Framing a Knowledge Domain Visualization on Green Human Resource Management: A Bibliometric Analysis from 2008-2022

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ABSTRACT

The green workplace has captured the interest of both academia and business during the last two decades. As a result, new academic disciplines like green human resource management emerged. GHRM can play a significant role in the development of corporate sustainability. This study focuses on comprehending the idea of GHRM and offers a current explanation of GHRM practices. In order to analyze and draw conclusions from 489 publications that were retrieved from Scopus database spanning a time period of almost two decades, the authors used the bibliometric method from 2008-2022. Bibliometric R-package and VOS viewer software are used to draw comprehend conclusions on GHRM scholarship. The study offers some important facts that could help academics and management conceptualize GHRM practices within their individual firms, which are now limited to certain businesses, geographies, developed countries, and HR approaches (hiring, training, and incentive). This effort also provides with the frame of acquaintance on GHRM by classifying various keywords, social erection impact journals, intellectual, conceptual, and reputable writers in this area. The study acts as the starting point for future GHRM research to understand changes in this area during the preceding 14 years. The information has been examined in terms of notable writers, the most read journals, important themes, and a logical and academic organization. The domain is in its early stages of further development, the research claims. Thus, more time-consuming study is needed to contribute to development of a deeper understanding of it developing profession.

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1.   Introduction

Pro-environmental policies and initiatives are being adopted by businesses at an increasing rate, enabling them to become competitive and ecologically friendly (Afsar & Umrani, 2020; Muisyo, Su, Hashmi, Ho, & Julius, 2022). Renwick, Jabbour, Muller-Camen, Redman, and Wilkinson (2016) have underlined the critical role of human resource management (HRM) in the pursuit of going green. Additionally, increasing awareness of environmental issues has spurred human capital to embrace the green component of HRM, sometimes known as green HRM (GHRM). As a crucial component of the business, human resources are accountable to manage people, the most crucial resource among all others. The requirement for boosting Green is enterprises' strategic competencies and HR experts' competencies. HR has been regarded as a crucial aspect in this respect, despite the fact that

studies on strategic HR competences and Green HRM practices have not been sufficiently conducted (Uddin, 2018). According to Ogbeibu, Jabbour, Burgess, Gaskin, and Renwick (2021), GHRM refers to HRM practices that improve favorable environmental outcomes. The importance of GHRM research has increased during the past ten years (Paulet, Holland, & Morgan, 2021). For instance, research suggests that GHRM has a positive impact on organizational commitment (Ko, Jang, & Kim, 2021), organizational financial performance (Ko et al., 2021), and corporate environmental performance (Kim, Kim, Choi, & Phetvaroon, 2019). Researchers and practitioners are starting to pay closer attention to the GHRM notion (Ansari, Farrukh, & Raza, 2021). The HRM component of environmental management is referred to as GHRM (Paillé, Valéau, & Renwick, 2020). GHRM comprises such environmental goals-aligned human resource approaches (Afsar, Al-Ghazali, Cheema, & Javed, 2020). They have started to view the implementation of GHRM in businesses by means of a fresh line of inquiry into environmental management that aims to organize HRM practices (Jabbour & de Sousa Jabbour, 2016). The classification of GHRM practices has been provided in this regard by (Renwick et al., 2016). First, GHRM is concerned with the enhancement of green competencies in workers via eco-friendly recruitment, selection, and training procedures. Secondly, GHRM stipulates employee motivation by recognizing and to reward green performance of employees. Third, GHRM is concerned to empower the employees and developing an ecologically responsible organizational culture in order to increase employee involvement. Recently, academics (de Souza Moraes et al., 2018) have embraced and used these components. Accordingly the general understanding of GHRM, connecting green practices into HRM tasks that includes the hiring procedure, performance management system, career development, and compensation for employees would elevate the likelihood that a will lead to business sustainability (Yong, Yusliza, & Fawehinmi, 2019). The GHRM system's key component is green HR practices. They represent the crucial activities that the GHRM system must carry out in order to carry out corporate strategy and accomplish specified strategic goals. Additionally, the literature that is currently accessible on Green HRM mostly offers perspectives in the Western setting. It is crucial to examine the issue in the Asian nations, as it is significant for the expansion of Asian Countries (Mishra, 2017).

2. Literature Review

Numerous studies have been conducted that examine the impact of human resource management (HRM) on financial advantages, yields, and efficiency of the business since the pioneering works of (Beer, Spector, Lawrence, Mills, & Walton, 1984; Hader, Lane, Boxall, MacLeod, & Di Guardo, 2022). As a result, HRM has become the main pillars of the strategic management, and nowadays, academics and business are in accord about the contribution of HR as a strategic business partner (Hafiza, Manzoor, Fatima, Sheikh, Rahman, Qureshi, 2022; Shahid, Muhammed, Abbasi, Gurmani, & Rahman, 2022; Qureshi, Zaman, Rahman, Shahzadi, 2022). However, business surroundings, where corporate failures are increases ,substantial concerns about society, the environment, economic security, and sustainability, organizations are compelled to reconsider or review their strategies (P. Bahuguna, Kumari, & Srivastava, 2009). They must have incorporate communal and environmental goals into their financial objectives and position themselves as modified agents and participate in sustainable development (Aguilera & Dencker, 2004). A situation like this requires performance metrics that are more inclusive of multiple stakeholder perspectives and encompass individual wellbeing, organizational efficiency, and societal wellbeing. The resulting progress or growth is lopsided and unsustainable if they are unsuccessful in addressing economic, social, and environmental issues. Business sustainability includes three areas of discussion in an organization; economic, social and environmental performance to keep business flourishing (Gouda & Tiwari, 2021). When businesses work to become more environmentally friendly, they can achieve the triple bottom line performance (Fonseca & Jabbour, 2012). Every aspect of business including supply chain, production, human resource, and strategic management all are impacted by an organization's efforts to go green (Buonomo, Piccinini, Benevene, Blasutig, & Cervai, 2022). Green workplaces are now seen by many businesses as a necessity for creating a competitive edge (Bahl, Kiran, & Sharma, 2022). In order to create a green workplace, typical corporate processes including supply chain, operations, human resource and marketing must be greened. Additionally, combining various organizational activities is necessary to achieve the greening of the workplace (Sarwar, Ali, Bhatti, & Rahman, 2021; Rahman, Chaudhry, Meo, Sheikh, & Idrees, 2021; Zhu, Fang, Rahman, & Khan, 2021; Younas, Idrees, & Rahman, 2021; Shafique, Rahman, Khizar, Zulfiqar, 2021). A green workplace entails the greening of standard corporate processes like logistics, advertising, supply chain

management, and human resources management. Moreover, combining various organizational activities is necessary to achieve the greening of the workplace (Singh, Del Giudice, Chiappetta Jabbour, Latan, & Sohal, 2022). Hence, GHRM, or general human resource management, is the name of this new study paradigm (Teixeira, Jabbour, de Sousa Jabbour, Latan, & De Oliveira, 2016). A lot of work has been done on the strategic planning of making environment green and sustainable during last two decades (Fawehinmi, Yusliza, Wan Kasim, Mohamad, & Sofian Abdul Halim, 2020).

Role of Human resource management is analyzed by Chaudhary, Nasir, Rahman, & Sheikh, 2023;Jabbour, Santos, and Nagano (2008) in making the small and large scale industries, environmentally sustainable. The importance of GHRM is demonstrated by the fact that it has become a crucial management technique that aids businesses in lowering their carbon footprints and improving their environmental quality (Yong et al., 2019). According to the previous literature, green hiring, green training, green enactment, and green recompense management are among the fundamental GHRM activities (Jiang et al., 2022; Roscoe, Subramanian, Jabbour, & Chong, 2019). Recently, some excellent reviews (Paulet et al., 2021); (Lu, Cai, Liu, & Chen, 2022) have also been published in an effort to comprehend the development of the subject. These reviews were very helpful and greatly aided the field's expansion. The core objective of the study is conducting bibliometric analysis by using Scopus database. The following questions were supposed to seek answer in this study;

1. Who are the co-authors contributed to the Green Human Resource Management literature?
2. What are the top source journals in GHRM?
3. What are the key words most commonly used in GHRM research?

3.   Methodology

This bibliometric analysis has been carried out on the data collected from the world's popular database Scopus, which best known database around the globe. Scopus presents a wide range of data on numerous research areas like business studies, management, accounting, finance and many more subjects of social sciences. Bibliometric analysis not only helps in exploring a huge data but also facilitates in organization and analysis of data, it provide a comprehend knowledge of previous research and future trends in ultimate developmental (Albort-Morant & Ribeiro-Soriano, 2016). Indeed, because to the meticulousness of bibliometric assessments, it has received particular attention in a number of fields, including social entrepreneurship, management, knowledge management, education, leadership including green human resource management (P. C. Bahuguna, Srivastava, & Tiwari, 2022; Batistič, Černe, & Vogel, 2017; Gaviria-Marin, Merigó, & Baier-Fuentes, 2019). Recently, many journals have used this practice to provide a summary of their articles. Large-scale statistical data can be compiled by Scopus, SciELO, Google Scholar, and Web of Science (WoS), thus bibliographic information can be gathered from these databases (Albort-Morant & Ribeiro-Soriano, 2016).

3.1.   Research Design

For this investigation, 486 records were chosen from the Scopus support database's search engine. All the documents in the context of Green HRM and GHRM are searched first, from the titles, key words and abstracts. Authors, languages, journals, nations, and knowledge fields served as the study's bibliometric indicators. This study includes 486 documents based on journal articles only. Data was gathered in four data sets, at first, data was collected ranging from 2008 to 2022. Further data sorting was done from 2013-2022 (10 years research data matched from titles, keywords and abstracts) which was 473 in number. At third phase, we found 476 journals in English language, 3 in German, 2 in Arabic and Spanish, and 1 in Chinese language (Li, Bai, Yu, Meo, Anees, &. Rahman, 2022; Khoula, Rahman, Idress, 2022; Zulfiqar, Ansar, Ali, Hassan, Bilal, & Rahman, 2022). Moreover, journal based data was counted to be 427 including journal of cleaner production, journal of hospitality and tourism management, international journal of hospitality and management, review of managerial science, international journal of man power, employees relations, sustainability (Switzerland) and more. A brief description of data analysis is presented in table 1. In addition country vice analysis was sown in table 2. Where China is holding a higher share in research with 88 research articles, Malaysia stand on the second, while Pakistan on the third place.
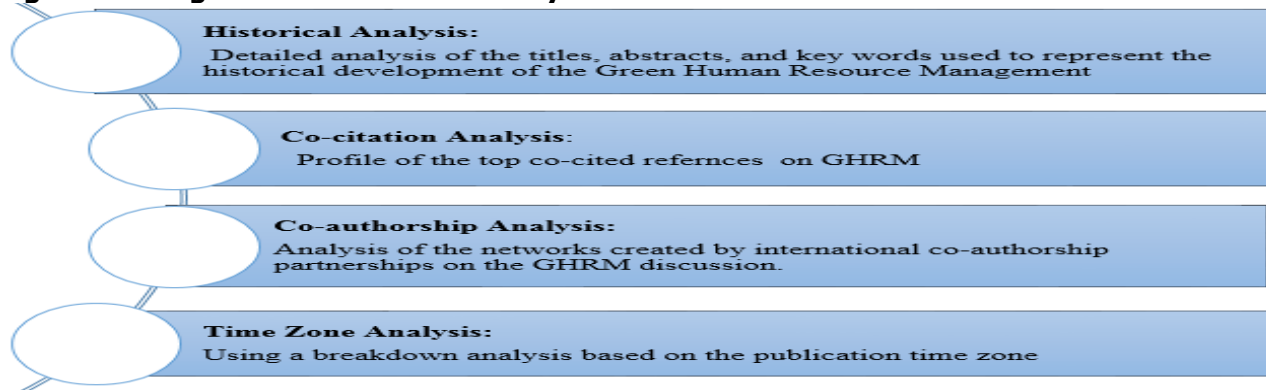
Table 1: Criteria for the selection of documents from Scopus

Serial	Search Steps	Records
1	All the documents with the word "Green Human Resource Management, GHRM and Green HRM in the title, abstract and keywords	489
2	Limit to 2013-2022	473
3	Limit to language: English	476
4	Journals	427

3.2. Stages of Bibliometric Analysis

We have applied the classic full counting approach to build bibliometric networks. A 4-stage process has been opted to do analysis of the data. At first historical analysis was being done, in the second phase co-citation analysis was done by using VOS viewer software of analysis. Further, analyses were done on the basis of Co-authorship and break down analysis with respect to time zone.

Figure 1: Stages of Bibliometric Analysis

Historical Analysis:
Detailed analysis of the titles, abstracts, and key words used to represent the historical development of the Green Human Resource Management

Co-citation Analysis:
Profile of the top co-cited refernces on GHRM

Co-authorship Analysis:
Analysis of the networks created by international co-authorship partnerships on the GHRM discussion.

Time Zone Analysis:
Using a breakdown analysis based on the publication time zone

4. Data Analysis Results

4.1. Co-Authorship Analysis: Authors Based Analysis

Table 2 below shows the top 20 authors of the world , who worked on the theme of Green Human Resource Management since 2008 to 2022. Table reveals that Jabbour c.j.c with 16 articles and 1855 citations, Ramayah t. with 10 articles and 417 citations, Yong j.y, with 9 articles and 360 citations, Chiappetta joubbour c.j wit 9 articles and 748 citations, Yusliza m.-y, with 8 articles and 450 citations, Teixeira a.a with 7 articles and 257 citations, Guerci m. with 7 articles and 640 citations, Renwick d.w.s with 7 articles and 483 citations etc., are the co-authors whose contribution toward GHRM is appreciable. On the other hand, figure 3 shows the number of articles published by these authors during 2008-2022.

**Figure 2: Most prominent authors in GHRM and their co-authorship analysis**
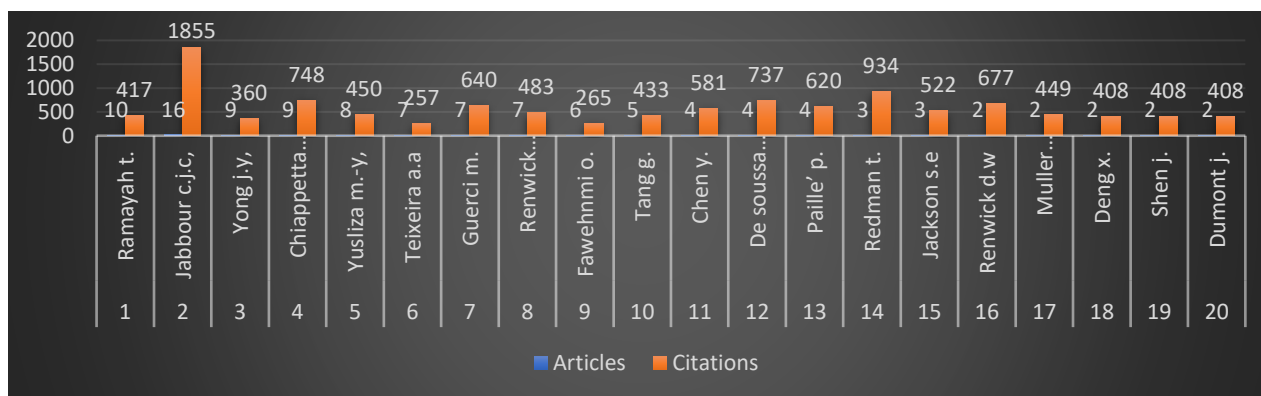
Graphical representation of the co-authors analysis vividly explains the relevant statistics related to green human resource management. Vertical bars shows the level of citations of top 20 co-authors (Fig. 2). Number of articles are explained with different colour schemes in pie-diagram (Fig.3), Jabbour c.j.c has written 16 articles, Ramayah t. 10, yong j.y & chiappetta jabbour c.j 9 , yusliza m.-y 8 articles

Table 2: Top 20 Co-authors in research on Green HRM

Sr.	Authors	Articles	Citations
1	Ramayah t.	10	417
2	Jabbour c.j.c,	16	1855
3	Yong j.y,	9	360
4	Chiappetta jabbour c.j,	9	748
5	Yusliza m.-y,	8	450
6	Teixeira a.a	7	257
7	Guerci m.	7	640
8	Renwick d.w.s	7	483
9	Fawehnmi o.	6	265
10	Tang g.	5	433
11	Chen y.	4	581
12	De soussa jabbour a.b.l,	4	737
13	Paille' p.	4	620
14	Redman t.	3	934
15	Jackson s.e	3	522
16	Renwick d.w	2	677
17	Muller camen m.	2	449
18	Deng x.	2	408
19	Shen j.	2	408
20	Dumont j.	2	408

Figure 3: Article published by co-authors
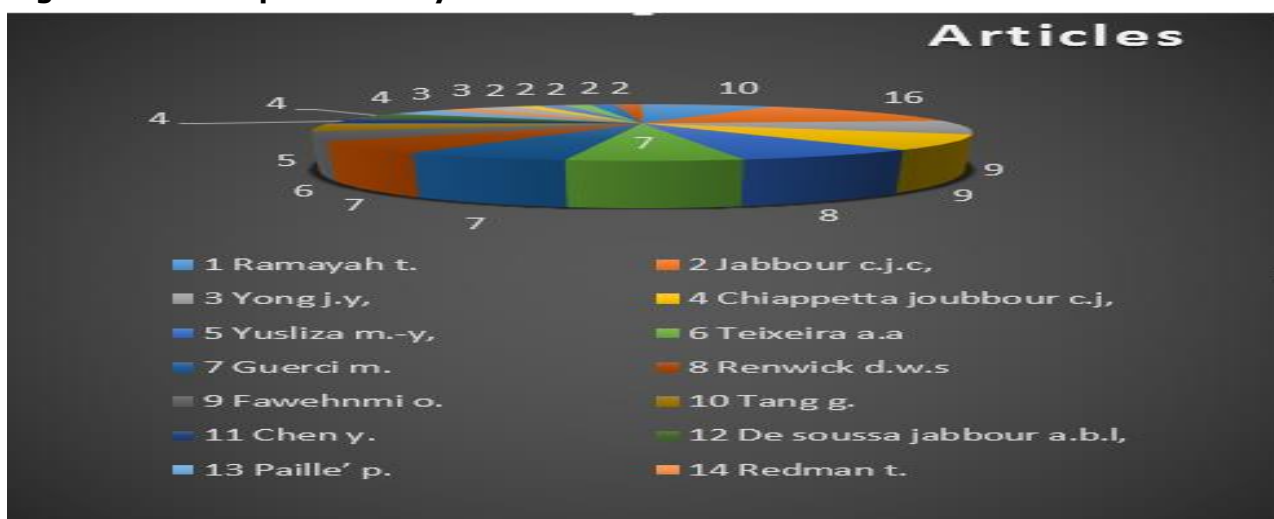
4.2. Country vice Analysis of Co-Authorship

Co-author is a person who has significant contribution in research article of a journal but not a leader researcher in the article. Many of the researchers around the globe has working collaborations to the authors of other countries. Their main responsibility is the editing and upgrading of the article. Scopus database analysis of Green Human Resource management from 2008-2022 shows the major contributing countries in the field. Table 3 below shows the most influential countries who are working co-authorship, China's contribution toward green human resource management is really acknowledgeable with 88 documents and 2460 citations. Malaysia, Pakistan, India and UK are the second, third, fourth and the fifth countries with 79, 72, 64 and 47 documents with co-authorship.

Another important method of year vice data anlysis in bibliometrix is over time production graph constructed on bibloshiny. Before we go into further detail, it is important to note that while traditional business ethics research can be classified as belonging to the fields of business, management and accounting, economics and finance, and social science, it has also been used in a variety of multidisciplinary contexts. Countries production graph over time interprets the effort of countries to reach the sustainability goals 2030 by making their organizations green and environment friendly. It is obvious from this statistical analysis that Asian countries are contributing more and more from last 2 decades. These counties include

China, Malaysia , Pakistan, India, and United Kingdom. Among all these countries, China is trending high while Malaysia lies on the 2nd stage in the research.

Table 3

| Countries	Documents	Citations	Countries	Documents	Citations
China	88	2460	Indonesia	18	370
Malaysia	79	1528	Italy	18	1194
Pakistan	72	1206	Thailand	15	327
India	64	912	United-Arab Emirates	13	716
United Kingdom	47	2599	Czech Republic	11	387
Australia	36	1505	Canada	11	642
France	29	1829	Bahrain	10	79
United states	27	1721	Bangladesh	10	58
Brazil	26	2013	Ghana	8	117
Saudi Arabia	21	381	Vietnam	7	208

On the other hand, researcehrs from european union are also contributing in the environemntal context of human resource management specifically U.K. contribution from China is 88 documents in total with total 2460 citations. Malaysia with 1528 citation of 79 research documents on the topic under discussion. Pakistan and India has also progressed in the field in last few years. Boteh of the coutries are exploring new research areas in green human resource management, their contribution is 72 and 64 documents respectively with 1206 and 912 citation. The second cluster from European union , U.K, Australia, France, United States, and Brazil has produced 165 artricles on the whole. Also the Saudi Arabia has a significant contribution in this field of research with 21 research documents. Fig. 4 countries production and Fig. 5 shows the country collaboration map with orange curvy lines. The country collaboration map hhas derived by using the bibloshiny software.

Figure 4: Country's production over Time
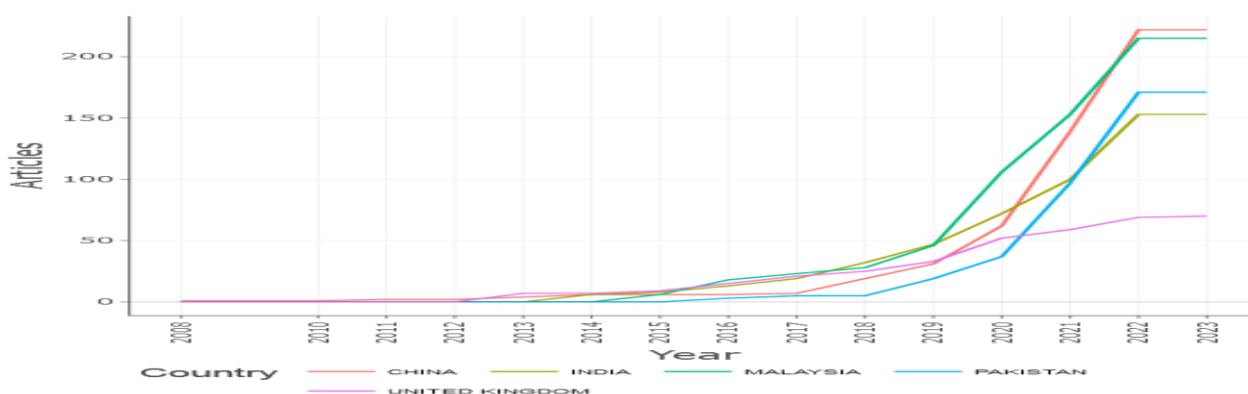
Figure 5: Country Collaboration Map 2022 (Bibloshiny)
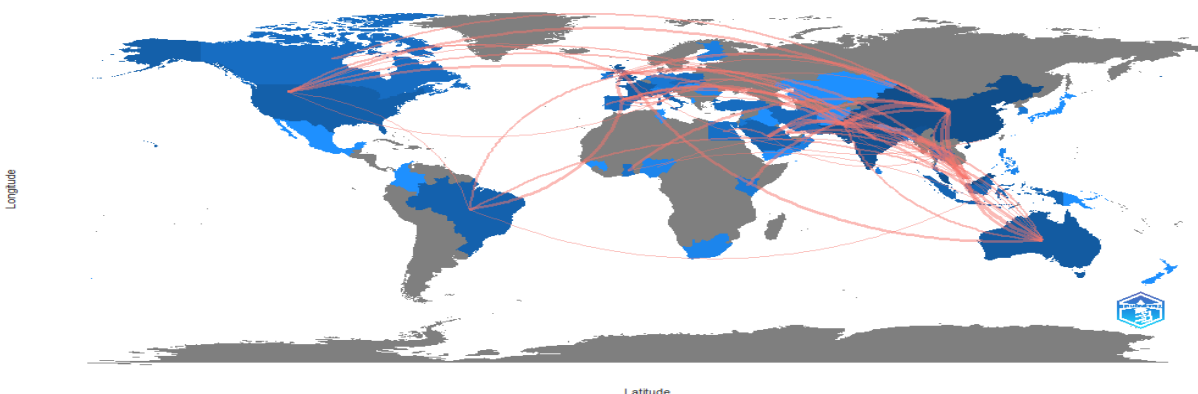
3.3.   Co-Citation Analysis

The frequency with which two texts are quoted in tandem by other documents is known as co-citation. Two documents are considered to be co-cited if at least one other document references them both. The term was first introduced by Henry Small in 1973 as an indicator of subject similarity analysis (Small, 1973; Chaudhary, Nasir, Rahman, & Sheikh, 2023; Khan,

Rahman, Fiaz, 2023; Usman et al , 2023). This article has gone through the peer-review process and has been influential in the laundry industry, with a total of 36 articles published. When it comes down to it, it is not surprising that only three journals - Sustainability (Switzerland), Global Manpower Magazine and Business Responsibility and Environmental Management - played a significant role in this case (Zainab, Qaisra, Hassan, Haris, Rahman, & Ali, 2023). Table 4 below shows the top 20 journals and their technical information in the field of green HRM.

Table 4: Co-Citation Analysis by Journal

Journals	Documents
Asia pacific journal of human resources	5
Benchmarking	12
Business strategy and the environment	7
Cogent business and management	5
Contemporary developments in green human resorce management research: towards sustainability in action?	8
Corporate social responsibility and environmental management	14
Environmental science and pollution research	6
Frontiers in psychology	9
International journal of hospitiality management	6
International journal of human resource management	14
International journal of manpower	26
International journal of productivity and performance management	5
International journal of sustainable development and planning	5
Journal of cleaner production	36
Proceedings of the internaitional conference on industrial engineering and operations management	6
Sustainability (Switzerland)	31

It is imperative to identify deficiencies and cover them up with appropriate measures. This can only be accomplished by raising the standard of research and motivating researchers to conduct realistic and scientific research in under-diagnostic areas. To improve the quality of research articles, international standards have been established. The term is also known as the impact factor. Generally known as the impact factor.

Figure 6: Top source journals for co-citations
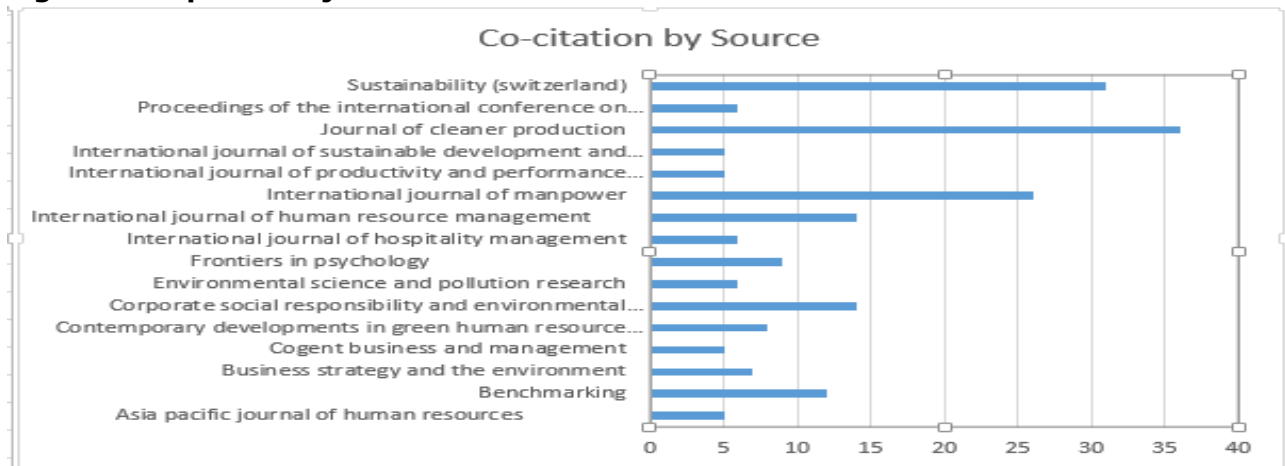
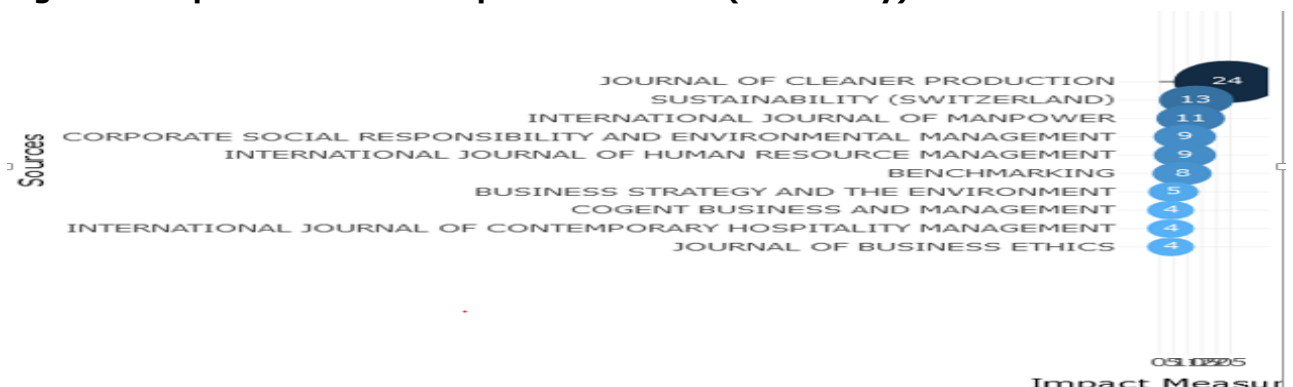**Figure 7: Impact Measure of Top Journals 2022 (Bibloshiny)**

Fig. 7 Impact Measure of Top Journals 2022 (Bibloshiny). The researchers have to publish their research articles in the journals having high impact factor. Coming to the GHRM, Journal of Cleaner production is highly impact journal among all other journals (Fig. 7). On the other hand, Fig. 6 interprets the significant contribution of JCP (Journal of Cleaner Production) towards GHRM with 36 documents on the following topic. Sustainability (Switzerland) is the second impact journal in GHRM with 31 publications. While International Journal of Man Power hold the 3rd place in this race of sustainability.

Figure 8: Cluster of journal on GHRM (Newtwork visualization by using VOS Viewer)
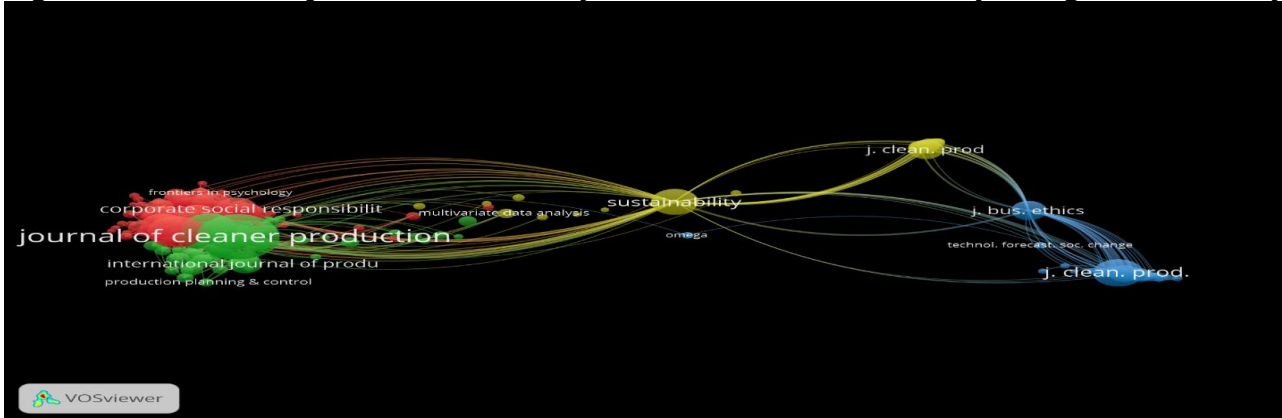

Another prominent method of bibliometric analysis is Network visualization (Fig 8). Higher intensive color spots depicts the major contributing journals around the world. Chief research area are highlighted in co-citation network, denoted by the green, red and yellow visualizations. That spectacles the connectivity of journal of cleaner production, international journal of production (supply chain management), journal of corporate social responsibility and business management, sustainability and so on.

3.4. A Referential Co-citations analysis

Data collected from Scopus data base has been catagorized on the base of co-cited refernces with full counting was 27881 cited references and futher short listed the citations with minimum 20 cited references. As a result only, 28 meet the threshold. Detail description is presented in the A serial vice descriptive analysis helps in understanding the reference based study of co-citation. Renwick along d.w., Maguire and Redman worked on green human resource management, a research agenda review (2013) published in the International Journal of management reviews. (Paillé et al., 2020). Dumont and Shen's major work was on the effect of green HRM on employees and their workplace behavior (Dumont, Shen, & Deng, 2017). Development of measurement scale in research is very crucial to reach the results ultimately. In this regard Tang, Chen, Jiang and Paille has put their efforts together on the topic of green HRM (Tang, Chen, Jiang, Paillé, & Jia, 2018). Moreover, a review on GHRM research has been written by Ren et al.,(2018) (Ren, Tang, & E Jackson, 2018). Paillé, Chen, Boiral, and Jin (2014) has analyzed the environmental impact of green HRM. It was an employee level study. While Jackson and Seo (2010) emphasized on the strategic greening of HRM. Practices of GHRM in Palestine is also a most cited research article on the topic by Masri and Jaaron (2017). Environmental impacts of GHRM were studied in Brazilian industries in 2008 and 2010 by Jabbour, Santos, Fonseca, and Nagano (2013). Likewise, many other research works has been done on the topic of GHRM.

Figure 9: Cluster of Researchers working on Environmental impacts of HRM (Overlay Network)
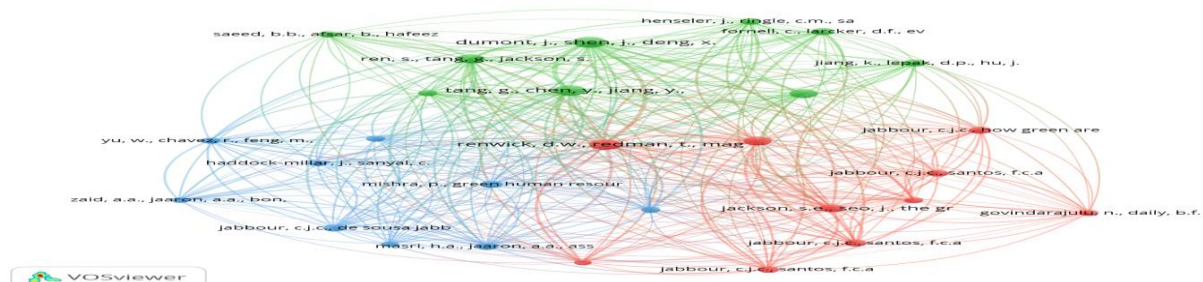
3.5. Keywords Co-occurrence Analysis

Under this head, keywords occurrence technique has been employed to classify the topics revolving around greening of human resource management. Fig. 9 denotss a simplified summary of co-occurrence study. The dramatic increase in keyword usage reveals new tendencies in research. The magnitude of the nodes indicates the main study areas for GHRM over various time periods. Recent research areas in the field are nodded as yellow. Main topics in the latest research are green intelligent capital, green labor force, innovation, human capital, green transformational governances, green economy, green behavior and green creativity etc. while the color blue showed the trends followed in 2019 onwards, leading to green and then yellow. Basic area of discussion in 2019 was sustainable development in environmental context. Environmental performance, sustainability, GHRM and structural modelling of GHRM were the key study areas in 2020 and early 2021.

Figure 10: All keyword co-occurrence Analysis trough Cluster Diagram & Word Map
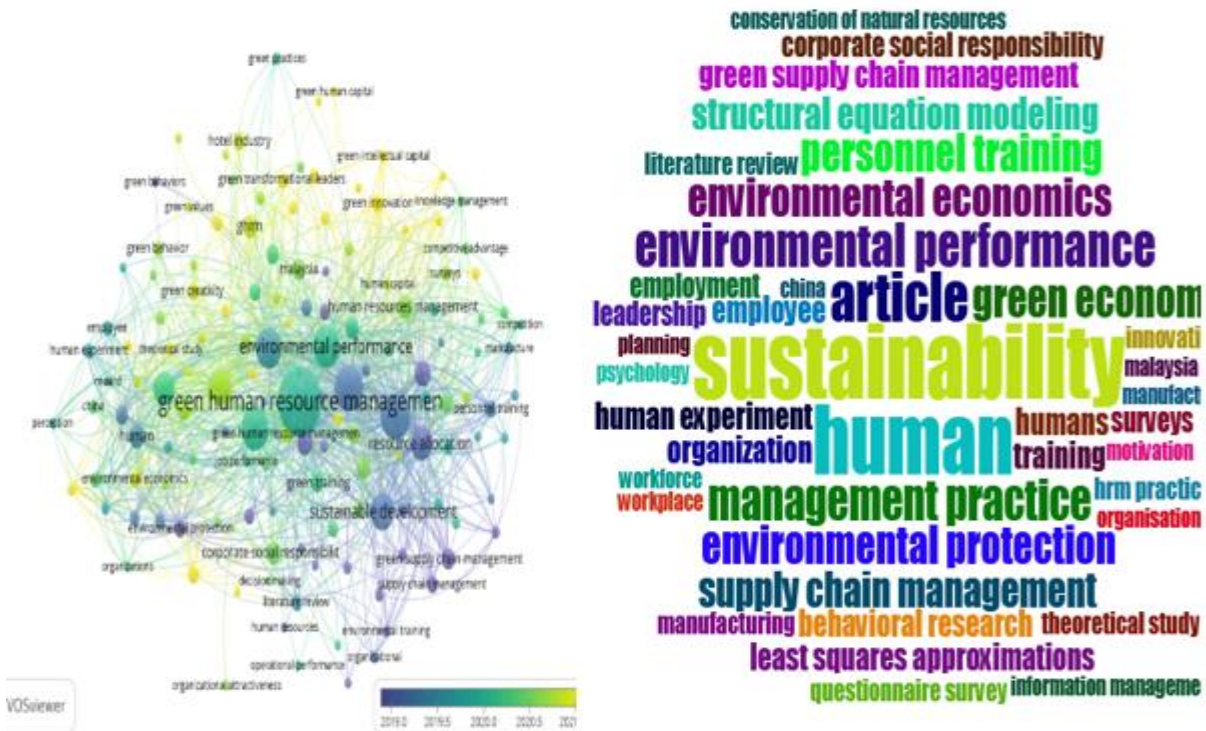
According to Callon, Courtial, Turner, and Bauin (1983), confluence analysis aids in understanding the structural understanding of the content under discussion. The most constantly used keywords in GHRM studies, according to the analysis, are sustainable development, environmental protection, operation practise, mortal training, environmental protection, force chain operation, green frugality, operation, and behavioral studies (Figure 10). The VP exploration motifs and green HRM trends for the time are depicted in a cluster illustration. Tree plot analysis is critical for relating promising exploration areas and gaps in the GHRM exploration discussion because experimenters constantly use multiple keywords. Figure 11's nested blocks depict the keywords used in scientific papers until 2022. The color intensity and confines of the blocks in the tree map illustration indicate the relationship between keywords.

Figure 11: Word Tree Map

The tree chart highlights the clustering of keywords that are likely to be related to business ethics. Labor force make up 10 of the aggregate. Environmental operation accounts for 9, sustainable development accounts for 8, resource operation accounts for 7, resource allocation accounts for 7, and so on.

4. Discussion and Conclusion

Following its infancy, the green HRM narrative is continuously expanding and gaining the interest of both instructors and business. The study added to improve the GHRM literature by pinning down significant authors, key themes, and key publications. The study shows that Dumont, Jabbour, paile, Renwick, Jackson and Tang are the prominent authors on GHRM. Coming to the country vice grading of research articles on green human resource management, China is at top of the list by producing higher number of researchers, Malaysia stand 2nd in this race, Pakistan at 3rd. Furthermore, India and United Kingdom are at 4th and 5th position respectively. On the whole they share 72% of the total contribution in the field (350 articles out of 486). Out of which 476 were written in English language. Key words cluster analysis elaborates the three types of strands in research. Initially the conceptual frameworks of GHRM, next strand followed by the green training and performances, recent strand expand to the green behavior its outcomes, green leadership, green innovation and intellectual capital etc.

4.1. Practical Contribution and Implication

The most significant authors, highest pertinent and cited journals, most quoted publications, and the clusters for GHRM research are all covered in this study, which is an addition in the knowledge of GHRM. The document aids line managers, top management, and HR professionals in making well-informed decisions about developing an HR architecture and fosters a culture of support so they can engage in behavior that is in line with strategy. Furthermore, by offering thorough details on the authors, published papers, reliable journals, and potential future study questions, it aids further research.

4.2. Future Directions

The notion of GHRM is currently restricted with Human Resource practices (engagement, exercise, and repayment) and to characteristics (the majority of research are only for Asian nation), but it is possible to expand it to misc. HR practices (like business relatives) in highly established nations and productions, which will aid the perception's development. Since GHRM is still in its infancy, making generalizations about it without supporting data would be inappropriate. The following study areas are suggested on basis of our reviews; On the front of the theoretical framework, there are not many investigations. Therefore, additional study that bases the factual research on solid theoretical frameworks (such as stakeholder theory, RBV) is required for the growth of the GHRM literature. Any HR design needs HR managers to function well (Ulrich & Brockbank, 2016; Yong & Mohd-Yusoff, 2016). (Yong et al., 2020; Yusliza, Othman, & Jabbour, 2017). But there isn't any GHRM literature available in this area. Future research is therefore required to find out what abilities and knowledge HR professionals need in order to develop and apply GHRM. Moreover, it is also needed to discuss and analyze the role of employees and behavior on psychological basis to understand the logic behind the deficient green environment. Workplace environment and strategic planning of the organizations are also vital for the maintenance of the green environment within the organizations that are directly in touch with the human resource management. New horizons are waiting to be discovered by the GHRM. Furthermore, green intellectual capital(GIC) and green capital formation are still under evaluated subjects in the social and corporate sciences. Most of the times, research work is associated with the hospitality industry, while the concept is not limit to any specific industry or business, yet it is a term with wide practical implication. Hence, new researchers must bring into light the new fields in research like services sector, practical sciences, manufacturing, chemicals and civil industries.

4.3. Limitations

The recent study has also some limitation like in any other study. Firstly, the following research has utilized the VOS viewer for data analysis and Scopus database for data collection. New researchers may employ some other software for data analysis with Dimensions, Web Of science or Pub Med. Secondly, the study has selected data on GHRM from 2008-2022 pertaining the journals only. Books and documents are ignored completely. Thus, future

researchers may extend the data to the previous years by including some other documents too. However, the following study may provide a direction to the future researchers to investigate GHRM at a broader level.

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