

Twenty-Years Journey of Sustainable Human Resource Management Research: A Bibliometric Analysis

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Abstract: Sustainability is gaining acceptance worldwide, and HRM is also influenced by it. Researchers globally are also exploring sustainable human resource management which creates a direct link between HRM and sustainability. Bibliometric analysis examined 247 documents on sustainable human resource management from 2003 to 2022. This study aimed to analyze the research trend, global distribution, contributory journals, leading authors, and contributing nations in sustainable HRM. In this bibliometric analysis, 247 documents have been analyzed. The review revealed that sustainable HRM is still an emerging concept worldwide; more researchers from European and Asian countries dominate this field. The present review will be helpful for academicians, practitioners, and researchers in this field. The study also presents interesting results that could help line managers and top managers to formulate ideas for sustainable HRM practices in their own companies.

Keywords: sustainable human resource management; sustainability; HRM; environment; bibliometric

1. Introduction

As a result of global industrialization, the environment is deteriorating, making environmental issues a colossal concern for humanity. The growth of the population, consumption, and the use of non-renewable resources are responsible for environmental problems worldwide. Environmental protection and sustainability are immense challenges for global organizations; hence, it is imperative to deal with them by adopting curative measures (Sulphrey and Faisal 2021). The term “sustainability” gained popularity as the Brundtland Commission of the United Nations sparked a discussion on sustainability. The commission took a broad, long-term, and considered stakeholder-inclusive view on sustainable development. Three pillars of sustainable development were recognized. The three pillars were economic, social, and environmental. The commission was concerned with environmental deterioration and its social impact on economic growth (Brundtland Commission 1987). Businesses began to consider sustainability in response to all of these issues. Thus, sustainable societal development is only possible if a business incorporates sustainability into its organizational agenda (Wagner 2015). The business world can move toward sustainable business development by becoming more aware of environmental and social issues (Schoenherr 2012; Ehnert et al. 2016; Faisal 2023). Therefore, organizations must include environmental objectives and economic goals during strategic formulation. However, this awareness fascinates the business world to be proactive in dealing with it.

In this modern dynamic business environment, the role of human resource management (HRM) is in a transformation phase. Only those organizations that inspire their employees and foster a great workplace culture can stay alive in the competition. HRM now provides people- and environment-focused economic and social solutions to build a long-lasting corporate culture, in contrast to only recruiting individuals with high potential who can enhance work processes in line with business goals (Faisal and Naushad 2020).

Sustainable HRM is a new approach to human resources management which integrates functions of HRM with corporate sustainability and accomplishes organizational objectives



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along with environmental objectives (Ehnert 2009; Kramar 2014). The term “sustainable HRM” is one of the elements of the growing organizations that are publicly revealing their sustainability endeavors (Ehnert et al. 2016). Organizations need to incorporate social and environmental goals into their economic aims, be change agents (Aguilera et al. 2007), and engage in sustainable development that balances current and future demands. Stress at work, employee burnout, health problems, and balancing work and personal responsibilities are all common problems nowadays (Mariappanadar and Kramar 2014; Stankevičiūtė and Savanevičienė 2019). Many researchers are sure sustainable HRM could solve these problems because it considers human factors (Ehnert 2009; Ehnert and Harry 2012; Hahn et al. 2015). The sustainable part of HRM creates a work environment that keeps current and potential employees interested enough to work willingly and well for the organization (Ehnert et al. 2014). As a result, employees can balance work and life well without feeling stressed or having health problems. Jackson et al. (2011) and Ehnert and Harry (2012) say that human resource management (HRM) is a crucial part of making an organization last. The HRM sustainability perspective is vital when discussing sustainability in society and business. Several researchers (Hahn et al. 2015; Ehnert 2009) think sustainable HRM’s implications could help to solve problems such as job burnout, stress, and work–life balance because they take the needs of people into account.

Bibliometric analysis has become incredibly popular in business research because of the use of different bibliometric software such as VOSviewer, Gephi, Leximancer, and Biblioshiny and with availability of scientific databases such as Scopus and Web of Science (Khan et al. 2021). Researchers use bibliometric analysis to discover emerging trends, collaboration patterns, documents, and sources of information on a specific research topic. It is an advanced approach that scans, extracts, and presents information in a clear and understandable form by illustrating it with maps, charts, and tables (Khan and Muktar 2020; Choudhary and Datta 2022). There were many bibliometric studies conducted on human resource management and connected fields. Examples include the intellectual structure of HRM research (García-Lillo et al. 2017), Human Resource Training (Danvila-del-Valle et al. 2019), the bibliometric keywords network analysis of human resource management (Chae et al. 2020), human resource management in performance measurement and management (Garengo et al. 2022), HRM studies in the hospitality and tourism domain (Pelit and Katircioglu 2022), HRM and blockchain (Mohammad Saif and Islam 2022), and green HRM (Khan and Muktar 2020; Bahuguna et al. 2023; Fachada et al. 2022; Choudhary and Datta 2022); for sustainable HRM the only bibliometric study was conducted for the period of 1982 to 2019 by Kainzbauer and Rungruang (2019). A comprehensive review of the literature reveals that a fair understanding of sustainable HRM emerged from 2003 onwards, and research interest in this field increased tremendously from 2019 to 2022. As a result, earlier studies could not cover this growth phase, so the current study focused specifically on the last two decades for this bibliometric study. Therefore, the current work fills the research gap.

Research on sustainable HRM has increased during the last four years. Current research reviewed different earlier studies to understand the conceptual framework of sustainable HRM. This paper further intended to enlighten and answer different questions through bibliometric analysis. First, what is the total number of studies conducted in this exciting field from 2003 to 2022? Second, what are the different keywords used in the studies to conceptualize sustainable HRM? Third, which authors mainly contributed to this field and were recognized worldwide through high citations? Finally, which journals have the most citations and significant impact on sustainable HRM?

2. Literature Review

The roots of sustainable HRM are related to strategic human resource management (SHRM) and are referred to as an extension of it (Ehnert 2009; Mariappanadar 2019; Kramar 2014). Sustainable HRM is directly associated with sustainability, while SHRM's focal area is the strategy and HRM (Boxall 2012; Mariappanadar 2019). However, the theoretical framework of both is the same. Numerous authors have explored the definition of sustainable HRM; Table 1 describes its details.

Table 1. Different definitions of sustainable HRM.

Zaugg et al. (2001, p. II)	"The long term socially and economically efficient recruitment, development, retainment and disemployment of employees will be the foremost challenge of future human resource management in a dynamic environment. Companies, respectively, public institutions are challenged to provide adequate frameworks enabling the use of instruments in the context of sustainable human resource management."
Thom and Zaugg (2004, p. 217)	"Those long-term oriented conceptual approaches and activities aimed at socially responsible and economically appropriate recruitment and selection, development, deployment, and release of employees".
Wikhamn (2019, p. 103)	"Sustainable HRM evolves around soft issues such as demonstrating sincerity towards the employees, including providing a decent work environment and conditions, providing development opportunities and being attentive to employees' physical and psychosocial well-being at work".
Kramar (2014, p. 1075)	"Social and human outcomes which contribute to the continuation of the organization in the long term, that is to a sustainable organization".
Ehnert et al. (2016, p. 90)	"Adoption of HRM strategies and practices that enable the achievement of financial, social, and ecological goals, with an impact inside and outside of the organization and over a long-term time horizon while controlling for unintended side effects and negative feedback."
Gollan (2005, p. 26)	"Human resources sustainability in terms of the capacity of organizations to create value, thereby having the capacity to regenerate value and renew wealth through the application of human resource policies and practices."
Ehnert (2009, p. 423)	"Value of human resources is recognized as being more than immediate financial usefulness".

Based on the above definitions, it is clear that most definitions are about an organization's long-term viability and business performance. Therefore, the long-term perspective of effective HRM practices connects it with strategic human resource management (SHRM).

In an organization, employees are vital resources, which is why sustainable HRM creates better employment relationships to attain sustainable corporate development. In addition, many researchers opined that HR functions play a vital role in achieving sustainability (Boudreau and Ramstad 2005; Faisal and Naushad 2020; Kramar 2014).

2.1. Theoretical Framework of Sustainable HRM

Stakeholder theory (Freeman 1984), a resource-based view (RBV) (Wernerfelt 1984), and ability, motivation, and opportunity (AMO) theory (Appelbaum et al. 2000) serve as the foundation of sustainable HRM. However, AMO theory was primarily applied in earlier studies. First, as per stakeholders' perspective, the relationship between sustainable HRM and sustainability is established by the interaction of various players such as stakeholders, environmental agents, and the government. It clearly explains the HRM strategies as not just caring about the interests of employees but also trying to fulfill stakeholders' expectations. Thus, this approach considers the collective concern of employees and stakeholders. The RBV theoretical framework identifies the development of employees in the form of capacity building and task accomplishment, as well as the protection of natural resources, as essential elements for creating a competitive advantage (Arulrajah and Opatha 2016). The AMO framework is based on three criteria that seek to improve the firm's sustain-

able performance. The “ability” is concerned with fostering green competencies among staff members to support an environmentally friendly environment inside and outside of the organization. ‘Motivation’ deals with encouraging employees to participate in social activities and is a shared responsibility between the organization and the employees. Employee participation in sustainable practices is part of their job duties, and employers should recognize and reward such behavior. The opportunity deals with providing suitable working conditions and an organizational culture that promotes employee involvement in green activities.

2.2. History of Sustainable HRM

Concerning the short history of sustainable HRM, the idea is taking shape as more and more research papers have been published in this field over the last four years. The early evolution of the sustainable aspect of human resource management began near to the year 2000 onwards; many researchers (Gollan 2000; Zaugg et al. 2001; Wagner 2015; Wilkinson et al. 2001) underlined the importance of sustainability in managing human resources based on earlier studies related to environmental management, HRM, and organizational sustainability. Ehnert and Harry (2012) described the brief history of sustainable HRM, and they categorized the development of the initial literature in the form of three approaches (Swiss, Australian, and German). It was an effort to provide a summary of the evolution of the field. The Swiss approach focused on economic, social, and human sustainability rather than the industry’s ecological sustainability. It was mentioned that human resources should be more used (consumed) rather than adequately trained (developed); hence, this approach defines sustainable HRM as fostering employability, encouraging individual accountability, and maintaining proper work–life balance. The Australian approach to sustainable HRM strongly emphasizes the sustainability of human resources within the framework of a highly participative work environment where employees can be involved in decision making (Gollan 2000, 2005). On the other hand, the German approach to sustainable HRM emphasized the organization’s economic, ecological, and human resource sustainability (Kramar 2014). The organization primarily depends on the resources to accomplish its goals. This approach specifies how organizations must create survival strategies in business environments.

Following that, various researchers made significant contributions to conceptualizing sustainable HRM through their influential work, such as Ehnert (2009, 2011) and Ehnert et al. (2016), who established a link between sustainability and HRM practices and conceptualized the sustainable management of HR, sustainable leadership (Avery 2005; Hargreaves and Fink 2012), Kramar’s (2014) linkage of sustainable HRM with strategic human resource management, and sustainable HRM (Mariappanadar 2003, 2012). De Prins (2011) developed a holistic sustainable HRM model. The model was further elaborated by Mazur (2015), who explained that a sustainable HRM framework involves a psychological perspective, a sociological perspective, a strategic perspective, and a green perspective. Sustainable HRM focuses on fully employing and valuing people in the organization and connecting them to strategic policies and the environment.

2.3. Types of Sustainable HRM

The different authors discussed the various types of sustainable HRM. In line with existing literature, Stahl et al. (2020) discussed three types of sustainable HRM, namely “green HRM”, “socially responsible HRM”, and “triple bottom line HRM,” that can meet the sustainability agenda of the organization. Along with the three types already mentioned, Aust et al. (2020) added a fourth type called “common good HRM” and explained how it might help the organization achieve its sustainable goal.

A socially responsible approach to human resources is known as socially responsible HRM; it includes HRM and corporate social responsibility (CSR)-related personnel policies (Shen and Benson 2016). It is linked to several benefits, including fulfilling social expectations of workers regarding fair career opportunities and work–family integration. It increases job satisfaction and negates turnover intentions (Kundu and Gahlawat 2015; Faisal and Naushad 2021). The triple bottom line highlights that environmental, social, and economic goals need to be accomplished to attain sustainability. The triple bottom line strategy seeks to minimize the adverse environmental effects caused by an organization’s operations. (Davies and Crane 2010). Green HRM refers to strategies used by businesses to hire staff who are environmentally conscious, provide them with green training, evaluate their performance against the organization’s green standards, and provides them with green rewards for achieving their green goals (Faisal 2023). A good company encourages its staff to work toward the common good. Creating goods and services through collaborative efforts is the common good for an organization. “Common good” in the context of human resource management means using HRM policies and practices that help all employees. It involves the participation of employees in decision making, proper grievance handling, job security, and providing help to employees in cases of need. Different researchers used all these dimensions in their research work, as shown in Table 2.

Table 2. Different Types of sustainable HRM adopted by researchers.

SI No.	Dimensions	Researchers
1.	Socially Responsible HRM	Barrena-Martinez et al. (2019); Chanda and Goyal (2020); del-Castillo-Feito et al. (2022); Diaz-Carrion et al. (2019); He et al. (2021); Mariappanadar (2003, 2012); Newman et al. (2016); Ramos-González et al. (2022); Omid and Dal Zotto (2022); Sobhani et al. (2021); Shen and Benson (2016); and Zhao et al. (2021, 2022).
2.	Green HRM	Abbas et al. (2022); Ahuja et al. (2019); Anwar et al. (2020); Cabral and Jabbour (2020); Carmona-Moreno et al. (2012); Dumont et al. (2017); Ercantan and Eyupoglu (2022); Faisal and Naushad (2020); Faisal (2023); Gupta (2018); Hameed et al. (2020); Islam et al. (2020); Jabbour et al. (2012); Masri and Jaaron (2017); Longoni et al. (2018); Mishra (2017); Nejati et al. (2017); Paillé et al. (2014); Pham et al. (2019); Raut et al. (2020); Saeed et al. (2019); Shah (2019); Shen et al. (2018); Tang et al. (2018); Wagner (2013); Yong and Mohd-Yusoff (2016); Ysliza et al. (2017); and Yusoff et al. (2020).
3.	Triple Bottom Line HRM	Aust et al. (2020); Baum (2018); Kozica and Kaiser (2012); Kramar (2014); Maley (2014); Mariappanadar and Kramar (2014); Piwowar-Sulej (2021); Stahl et al. (2020); and Wikhamn (2019).
4.	Common Good HRM	Matthews and Muller-Camen (2022); Aust et al. (2020); and Lu et al. (2022)

2.4. Importance of Sustainable HRM

With this notion of how effectively an organization manages people in alignment with sustainable principles, the importance of sustainable HRM can be understood. Many researchers have opined that sustainable HRM contributes to the acquisition and retention of a talented workforce through competency mapping, employee involvement, knowledge management, employee health and safety measures, organizational justice, and the adoption of CSR initiatives (Ehnert 2009; Mariappanadar 2003; Kramar 2014; Anlesinya and Susomrith 2020; Lopez-Cabral and Valle-Cabrera 2020; Wikhamn 2019). Big corporations are currently implementing sustainable HRM to achieve their green organizational objectives, especially in developed countries (Sulphrey and Safeer 2017; Faisal 2023). Yong et al. (2019) mentioned that when employees and organizations work together on green projects it helps the environment and makes the organization more competitive. Businesses need to use green practices effectively in order to achieve sustainability (Pham et al. 2019). Although firms in developed countries are adopting sustainable HRM practices, developing nations must deliberately incorporate sustainability into HRM functions to effectively deal with environmental challenges.

3. Methods

In order to answer research questions, the present study used bibliometric analysis as it provides detailed information about the identified topic (Van Eck and Waltman 2017). Before bibliometric analysis, researchers adopted various tools such as meta-analyses, expert interviews, and observations (Creswell 2009). Bibliometric analysis is a process that applies different statistical and material methods to draw meaningful information from the selected literature within the discipline (De Bakker et al. 2005; Gutiérrez-Salcedo et al. 2018). This study used three methods of bibliometric analysis (co-occurrence, citation, and bibliographic coupling). This analysis allows researchers to conceptualize sustainable HRM and understand past trends. Therefore, it sheds light on the subject's accomplishments and opens doors for future investigation. The researchers adopted the following procedure to address research questions.

3.1. Selection of the Database

The present study used the Saudi Digital Library platform (SDL) depositary of leading databases such as Scopus, Web of Science, and EBSCOhost. To conduct a well-planned bibliometric analysis, the first step was to identify the appropriate and reliable database to support the accomplishment of the analysis. Finally, the present study selected the Scopus database because of its broad coverage of publications and its detailed continuing assessment system for scientific journals, which contributes to maintaining the standard of research (Schotten et al. 2017).

3.2. Scope of the Search

The scope of the present search includes only studies related to sustainable human resource management. The focus area of the present research is limited to sustainable HRM only; hence, other related terms such as leadership, performance, and organizational development are excluded.

3.3. Criteria Adopted for Searching Articles

Different keywords were used to search for the relevant articles from the Scopus database. During the search process, the following keywords were used to include only the articles and review articles. (TITLE-ABS-KEY ("sustainable human resources management") OR TITLE-ABS-KEY ("sustainable HR") OR TITLE-ABS-KEY ("sustainable HRM")) AND (LIMIT-TO (DOCTYPE, "ar" OR LIMIT-TO (DOCTYPE, "re").

3.4. Generation of Results

After extracting data from the Scopus database, they were saved into an excel file. The data contain the document title, author name and affiliation, abstract keywords, and citations detail. This excel file was also used for the author's own analysis and further data elaboration. The VOSviewer (bibliometric mapping software) was used for bibliometric analysis and is one of the widely accepted bibliometric mapping tools developed by Van Eck and Waltman (2017). Most researchers used this software (Khan and Muktar 2020; Kainzbauer and Rungruang 2019; Fachada et al. 2022, Bernatović et al. 2022, Bernatović et al. 2022) in their studies to construct bibliometric networks. Figure 1 indicates the step-by-step process of the present research.

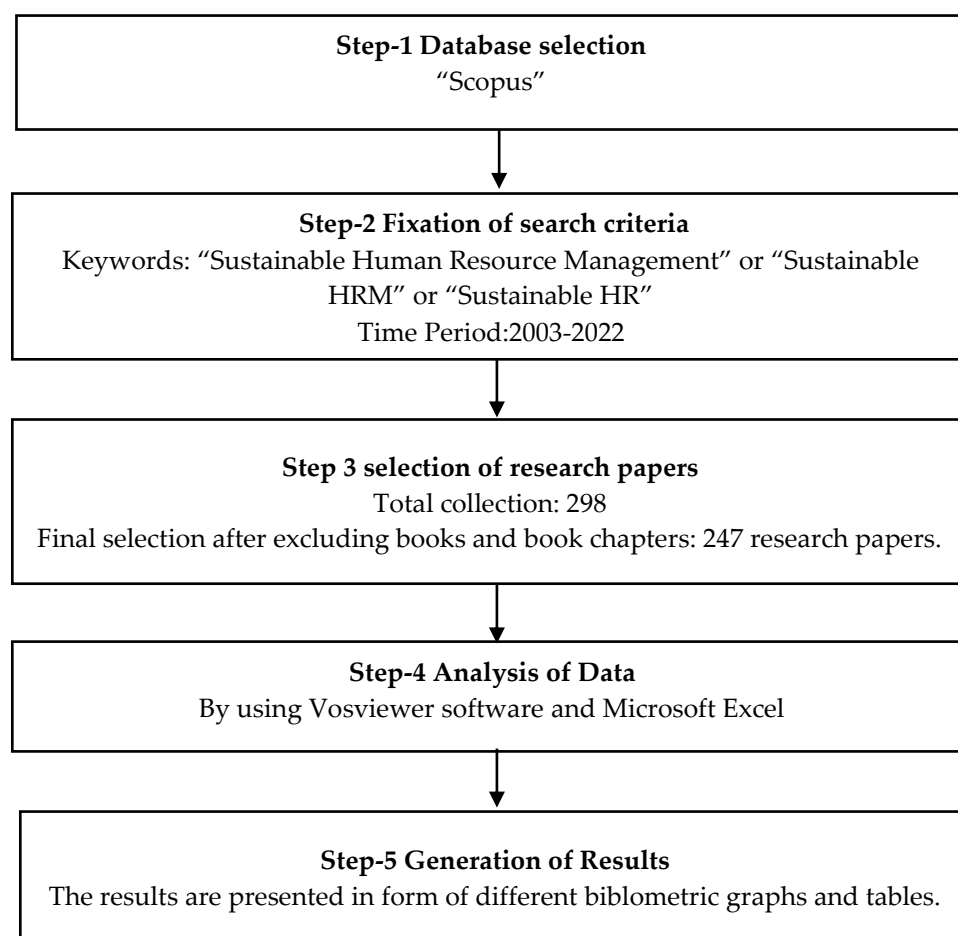


Figure 1. Process of research.

4. Results

This section presents the results and answers of the research questions raised in the introduction section.

The above graph (see Figure 2) provides exciting information regarding the research and development of sustainable HRM. The data from 2003 to 2022 reflected variations regarding the number of research papers but pointed out increasing researchers' interest worldwide from 2019 onwards. Out of 247 papers, 192 papers were published in these years. The exciting trends highlighted by the graph show that sustainable HRM is still a growing concept, as the last four years showed a rapid growth in the number of papers in this exciting field. Table 3 illustrates the description of data obtained from Scopus.

Table 3. Details of Data.

Time Period	Total Articles	Keywords	No. of Authors	No. of Citations
2003–2022	247	1133	625	4848

4.1. Author Affiliation and Citation Details

Table 4 details the scientific production of sustainable HRM by different countries; the total number of countries was 58. However, after establishing criteria of 10 documents and a minimum of 50 citations, only 10 countries were identified as meeting the threshold. The United Kingdom, Australia, India, Spain, and China have conducted more critical research in this field. Table 5 revealed the top ten highly cited documents in this field. Kramar (2014) was a highly cited and influential author with the title "Beyond strategic human resource

management: Is sustainable human resource management the next approach?" His Scopus citation score is 351, and his global citations are 856 as of 5 February 2023.

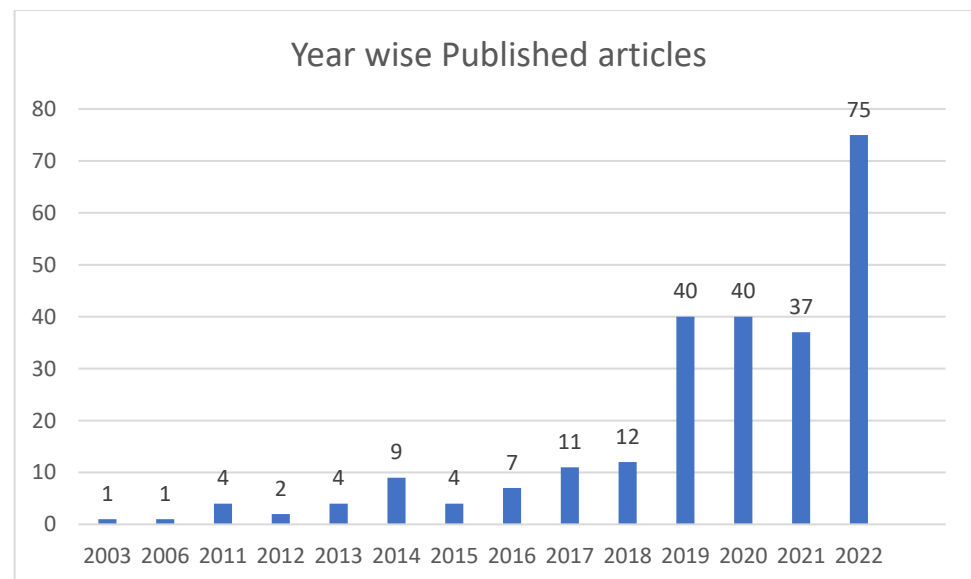


Figure 2. Year-wise published articles.

Table 4. Author's Countries.

Countries	Documents	Citations	% Out of 247
United Kingdom	35	1326	14.17%
Australia	29	1059	11.74%
India	24	325	9.72%
Spain	22	391	8.91%
China	21	251	8.50%
United States	17	425	6.88%
Belgium	14	545	5.67%
Italy	13	296	5.26%
Brazil	12	634	4.86%
Poland	11	125	4.45%

Source: author compilation.

Table 5. Top cited Documents.

N.	Author	Journal Name	Countries	Citation
1.	Kramar (2014)	<i>The International Journal of Human Resource Management</i>	Australia	351
2.	Jackson et al. (2011).	<i>German Journal of Human Resource Management</i>	USA	332
3.	Ehnert et al. (2016)	<i>The International Journal of Human Resource Management</i>	Belgium	192
4.	Nejati et al. (2017).	<i>Journal of Cleaner Production</i>	Australia	162
5.	Macke and Genari (2019)	<i>Journal of Cleaner Production</i>	Brazil	143
6.	Chams and García-Blandón (2019).	<i>Resources, Conservation and Recycling</i>	Spain	122
7.	Amrutha and Geetha (2020)	<i>Journal of Cleaner Production</i>	India	109
8.	Baum et al. (2016).	<i>Sustainability</i>	UK	97
9.	Wikhamn (2019)	<i>International Journal of Hospitality Management</i>	Sweden	96
10.	Stahl et al. (2020).	<i>Human Resource Management Review</i>	Austria	95

4.2. Sources and Authors

There were 105 comprehensive sources available, but only those with at least 5 documents and 50 citations were chosen. Only eight sources matched the thresholds. Table 6 presents the details of it. *Sustainability* (Switzerland) has the most articles and citations, followed by the *International Journal of Human Resource Management* and the *Journal of Cleaner Production*. These 3 journals have 82 articles, covering 33% of the 247 publications. Figure 3 shows details on the heat map, a significant area prominently covered by *Sustainability* (Switzerland) because of more documents and citations.

Table 6. Top Cited Source Details.

Source	Documents	Citations	Total Link Strength
<i>Sustainability</i> (Switzerland)	65	845	119
<i>Journal of Cleaner Production</i>	13	674	51
<i>Employee Relations</i>	8	71	28
<i>Human resource management review</i>	8	301	46
<i>International Journal of Manpower</i>	6	61	29
<i>Asia-pacific Journal of Business Administration</i>	5	113	25
<i>Corporate Social Responsibility and Environmental Management</i>	5	96	23
<i>International Journal of Human Resource Management</i>	5	672	103

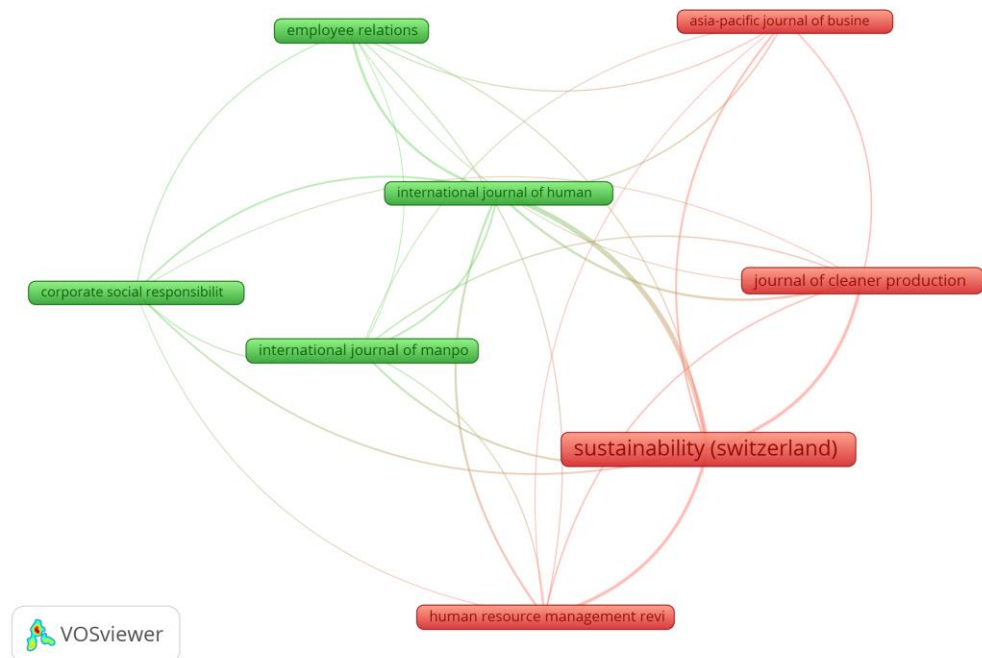


Figure 3. Top cited source.

4.3. Bibliographic Coupling Mapping

The bibliographic coupling mapping of the data revealed well-established connections. To refine the data the author fixed the criteria to a minimum citation of 25 to obtain more insightful articles. Out of 247 documents, 50 meet the criteria shown in the heat map. The five well-defined clusters were identified, shown in red, blue, green, yellow, and purple in Figure 4. These signify publications which are strongly connected through references. The results suggest, as shown by the heat map, that all publications have strong connections with each other except Stachová et al. (2019), which shows weak connections. The red cluster includes 16 documents in which Jackson et al. (2011) have the highest citations, the green cluster includes 13 documents in which Baum et al. (2016) have the highest citations, the blue cluster includes 10 documents in which Kramar (2014) has the highest citations, the yellow cluster includes 5 documents in which De Prins et al. (2014) has the highest citations, and the purple cluster includes 3 documents in which Stankevičiūtė and Savanevičienė (2019) have the highest citations. The bibliographic coupling analysis of sources specifies which journals had published sustainable HRM papers during the study period. The criteria were fixed to at least 3 articles per journal and a minimum citation score of 25; out of 105 sources, only 13 met the threshold. Figure 5 shows the stronger circle and connectivity around the *Sustainability* journal. Some other journals were specified with smaller circles. The bibliometric coupling analysis of the source revealed that “*Sustainability* (Switzerland)” was the highest number of publications and highest link strength, as mentioned in Table 7.

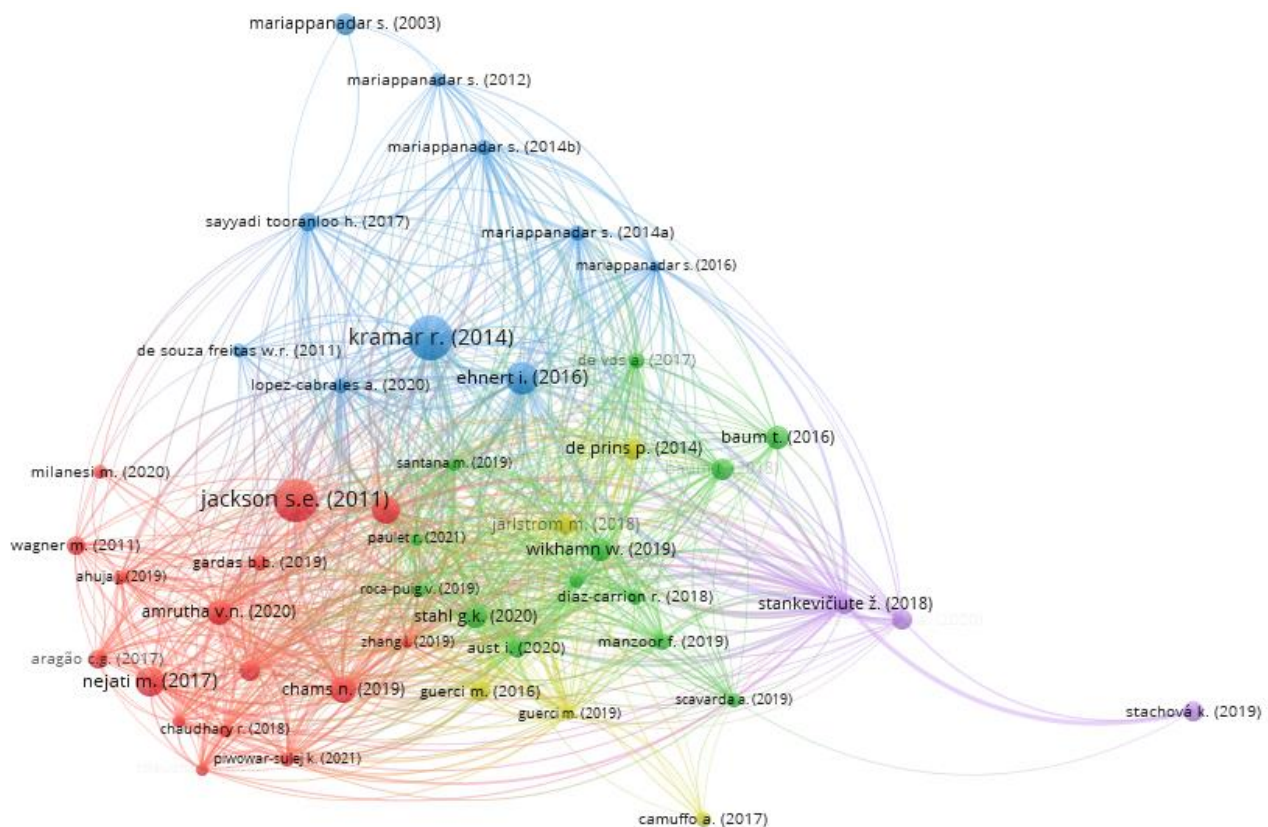


Figure 4. Bibliographic coupling network of sustainable HRM by documents.

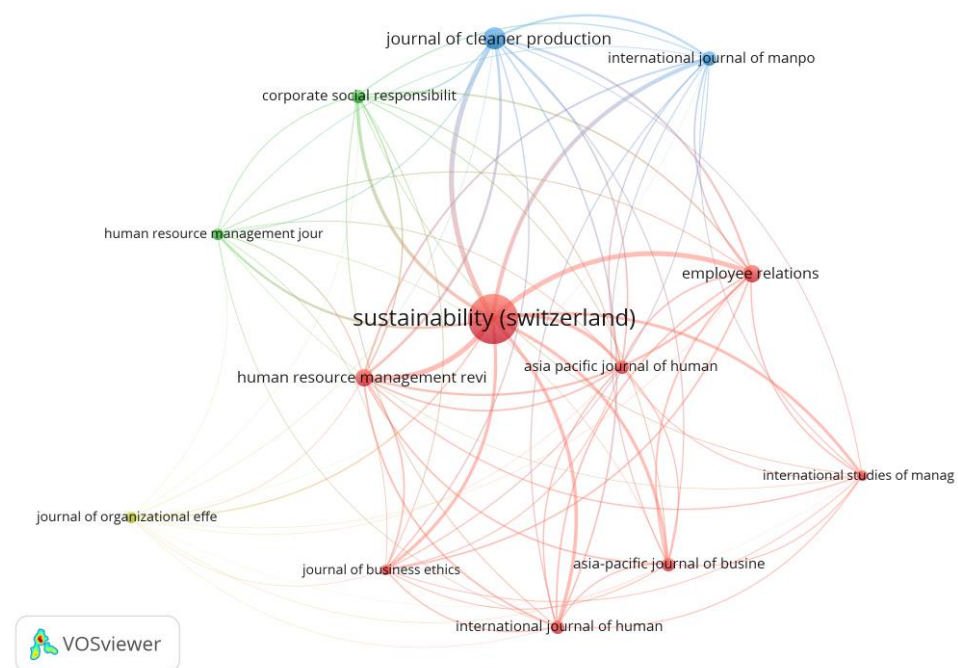


Figure 5. Bibliographic coupling network of Sources.

Table 7. Details of sources (with number documents and citations).

Source	Documents	Citations	Total Link Strength
<i>Sustainability (Switzerland)</i>	65	845	6265
<i>Journal of Cleaner Production</i>	13	674	2351
<i>International Journal of Human Resource Management</i>	5	672	1229
<i>Human Resource Management Review</i>	8	301	2355
<i>Journal of Business Ethics</i>	3	146	1132
<i>Journal of Organizational Effectiveness</i>	4	120	176
<i>Asia-pacific Journal of Business Administration</i>	5	113	1035
<i>Corporate Social Responsibility and Environmental Management</i>	5	96	1091
<i>Employee Relations</i>	8	71	2145
<i>International Journal of Manpower</i>	6	61	1590
<i>Asia Pacific Journal of Human Resources</i>	5	46	1228
<i>International Studies of Management and Organization</i>	3	36	905
<i>Human Resource Management Journal</i>	4	29	567

4.4. Keyword Co-occurrence Analysis

Figure 6 highlights that the keyword co-occurrence heat map of sustainable HRM presents different density values. A highlighted density yellow color specifies more frequent use of the concept. “Sustainable HRM” and “Sustainability” represent the highest yellow color density. Therefore, it indicates that these are the main keywords in sustainable HRM research. Afterwards, other keywords such as “Human Resource Management”, “Sustainable development”, and “Corporate social responsibility” illustrate that sustainable HRM connects with HRM and the objectives are the sustainable development of an organization with the attainment of corporate social responsibility.

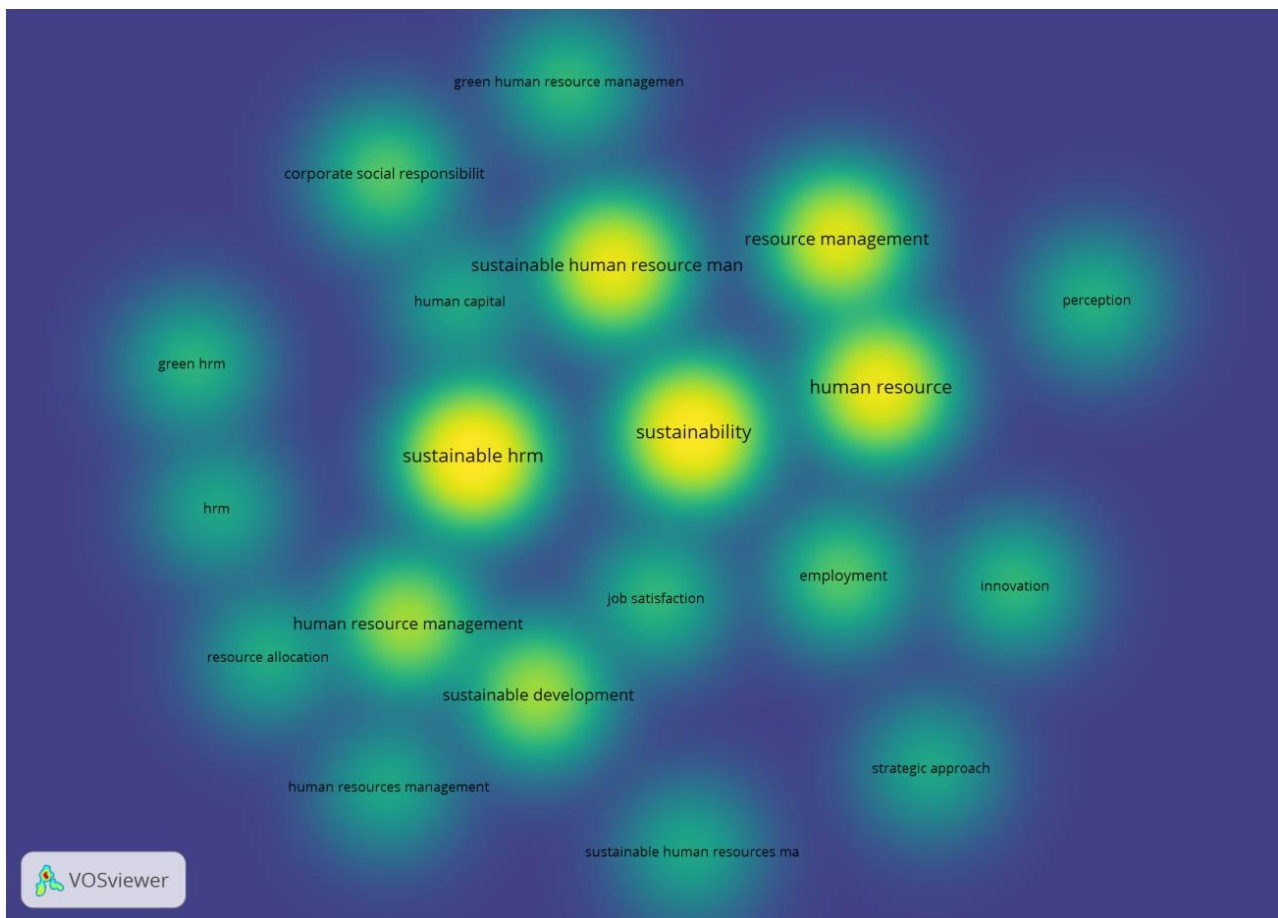


Figure 6. Keyword co-occurrence map of sustainable HRM.

Figure 7 highlights that cluster 1 (red color) includes “Sustainable HRM”, green HRM, human resource management, and sustainable development; cluster 2 (green color) comprises “Sustainability”, “Strategic Approach”, “Resource Management”, “Perception”, “Innovation”, “Human Resource”, and “employment”. Cluster 3 (blue color) includes sustainable human resource management, green human resource management, and corporate social responsibility, while cluster 4 has only one item of human capital. Based on the above four clusters, there are broadly two research areas of sustainable HRM. The first is prominently at the conceptual level, linking sustainable HRM with green HRM, and the second emphasizes the role of HRM, innovation, and strategic orientation in attaining sustainability in an organization.

Cluster Analysis

Table 8 shows the occurrence of most of the keywords in all clusters. In cluster 1 (red) “Sustainable HRM” occurs at the maximum followed by “human resource management”, “sustainable development”, “job satisfaction,” and “green HRM”. This cluster clearly indicates the need for sustainable HRM and green HRM to attain the sustainable development of an organization (Chams and García-Blandón 2019; Jackson et al. 2011; Amrutha and Geetha 2020). In cluster 2 (green) “sustainability” occurs at the maximum, followed by “Human resource”, “resource management”, and “employment”. The cluster highlights the role of human resources, innovation, and strategic approach in the attainment of sustainability (Wikhamn 2019; Aust et al. 2020; Stahl et al. 2020). “Sustainable human resource management” finds maximum occurrence in cluster 3 (blue), followed by corporate social responsibility and green human resource management. The cluster highlights the connectivity of sustainable HRM with green human resource management

and corporate social responsibility (Kramar 2014; Mariappanadar 2003; Ehnert et al. 2016). Finally, in cluster 4 only “Human capital” was found, which suggests the use of employees’ knowledge, abilities, and skills to attain organizational goals.

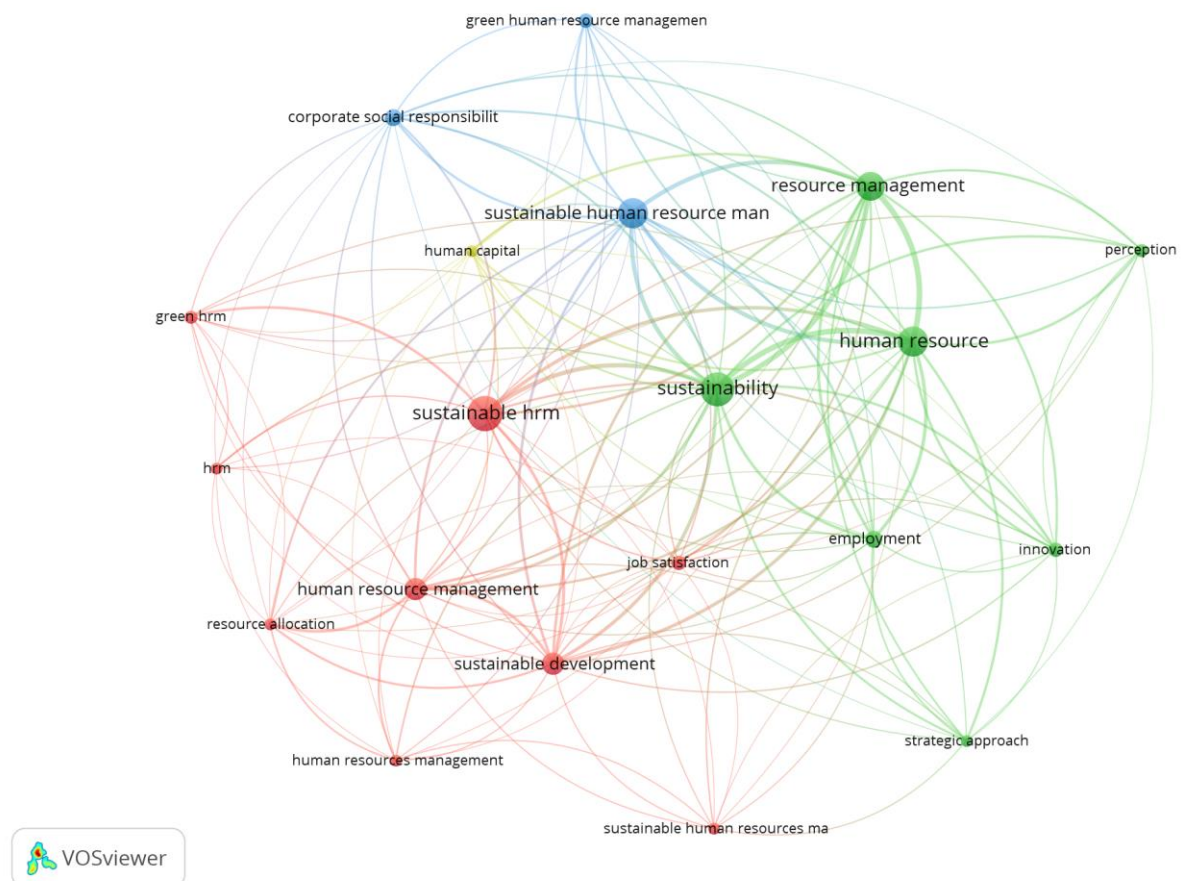


Figure 7. Keyword occurrence link map.

Table 8. Keywords from the keyword co-occurrence analysis.

Cluster 1 (Red)		Cluster 2 (Green)		Cluster 3 (Blue)		Cluster 4 (Yellow)	
Keywords	Occurrence	Keywords	Occurrence	Keywords	Occurrence	Keywords	Occurrence
Sustainable hrm	82	Sustainability	79	Sustainable human resource management	60	Human capital	10
Human resource management	35	Human resource	63	Corporate social responsibility	20		
Sustainable development	34	Resource management	55	Green human resource management	14		
Job satisfaction	14	Employment	20				
Green Hrm	13	Innovation	14				
Resource allocation	11	Perception	12				

Table 8. Cont.

Cluster 1 (Red)		Cluster 2 (Green)		Cluster 3 (Blue)		Cluster 4 (Yellow)	
Keywords	Occurrence	Keywords	Occurrence	Keywords	Occurrence	Keywords	Occurrence
Human resources management	10	Strategic approach	10				
Hrm	10						
Sustainable human resources management	10						

5. Discussion

The present study conducted a bibliometric analysis of the scholarly articles on sustainable HRM published between 2003 and 2022, extracted from the Scopus database. This article thoroughly summarizes the studies on sustainable human resource management so you can find research trends and related topics. This study can help academics or scholars who want to learn more about sustainable human resource management. It also provides historical data and an analysis of the current situation, which enables predictions for future developments. The present study revealed through bibliometric analysis the growth of sustainable HRM literature from 2019 onwards and, as per current trend estimates, the continuance of further growth for the next few years as sustainability is gaining acceptance worldwide. The keyword co-occurrence analysis using VOSviewer indicates that sustainable HRM is linked to HRM, and the long-term goals are CSR and organizational development with sustainability. Furthermore, for all stakeholders, the end goal is environmental sustainability, in line with the results of the bibliometric study conducted by [Kainzbauer and Rungtuan \(2019\)](#) and the systematic review conducted by [Anlesinya and Susomrith \(2020\)](#). As per the above discussion, it is clear that sustainable HRM is important to CSR and considers various resource holders' interests; hence, stakeholder theory is fully applicable. [Mariappanadar \(2012\)](#) mentioned that the adverse externality of increased work might dramatically worsen stakeholders' psychological, social, and occupational health issues, specifically for employees and their families. In this context, managers should implement HRM policies that protect their most important stakeholders.

6. Conclusions

The current study was a planned, systematic attempt to map sustainable HRM using bibliometric analysis. This study adds to the body of knowledge by offering a more thorough analysis of sustainable HRM types and practices and suggesting a future research agenda. This work enriches the existing literature by offering composite data on the most influential authors, most pertinent and cited sources, most cited papers, emerging keywords, and clusters for sustainable HRM. The present study discovered that sustainable HRM is a growing field. However, it is still in development, and more empirical studies need to be conducted on different contextual grounds. Recently, this field has been gaining attention and fascinating researchers worldwide, which is why there has been tremendous growth in many research papers from 2019 onwards. The study also showed how much each country was involved in sustainable HRM. The UK and Australia were the countries with the most documents and citations. The top-cited document is also from Australia (e.g., [Kramar 2014](#)). Different European countries are also making significant contributions to this subject. "Sustainable HRM", "Sustainability", "Human Resource Management", "Sustainable Development" and "Corporate social responsibility" are the most frequently co-occurring keywords discovered using keyword co-occurrence analysis. The results also show that sustainable HRM can help organizations become more competitive and efficient because it involves long-term CSR and sustainability objectives.

7. Limitations

The current study, like other studies, has some limitations. This investigation only used the Scopus database; all citations were in Scopus. Bibliometric analysis has some limitations of its own. The number of citations is only sometimes a good indicator of how good and essential a study is. The current study suggests that future studies use WOS or other databases to compare and analyze concepts in depth. The present research also excluded book chapters and books from our study because some information might have been left out. Finally, these results may serve as a guide for future studies into sustainable HRM.

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