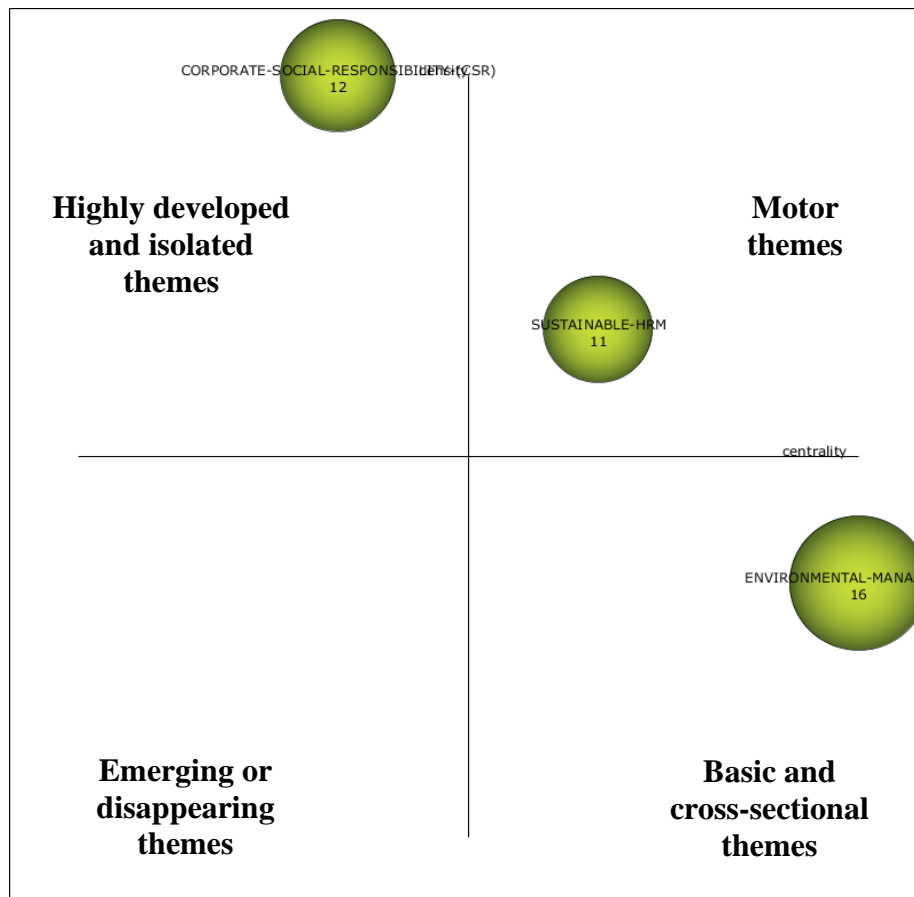


Figure 3. Strategic diagram for 2001-2013

*Subperiod 2014-2017*

The driving themes “*organizational citizenship behavior*” and employee extra-role helping behavior are desirable outcomes linked to the psychological mechanisms of organizational trust and identification (Iqbal *et al.*, 2019). Within this thematic area, we see that development of SR-HRM practices to improve workers’ conditions and workforce involvement in external CSR initiatives is connected to increased “*organizational identification*” (Newman *et al.*, 2016). These higher levels of organizational identification have a stronger influence on employees’ work attitudes and behaviors if the process is accompanied by greater perception of organizational “*support*” (Shen and Benson, 2016).

Further, the group “*Brazil*” shows solid associations between this central topic and “*green organizations*.” This country is a member of the BRICS and is regarded as being one of the most prospective developing economies and also the nation with the majority of

corporations complying with the ISO 14001 (2004) EM system in Latin America (Jabbour, 2015). In this subnet, under the link between “*industry*” and “*sustainable operations*” the question of how the incipient introduction of Industry 4.0 with upcoming technologies impacts work design and job procedures, and the role of sustainable oriented people management strategies in this direction, yet deserves attention (Stankevičiute and Savanevičiene, 2018).

The cross-sectional “*Sustainable HRM*” network shows a vigorous connection between “*paradox*” and “*tensions*.” According to Guerci and Carollo (2016), addressing the paradoxical tensions that emerge in HRM when the area adopts a sustainable orientation promotes learning and innovation opportunities. These authors also posited paradox theory as an elementary theoretical framework in sustainable HRM research and first used this framework to study GHRM. Next, “*GRI-standards*” frequently used for sustainability reporting are discussed, companies report information in order to become more transparent and eventually discharge their accountability to their stakeholders (Ehnert *et al.*, 2016). This concept is also tied to “*talent management*,” given the potential of Sustainable HRM policies to enhance positive employer branding and, consequently, its ability to attract and retain talent, and more importantly, how these people management practices are concerned with preserving a healthy and productive workforce (Ehnert and Harry, 2012). With regard to this particular issue, what still requires attention is how job seekers and other prospective employees gain insight into green organizational credentials (Jackson *et al.*, 2011). “*CSR*,” in turn, is connected to “*ethics*” and concern for improving stakeholder wellbeing (Sarvaiya *et al.*, 2018). Therefore, leaning on the instrumental value of “*Stakeholder theory*”, can help extend existing research on which HR practices are most effective in managing stakeholders’ expectations, thereby enhancing the firm’s ability to generate sustainable long-term value (Guerci *et al.*, 2016).

The isolated theme “*employee participation*” is closely tied to “*work environment*”. As employees would be more likely to co-operate in fair work settings, especially when they feel job satisfaction and are affectively committed, and when their efforts are recognized and valued. (Cugueró-Escofet *et al.*, 2019). In the field of “*supply chain management*,” the subtheme “*green/sustainable supply chain management*” (GSCM) is increasingly discussed as a useful instrument for reducing environmental threats. However, Nejati *et al.*, (2017) manifest that interdisciplinary research exploring the role of GHRM in

prompting GSCM remains necessary, as a fruitful avenue to seek solutions aimed at mitigating the undesirable impacts of implementation obstacles on GSCM success.

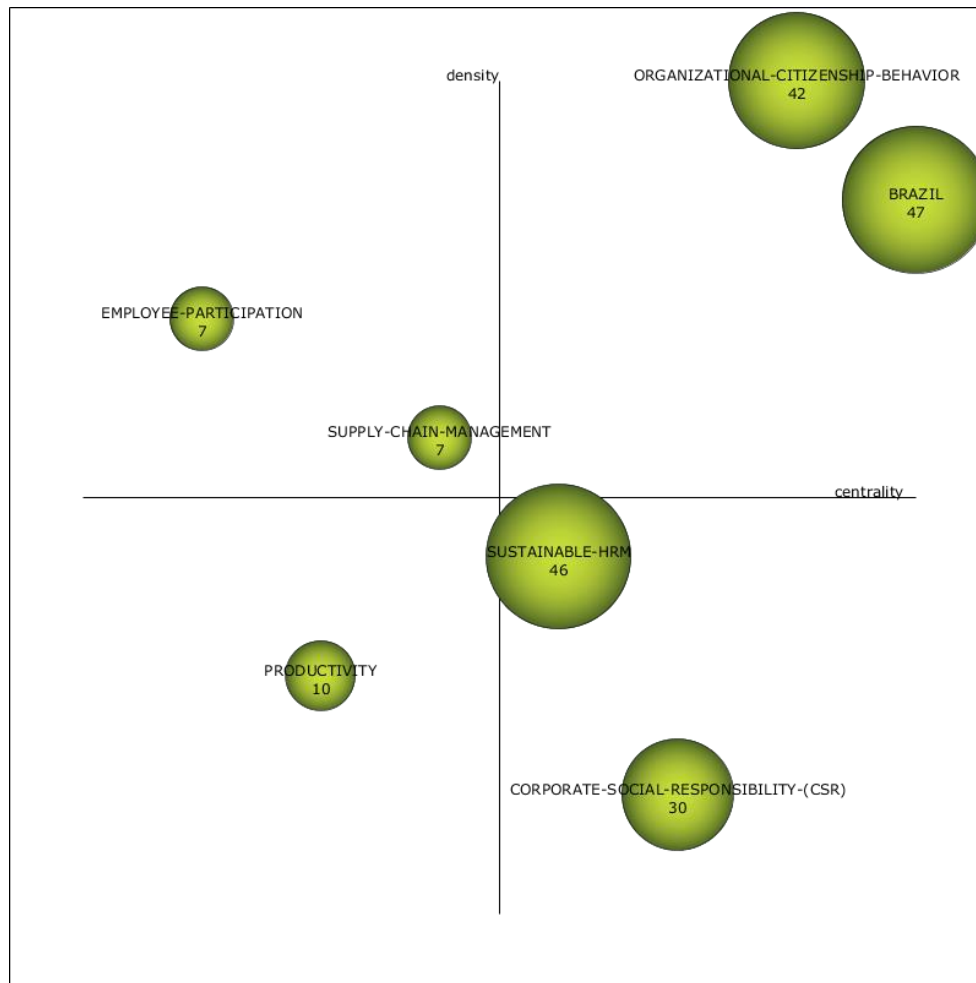


Figure 4. Strategic diagram for 2014-2017

*Subperiod 2018-2021*

Within the network of the motor theme “GHRM,” we see interconnections with “environmental performance.” Undertaking GHRM practices and green discipline management produces higher levels of green intellectual capital and motivates the emergence of pro-environmental behaviors among employees, ultimately with positive effects on green performance (Pham *et al.*, 2019). The subtopics “organizational citizenship behavior” or extra-role behaviors and “pro-environmental behavior” are thus also discussed primarily within this thematic network. Notably, because employee’s discretionary green behavior is not formally assessed and compensated, these one is primarily driven by an individual’s perceptions of the organizational green climate

stemming from GHRM adoption (Dumont *et al.*, 2017). The concept of “*competitive advantage*” is subsequently coupled with responding both to “*stakeholder pressures*,” which asks greater commitment to green management; and to the “*Resource Based View*,” which posits the relevance of developing green competencies among workforce as a lever to achieve a sustainable competitive advantage and a long-term performance (Cabral and Lochan Dhar, 2019). The main contribution of these authors is a multi-dimensional scale to measure the green competencies construct, which was lacking in the literature. Thirdly, the theme “*engagement*” is a motivational construct that reflects employees’ organizational involvement, and herein the “*social exchange theory*” is a useful theoretical lens to explain how the development of HR practices with a sustainable orientation can lead to such positive reciprocal response of workers (Hameed *et al.*, 2020). The theme “*motivation*” shows a strong connection between “*employability*” and “*success*”. Peters *et al.* (2019) argue that employability has become a hot topic, due to a combination of multiple challenges, such as an increasingly ageing workforce, a lack of young talent, and technological disruptions, which require both organizations and individuals to be more responsive and flexible. They also support the implementation of Sustainable HRM to empower individuals in the process of taking responsibility for a sustainable career.

Next, we find the “SR-HRM” theme. This type of management as a dimension of CSR that mainly covers the CSR policies related to employees -see Barrena-Martínez *et al.* (2019) for a detailed description of SR-HRM policies and practices-, seeks “*employee wellbeing*” (Iqbal *et al.*, 2019). We also identify a nexus with “*scale-development*.” For Santana *et al.* (2020), the works of Shen and Zhu (2011) and Barrena-Martínez *et al.* (2019) provide measurement scales that incorporate the latest advances in SR-HRM research. The next topic, “*perceived organizational support*,” is studied as mechanism to explain how positive employee perceptions of an organization climate directly affect individual’s workplace behaviors (Shen and Benson, 2016). Within this subnet, we observe a linkage between employees’ feelings of “*satisfaction*” and “*affective commitment*” towards the organization, and the collaborative practice of “*knowledge sharing*” (Cugueró-Escofet *et al.*, 2019). These ones acknowledged that employees would likely exchange knowledge with their coworkers in just organizational frameworks, where they feel satisfied, affectively committed and their efforts are recognized and rewarded, but call for additional research on the core factors that foster or inhibit

knowledge sharing behaviors that make the HRM more sustainable. Lastly, among the themes endorsed under the “*attitudes*” thematic area, we find “*green behavior*” and “*environmental commitment*.” The first of these subareas shares links with “*environmental concern*” and “*organizational identification*,” because employee’s green workplace behavior is strongly shaped by the organizational culture and intrinsic behavioral intention (Al-Ghazali and Afsar, 2020).

Within the group of cross-cutting or transversal themes, it is important to outline the connection of the theme “*job performance*” to the subtopics “*leader-member exchange*,” “*perceived green organizational support*,” and “*psychological empowerment*.” We also see how the basic topic “*innovation*” connects to “*organizational culture*”, and in doing so Al-Ghazali and Afsar (2020) claimed that placing GHRM practices can prompt “*creativity*” and green initiatives related to environmental conservation and stewardship.

Finally, we identify isolated or highly specialized topics in this period. The first is the theme “*organizational attractiveness*,” linked directly to subthemes “*corporate reputation*” and “*job pursuit intentions*”. Second, under the theme “*future time perspective*,” a nexus appears between “*older workers*” and “*careers*”, and Peters *et al.* (2019) suggest that future research on sustainable career development practices should focus on the potential intensifying psychological processes that deter aging workers from potentially investing in their own employability, an issue that is key not only for individuals' own financial, social, and intellectual sustainability, but also for sustainable organizational development. The topic “*sustainable performance*” is also studied jointly with the “*triple bottom line*” and involves measuring the firm’s impact in terms of economic, environmental, and social outcomes Stankevičiute *et al.* (2018). HRM studies should broaden the use of this approach to endorse a robust sustainability and holistic thinking, by considering the complexity and non-linear interactions between the different sustainability dimensions (Ehnert and Harry, 2012).

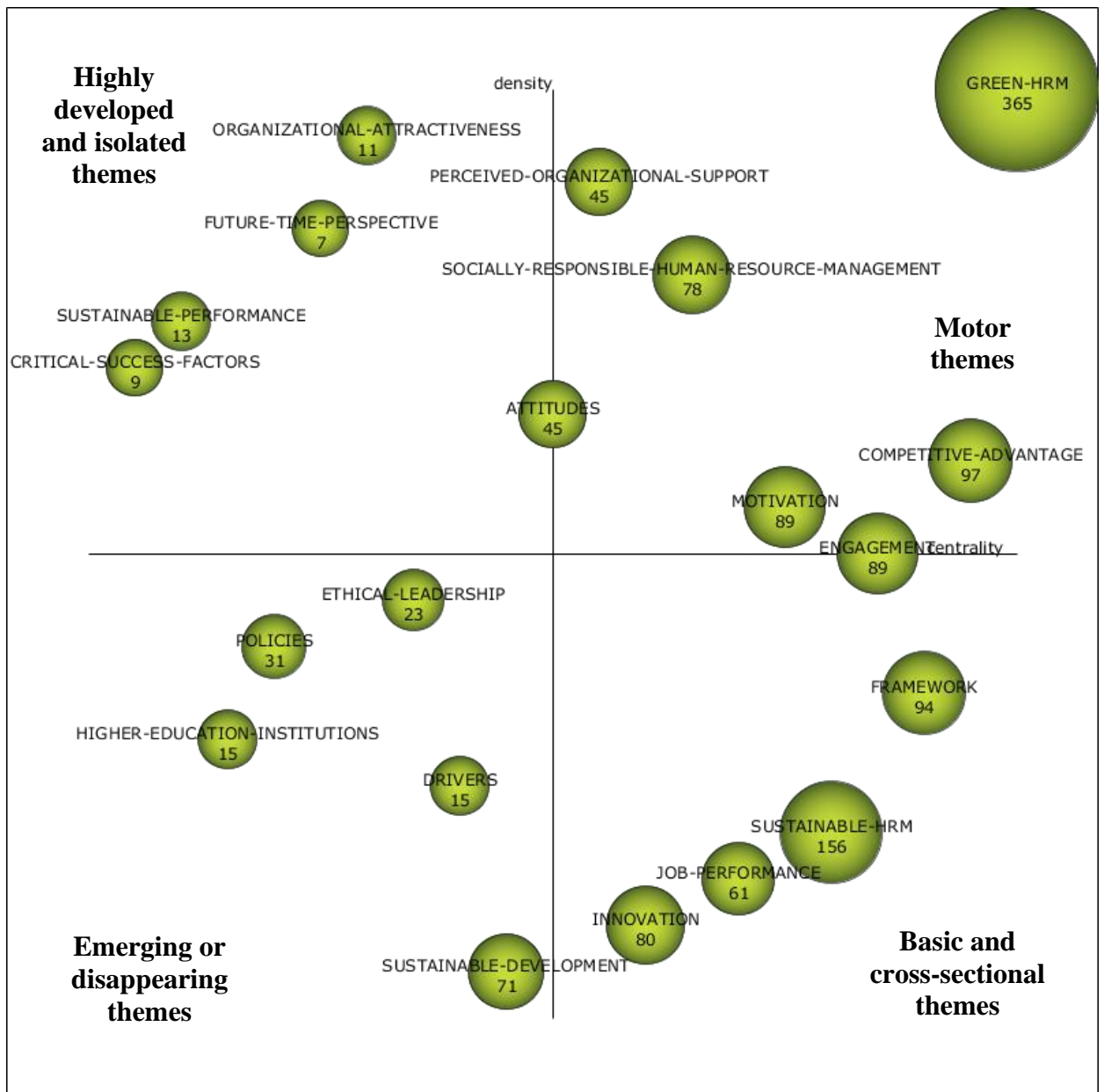


Figure 5. Strategic diagram for 2018-2021

### 3.3 Future research agenda (RQ3)

Examination of the emerging topics that appear in the last period (see Figure 5) shows additional underrepresented themes that require further attention. First, little has been said on the impact of organizational leadership on the adoption of GHRM practices and, more specifically, the notion of “*ethical leadership*” and how ethical leaders influence employee’s green behaviors should be identified as an avenue for future research (Islam *et al.*, 2020). Moreover, to bridge the gap in understanding how GHRM influences

employees' motives to engage in environmental activities, the construct “individual green values” offers an opportunity to reflect on factors that may spur or mitigate the extent of the relationship between GHRM and green behaviors on and off the job (Chaudhary, 2020).

Secondly, the theme “*policies*” is closely associated with the individual factors “*empowerment*” and “*values*,” two mechanisms that enhance attainment of corporate EM policies, according to Hameed *et al.* (2020). To date, the prevailing literature on GHRM has largely conceived the link between GHRM and employee and organizational green performance (Shen *et al.*, 2019). The effect of GHRM on non-green work attitudes and behavior has been largely neglected, thus negating the full potential of GHRM (Dumont *et al.*, 2017).

Third, scant attention has been placed on the “*higher education institutions*” sector, although sustainability in higher education has become the main focus of the United Nations sustainable development agenda (Srivastava *et al.*, 2020). These authors also stated that contributions in the educational context would be valuable, because the inability of these organizational settings to be proactive about the future and their stronger bureaucratic culture that hampers the general progress towards sustainability. Therefore, we suggest undergoing more research in this direction to identify what initiatives and organizational mechanisms have the internal capacity to address these flaws and steer the organization towards sustainable development.

As for the “*drivers*” thematic group, or elements that encourage adoption of pro-environmental behaviors, the empirical evidence based on GHRM practice “*green rewards and management*” is particularly sparse when compared to how organizations build green skills or provide opportunities for employees to participate in organizational EM initiatives (Renwick *et al.*, 2013). Similarly, as Ehnert *et al.*, (2016) point out, the exploration of international differences in Sustainable HRM has been overlooked so far, so more cross-country studies are needed to understand the contributions of external environmental factors (i.e. “*culture*”) toward its implementation (Pham *et al.*, 2019). Lastly, the theme of “*sustainable development*” shares strong relations with its enablers, the intangible asset “*intellectual capital*” (IC) and the notion of “*stakeholder engagement*.” Barrena-Martinez *et al.* (2019) are among the few researchers who have

explored the potential link between SR-HRM and IC value, as despite its strategic significance, it is less apparent than other outcomes such as financial performance.

In closing, the cross-cutting topic “*Sustainable HRM*” contains issues that demand further consideration. Until now, Sustainable HRM has shown narrow external orientation, concentrating mainly on policies and practices directed at internal stakeholders and devoting minimal consideration to external results of HRM, like greater engagement with communities (Podgorodnichenko *et al.*, 2022).

#### **4. Conclusions**

The literature on Sustainable HRM, due to its multidimensional nature, is fragmented, diverse and challenging. Therefore, this research aims to work on the integration of studies that deal with general Sustainable HRM and its key types GHRM and SR-HRM, to give direction, structure and shape to the research domain as it develops and advances.

The analysis of bibliometric attributes related to research on sustainable HRM and the subfields GHRM and SR-HRM, has revealed the rapid increase that scholar production on these topics, in consequence of changes in the market and socio-political context of businesses, the growing interest in exploring the interconnections between CSR, HRM and sustainability, and more specifically on how HRM measures can promote proactive sustainable behaviors among workers. Similarly, among the geographic areas that most highly support the spread of this knowledge field, we find that both the Asia-Pacific region due to its increasing challenges to achieve a sustainable growth, and the European context (where HRM adopts a long-term thinking and a multistakeholder approach). Next, regarding journal’s attention to this research area, it has been observed that there are more published publications with a GHRM and Sustainable HRM focus than with a SR-HRM orientation.

Looking at the research front we have uncovered some research shortcomings. First, overlooking the nature of Sustainable HRM, past investigations have failed to consider multiple sustainability dimensions simultaneously. Under the scope of GHRM, the critical role of green training has been largely explored, but more research on the obstacles that might hinder its effectiveness and how to measure the outcomes of its implementation



are flaws that should be addressed. In addition, more interdisciplinary research exploring the role of GHRM in driving GSCM and supporting the emerging introduction of Industry 4.0, would be valued.

Our review also yields several valuable implications. From a theoretical viewpoint, the research agenda included in this study helps this discipline to move forward by including exciting new directions for future research. Our results also help firm's managers and professionals to understand the critical role of Sustainable HRM strategies in meeting the following contemporary business challenges: talent management and employability.

Despite its contribution, this study has some limitations. First, it only includes documents published in the ISI Web of Science. This limitation constrains the generalizability of our results, and future research should contrast these findings using other databases. Similarly, the scope of our study was to reveal the main research areas and their related topics via co-word analysis with the open-source science mapping software SciMAT. Future research could use other bibliometric techniques, such as co-authorship analysis, to explore this field's social structure by mapping the cooperation and collaboration networks established among authors who share publication ownership.

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