

Bibliometric Analysis: Green Human Resources Impact on Performance Management

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Abstract

Purpose –This study aims to evaluate to scholarly performance of articles on Green Human Resource Management (GHRM) and analyze their impact, while also providing a scientific mapping of the literature concerning GHRM and its influence on organizational performance.

Methodology –This study employed bibliometric analysis to map the intellectual landscape of GHRM and to assess the performance and impact of related scholarly publications. The bibliometric techniques applied include performance analysis and science mapping. Data for the analysis were sourced from the Scopus database.

Findings –The analysis indicates a growing trend in GHRM-related research publications between 2012 and 2023. The bibliometric findings indicate that GHRM positively contributes to sustainable and environmental performance, supports green supply chain management practices, and fosters pro-environmental employee behavior. Additionally, several studies underscore the positive impact of GHRM on both employee environmental attitude and overall organizational performance.

Research Limitation –This study is limited by the scope of data available within the Scopus database. Furthermore, the analysis is constrained by its focus on selected scientific publications, potentially excluding other relevant sources of information.

Practical Implications –HR professionals and policymakers should integrate these practices strategically and encourage collaboration across departments to meet stakeholder expectations and sustain competitiveness.

Introduction

Today, issues related to *sustainability* are getting higher. Data from NielsenIQ (2023) shows that 69% of global consumers state that *sustainability* issues are more important than two years ago. According to the United Nations Development Program (UNDP, 2023), *sustainability* is an effort to protect the earth based on the principle that there must be a balance between social, economic, and environmental sustainability.

Increasing awareness of *sustainability* issues will affect the company's behavior in running its business. Some oft-cited Scopus articles in the fields of business, management, and accounting with discussions related to *sustainability* (for example: Seuring and Muller, 2008;

Carter and Rogers, 2008; Bocken *et al*, 2014) refer to the concept of Triple Bottom Line. This concept was initiated by Elkington in 1997 through his book entitled "Cannibal with Forks: The Triple Bottom Line of 21st Century Business". According to him, companies are expected not only to focus on economic benefits, but also to balance them with social and environmental impacts (Elkington, 1997). This concept is also known as the 3Ps: *profit*, *people*, and *planet*. In line with this, McKinsey & Company (2023) stated, from the results of its study, there are more than 60% of respondents willing to pay more for products with *sustainable packaging*.

Therefore, nowadays, more and more companies have run *sustainability* programs. A survey conducted by KPMG in 2022 stated that as many as 96% of G250 (250 largest companies in the world) have conducted *sustainability reports*, while in N100 (100 largest companies in each country in 58 countries), sustainability reports have been carried out by 79% of companies (KPMG, 2022). This report also states that there is an increase in *sustainability* reports for global companies every year (KPMG, 2022).

Sustainability practices in companies are discussed in various fields of science, one of which is business, management, and accounting. In this scientific field, companies carry out *sustainability practices* (green workplace) through all management functions, namely: finance, operation, marketing, and human resources (Bahuguna *et al*, 2023). In each of these management functions, it has often been studied, for example: *finance* (e.g.: Weber *et al*, 2008 which explains the relationship between corporate sustainability practices and *credit risk rating*), *operation* (e.g.: Kleindorfer, 2009 which elaborates *sustainability* practices in the field of *operation management*), *marketing* (e.g.: Michaud and Llerena, 2010 who conducted experiments related to consumer interest in buying remanufactured products), and human resources (e.g.: Singh *et al*, 2020 which discussed the role of human resources management in *sustainability* practices). There are also many studies in this scientific field that examine the relationship with, for example: *business performance* (e.g.: Teece, 2007), *environmental performance* (e.g.: Clarkson *et al*, 2006), and *competitive advantage* (e.g.: Rao and Holt, 2005). When looking at data from Scopus, the results of studies in the fields of business, management, and accounting with the keywords "*sustainable*", "*sustainability*", "*green*", and "*environment*" have increased consistently from year to year with a peak publication in 2023 of 21,086 (Scopus, 2023). This shows that *sustainability* studies in relation to the management function are getting greater attention every year.

In the field of *human resources*, the practice of the sustainability concept is also known as the concept of Green Human Resources Management (GHRM). This concept refers to the use of *human resources management* to strengthen employee *sustainability* practices and increase their commitment to environmental issues (Masri and Jaaron, 2017). This happens because, as explained earlier, *stakeholder pressure* on organizations to adopt environmentally friendly businesses is increasing from year to year (Mousa and Othman, 2019). Through GHRM practices, it is expected that organizations will have a positive impact, for example on: *environmental performance* (e.g.: Paille *et al*, 2013), *profit* (e.g.: Karman, 2020), and *employee satisfaction* (e.g.: Harvey *et al*, 2013).

Due to the rapid development of knowledge about *sustainability* related to—in particular—*human resources management* (i.e. GHRM) and its impact on business, social, and environment, it is necessary to map knowledge in this field. One way of mapping this is through bibliometric analysis. The role of bibliometric analysis is to obtain a basis for developing science (Donthu *et al*, 2021) by describing views on structures, relationships, and topics in related sciences (Zupic and Cater, 2014), in this case GHRM. Through searches in the Scopus

database, several bibliometric analyses of GHRM have been performed to map GHRM in general (Tutar *et al*, 2023; Akhtar *et al*, 2023; Farrukh *et al*, 2022; and Khan and Mukhtar, 2020) as well as along with human resources practices (Bahuguna *et al*, 2023). In addition, Choudary and Datta (2023) also conducted a bibliometric analysis of GHRM in general and looked at the relationship between GHRM and *employee green creativity* (EGC). Some of these articles use data up to 2020 (Khan and Mukhtar, 2020), 2021 (Bahuguna *et al*, 2023; and Tutar *et al*, 2023), 2022 (Akhtar *et al*, 2023), and some are based on 11 Scopus indexed articles (Choudary and Datta, 2023).

However, no bibliometric analysis has raised GHRM and its impact on performance¹. In addition, given that several studies used data up to 2022, this article will update GHRM's bibliometric analysis with the latest year, which is 2023. Therefore, this article will conduct bibliometric analysis along with content analysis of GHRM and its impact through the Scopus database until 2023 within the scope of business, management, and accounting scientific fields.

Method

Groos and Pritchard (1969) stated that the word "*bibliometrics*" means applying mathematical and statistical methods to books and other communication media. This description was then developed by Donthu *et al* (2021) who stated that bibliometric analysis is an analysis that uses a quantitative approach (e.g.: *analysis of relationships between citations*) on bibliometric data (e.g.: number of citations). Furthermore, this analysis uses bibliometric data to be processed into performance data (e.g.: *performance: articles, article publishers, and authors*) as well as *mapping/relationships in science* (e.g.: mapping/relationship between authors and keywords) (Zupic and Cater, 2014). The purpose of bibliometric analysis is to provide conclusions from bibliometric data to describe the structure and topics that develop in science (Donthu *et al*, 2021) and their dynamics (Zupic and Cater, 2014). Through bibliometric analysis, various benefits in science will be obtained, namely: reviewing broadly, getting knowledge *gaps*, getting new ideas for research, and informing the position of research contributions (Donthu *et al*, 2021).

In order to the study to be structured, it requires the use of a *framework*. This study used a bibliometric analysis framework by Donthu *et al*. According to Donthu *et al* (2021), the bibliometric analysis procedure consists of four stages: (1) defining the purpose and scope of the study, (2) selecting bibliometric analysis techniques, (3) designing and retrieving bibliometric data for analysis, and (4) running bibliometric analysis and reporting study findings. The selection of Scopus as the primary data source was made due to its extensive coverage of reputable journals in the field of business and management, adequate metadata consistency, and ease of access and integration with bibliometric analysis software. Nevertheless, the use of only one database is a limitation of this study, so the analysis results may not cover all literature related to GHRM from other sources such as Web of Science or Google Scholar. Future research is advised to combine various databases to obtain a more comprehensive picture.

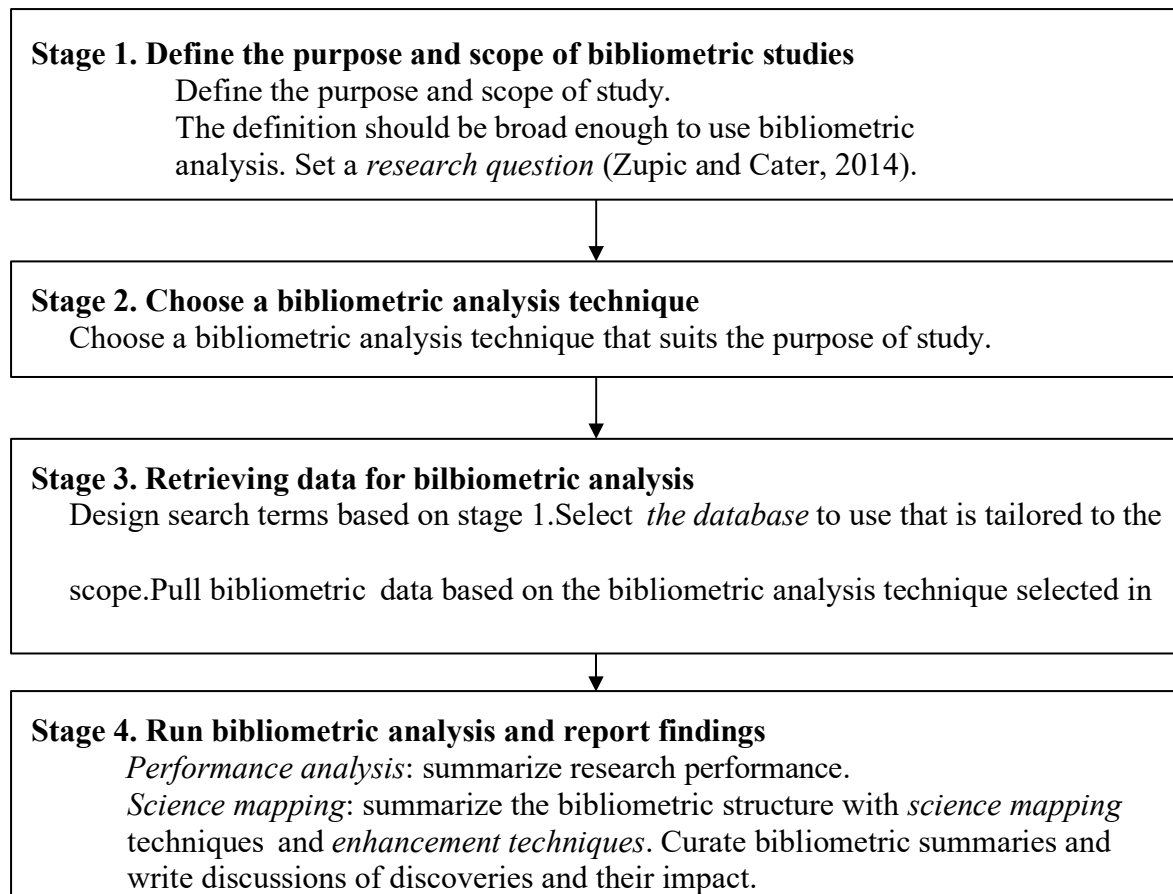


Figure 1. Bibliometric analysis procedure by Donthu *et al* (2021) with adjustments. In stage 1, a description of the stages from Zupic and Cater (2014) was added.

Aims and Scope

This research provides a new contribution by conducting a bibliometric analysis up to the year 2023, which has not been done by previous studies that generally stopped at 2020-2022. This study specifically focusses on the performance impact of Green Human Resource Management (GHRM), which is an important aspect yet not extensively discussed comprehensively. Additionally, this study integrates bibliometric methods with content analysis to provide a more in-depth and holistic mapping of knowledge related to GHRM and its impact on organizational performance in the context of sustainability.

Previous bibliometric studies of *GHRM* in the Scopus database have focused on GHRM in general and its relation to several specific concepts, namely: *human resources management* (HRM) practices and ECG. In addition, no articles using data have been found until 2023. Therefore, this article aims to: (1) know the performance of GHRM articles and their impact on their performance and (2) know the *science mapping* related to GHRM and the impact on its performance.

Meanwhile, GHRM is an application of the concept *sustainability* in HRM who are in the fields of business, management, and accounting. Therefore, also so that this article has a focus, this article uses this field as a scope of study. There is no limit to the number of bibliographies as well as a specific scope of time. This article uses Scopus as a source *Database* which will be used for bibliometric analysis.

Bibliometric Analysis Technique

According to Donthu *et al* (2021), there are two techniques in bibliometric analysis: *performance analysis* and *science mapping*. In line with Donthu, Zupic and Cater (2014) stated that *performance analysis* aims to evaluate contributions and publications in related fields of

science, while *science mapping* aims to elaborate relationships, structures, and dynamics in related sciences.

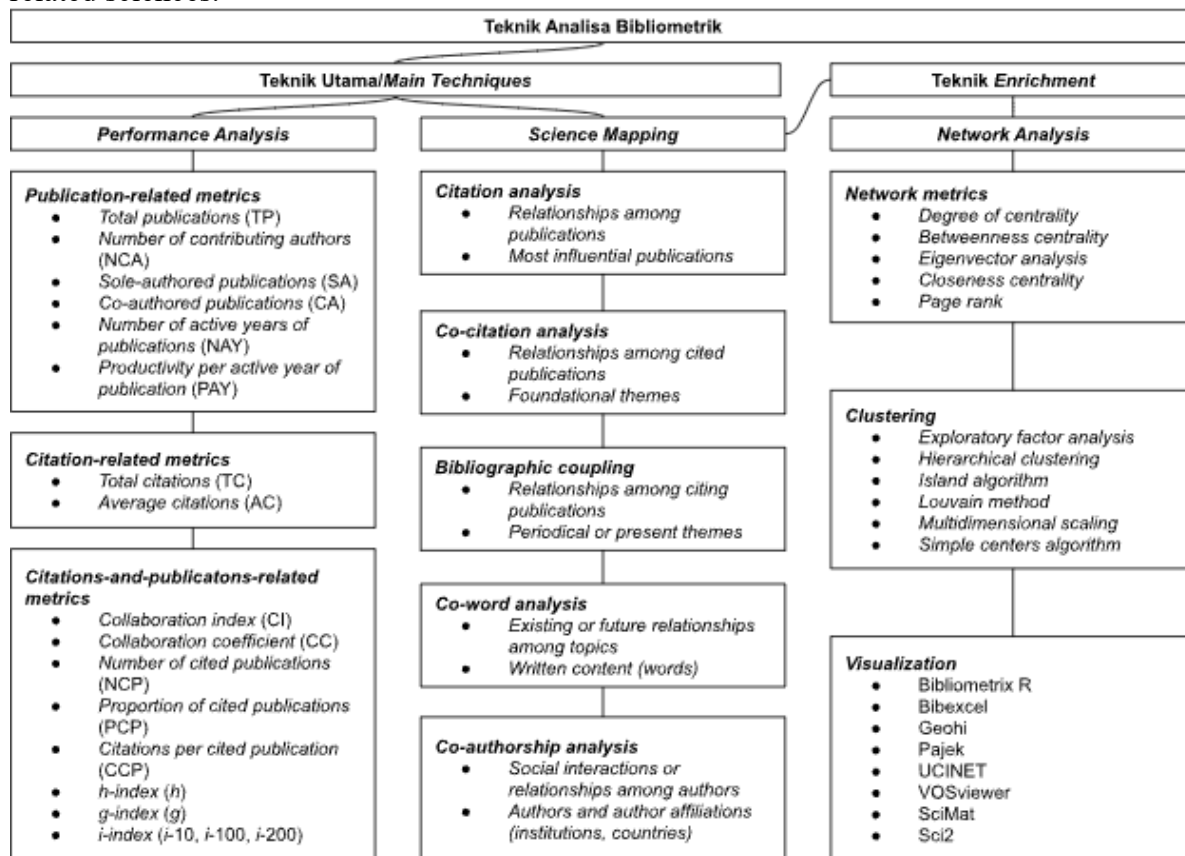


Figure 2. The bibliometric analysis toolbox by Donthu *et al* (2021) with adjustments.

Design and Data Collection

The study uses "Green Human Resources Management" as its topic. The Scopus database is used to retrieve bibliometric data. To get it, a search is done in the realm of *article title*, *abstract*, and *keyword*. The subject area used is *business, management, and accounting* with the source type is a *journal* that uses English. The bibliometric data was taken on October 17, 2023. The keywords used in the search are: ("green human resource management" OR "green hrm" OR "ghrm" OR "sustainab* human resource management" OR "sutainab* hrm") AND impact* AND performance*.

From the search, 95 bibliometric data were obtained. There are three *error* data: one data does not discuss GHRM, while two data duplicate and does not discuss GHRM. Thus, the final and analyzed data amounted to 92 bibliometric data.

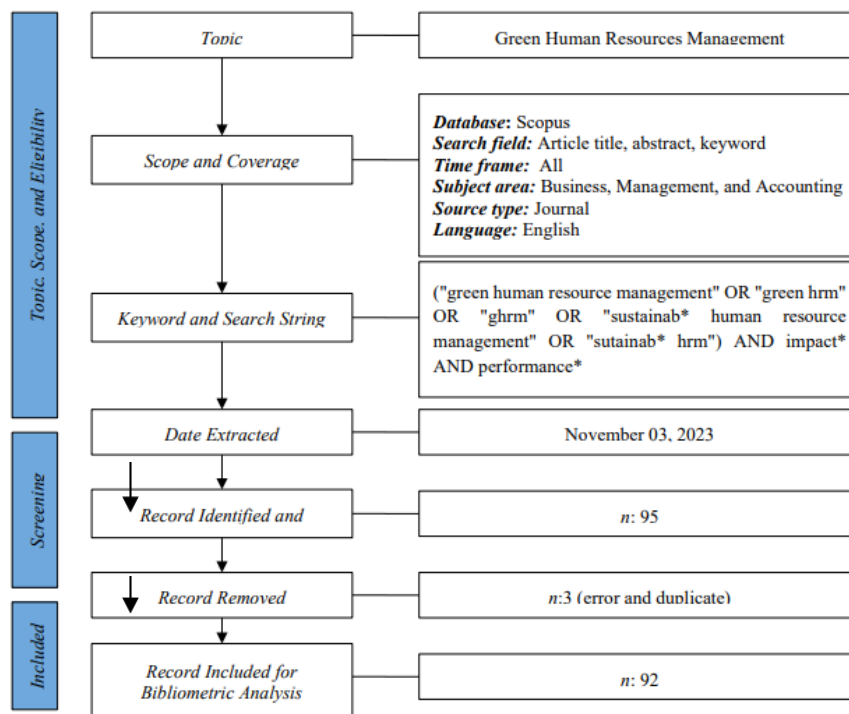


Figure 3. Design of bibliometric analysis studies. Using *the framework* from Zakaria *et al* (2021).

Findings Report

In addition to reporting descriptions of bibliometric analysis results, it is more interesting to be able to create in-depth discussions related to trends and reasons with in-depth discussions (Donthu *et al*, 2021). Zupic and Cater (2014) say that bibliometric analysis also requires interpretation through in-depth exploration of bibliometric data; Bibliometric analysis does not exclude reading bibliometric data thoroughly. In this way, the study of bibliometric analysis will gain its original benefit and purpose (*i.e.* mapping science).

Thus, this study will also use *content analysis* to get more comprehensive results. *Content analysis* analyzes documents obtained (Madeira, 2023) through in-depth reading to gain new knowledge and increase understanding (Krippendorff, 2019) in order to be able to explore the results of bibliometric analysis (Bhandari, 2022). Bibliometric data will be extracted and recorded in "conceptual records"; look for data that match the question / purpose of the study, for example: keywords, concepts, and differences and alternative perspectives of ideas (White and Marsh, 2006).

Result

Based on the results of the analysis, it was found that the trend of research *publications related to green human resources* from 2012-2023 has increased every year and in 2023 is the year that has the most publications related to Green Human Resources, more details can be seen in the picture below.

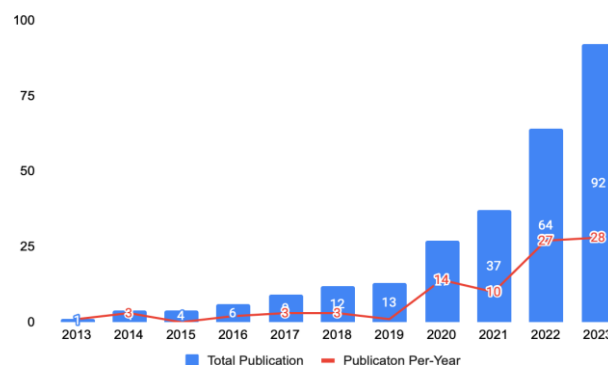


Figure 4. Graph of total publications as well as publications per year. Data from Scopus

In table 1. Shows that there are ten top journal sources and of the ten journals there is one journal that ranks at the top with the most publications on green human resources, namely the Journal of Cleaner production with a total of 10 times and followed by the International Journal of Manpower 6 times. While Asia Pacific Journal of Human Resources, International Journal of Human Resources, Corporate Social Responsibility and Environmental Management, Journal of Business Ethics three times each, and Benchmarking, International Journal of Scientific and Technology Research, International Journal of productivity and performance management, Foresight and STI Governance twice.

Table 1. *Top 10 journal source.* Data from Scopus.

Source	Number
Journal Of Cleaner Production	10
International Journal Of Manpower	6
Corporate Social Responsibility And Environmental Management	3
Asia Pacific Journal Of Human Resources	3
International Journal Of Human Resource Management	3
Journal Of Business Ethics	3
Asia Pacific Journal Of Business Administration	2
Benchmarking	2
Business Strategy And Development	2
Employee Relations	1

In table 2. Information can be obtained about the top 10 number of publications in each author, from the ten top 10 journals there are two authors with the most total publications, namely Bazrkar, A. and Zaid, A.A. as many as 3 publications. Then followed by the remaining 2 publications which were written by, altinay, L., Chiappetta Jabbour, C.J., Darvishmotevali, M., Feng, T., Guerci, M., Islam, M.A., Jaaron, A.A.M., Karatepe, O.M.

Table 2. *Top 10 publications per author.* Data from Scopus.

Name	Total Publication
Bazrkar, A.	3
Zaid, A.A.	3
Altinay, L.	2
Chiappetta Jabbour, C.J.	2
Darvishmotevali, M.	2
Feng, T.	2
Guerci, M.	2
Islam, M.A.	2
Jaaron, A.A.M.	2
Karatepe, O.M.	2

In table 3. Showing the top 10 publications by country, out of the ten journals shows that India and Malaysia are in first place with 14 documents. Then followed Pakistan with 13 documents. In the next order, there is China with 12 documents. After that, followed by the United States with 8 documents, followed by Saudi Arabia and the United Kingdom with 7

documents each. In the next order there is Indonesia with 6 documents. And in the last order there are France and Paletine with the publication of 5 documents each.

Table 3. Publications by country. Data from Scopus.

Country	Document
India	14
Malaysia	14
Pakistan	13
China	12
United States	8
Saudi Arabia	7
United Kingdom	7
Indonesian	6
France	5
Palestine	5

Citation analysis

In table 4. Showing that the top 10 citations based on author, of the ten journals there is Jaaron, Ayham A.M. ranks at the top with a total of 646 citations. In the next order are Guerçi, Marco., Longoni, Annachiara., Luzzini, Davide., with a total of 449 citations each. Next is Zaid, Ahmed A., with a total of 365 citations. Next is Talib Bon, Abdul., with a total of 363 citations. The next order is Masri, Hiba A., with a total of 283 citations. After that, there are Mousa, Sharifa K., Othman, Mohammed with a total of 242 citations each. And in the last order there is Anwar, Nosheen., with a total of 200 citations.

Table 4. Top 10 citation by author.

Name	Total Citation
Jaaron, Ayham A.M.	646
Guerçi, Marco	449
Longoni, Annachiara	449
Luzzini, Davide	449
Zaid, Ahmed A.	365
Talib Bon, Abdul	363
Masri, Hiba A.	283
Mousa, Sharifa K.	242
Othman, Mohammed	242
Anwar, Nosheen	200

Followed by a document entitled The impact of green human resource management practices on sustainable performance in healthcare organisations: A conceptual framework in 2020 and written by Mousa S.K.; Othman M., sourced from the Journal of Cleaner Production with a total of 242 citations. After that, there is a document entitled Deploying Environmental Management Across Functions: The Relationship Between Green Human Resource Management and Green Supply Chain Management in 2018 and written by Longoni A.; Luzzini D.; Guerçi M., sourced from the Journal of Business Ethics with a total of 202 citations. Then there is a document entitled Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus written by Anwar N.; Nik Mahmood N.H.; Yusliza M.Y.; Ramayah T.; Noor Faezah J.; Khalid W. by in 2020 sourced from the Journal of Cleaner Production with a total of 200 citations.

After that, followed by a document entitled Green Human Resource Management and

Employee Green Behavior: An Empirical Analysis written by Chaudhary R. in 2020 sourced from Corporate Social Responsibility and Environmental Management with a total of 194 citations. Then there is a document entitled The moderating effect of 'Green' HRM on the association between proactive environmental management and financial performance in small firms written by O'Donohue W.; Torugsa N.A. in 2016 and sourced from the International Journal of Human Resource Management with a total of 164 citations. In the next rank there is a document entitled Corporate social responsibility and firm performance in the hotel industry. The mediating role of green human resource management and environmental outcomes written by Úbeda-García M.; Claver-Cortés E.; Marco-Lajara B.; Zaragoza-Sáez P. in 2021 sourced from the Journal of Business Research with a total of 121 citations. In the last order, there is a document entitled Examining the influence of internal green supply chain practices, green human resource management and supply chain environmental cooperation on firm performance written by Agyabeng-Mensah Y.; Ahenkorah E.; Afum E.; Nana Agyemang A.; Agnikpe C.; Rogers F. in 2020 sourced from Supply Chain Management with a total of 112 citations.

Table 5. *Top 10 Citation by document.*

Author	Document	Year	Source	Citation
Zaid A.A.; Jaaron A.A.M.; Talib Bon A.	The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study	2018	Journal of Cleaner Production	363
Masri H.A.; Jaaron A.A.M.	Assessing green human resources management practices in Palestinian manufacturing context: An empirical study	2017	Journal of Cleaner Production	283
Guerci M.; Longoni A.; Luzzini D.	Translating stakeholder pressures into environmental performance – the mediating role of green HRM practices	2016	International Journal of Human Resource Management	247
Mousa S.K.; Othman M.	The impact of green human resource management practices on sustainable performance in healthcare organisations: A conceptual framework	2020	Journal of Cleaner Production	242
Longoni A.; Luzzini D.; Guerci M.	Deploying Environmental Management Across Functions: The Relationship Between Green Human Resource Management and Green Supply Chain	2018	Journal of Business Ethics	202
Anwar N.; Nik Mahmood N.H.; Yusliza M.Y.; Ramayah T.;	Green Human Resource Management for organisational citizenship behaviour towards the environment and	2020	Journal of Cleaner Production	200

Author	Document	Year	Source	Citation
Noor Faezah J.; Khalid W.	environmental performance on a university campus			
Chaudhary R.	Green Human Resource Management and Employee Green Behavior: An Empirical Analysis	2020	Corporate Social Responsibility and environmental Management	194
O'Donohue W.; Torugsa N.A.	The moderating effect of 'Green' HRM on the association between proactive Environmental management and financial performance in small firms	2016	International Journal of Human Resource Management	164
Úbeda -García M.; Claver - Cortés E.; Marco -Lajara B.; Zaragoza - Sáez P.	Corporate social responsibility and firm performance in the hotel industry. The mediating role of green human resource management and environmental outcomes	2021	Journal of Business Research	121
Agyabeng - Mensah Y.; Ahenkorah E.; Afum E.; Nana Agyemang A.; Agnikpe C.; Rogers F.	Examining the influence of internal green supply chain practices, green human resource management and supply chain environmental cooperation on firm performance	2020	Supply Chain Management	112

Citation Network Visualization

The citations network visualization shows the interconnectedness of items determined based on the number of times they quote each other. This analysis visualizes the observed document by associating it with other observed documents if there is a link in the document citation, which is useful for showing citations between documents. However, if there are articles that have nothing to do (links = 0), they will automatically not be displayed. These clusters will be grouped based on the colors that exist and are generally located close to each other. In Figure 5. Each node has a different color code according to the cluster. Blue is the color that appears most in the citation mapping results. Many authors raise the same topic so that cluster research in blue has a fairly large portion of the mapping results. The next cluster is green which has several nodes. In this cluster, the discussion is the impact of environmentally friendly human resource management practices on sustainable performance. Red is the third color that appears in the citation mapping results. The last cluster is yellow which has several nodes. In this cluster, the main discussion is about moderating the effect of GHRM on the relationship between proactive environmental management and financial performance in small companies.

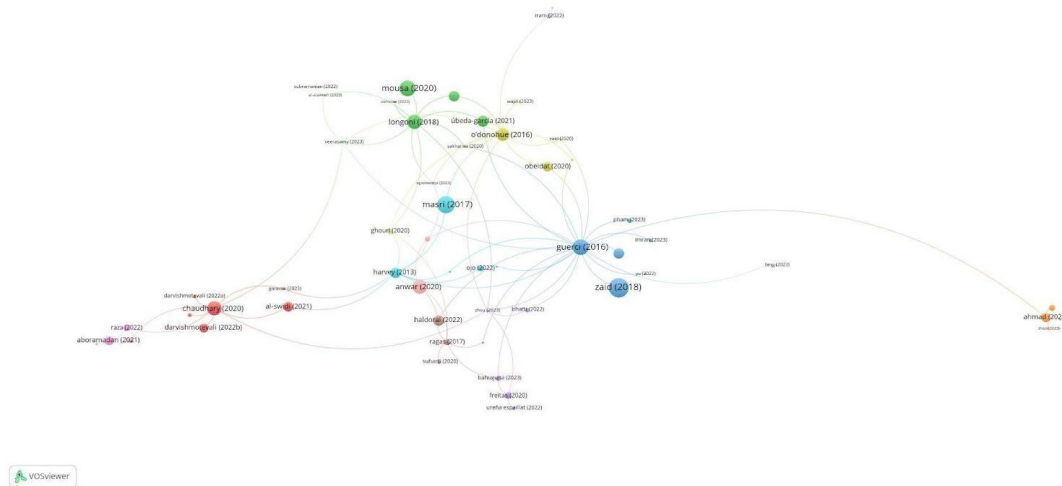


Figure 5. Citations Network Map

Co-citation Analysis

The visualization of co-citation networks shows the relationship between two or more documents using co-citation authors to measure the degree of linkage between two or more documents based on the frequency with which they appear in the reference list of other documents. This analysis uses VOSviewer software by utilizing the co-citation feature which can identify relationships between articles where the connecting line shows that both article are cited simultaneously in other articles. In Figure 6. Each node has a different cluster color, where each research cluster has the same topic discussed. Blue clusters are the first color that appears the most in mapping result. The green cluster is the second color that appears the most in the mapping results which is assumed to be the second cluster. The red cluster is the third color that appears the most in the mapping results which is assumed to be the third cluster.

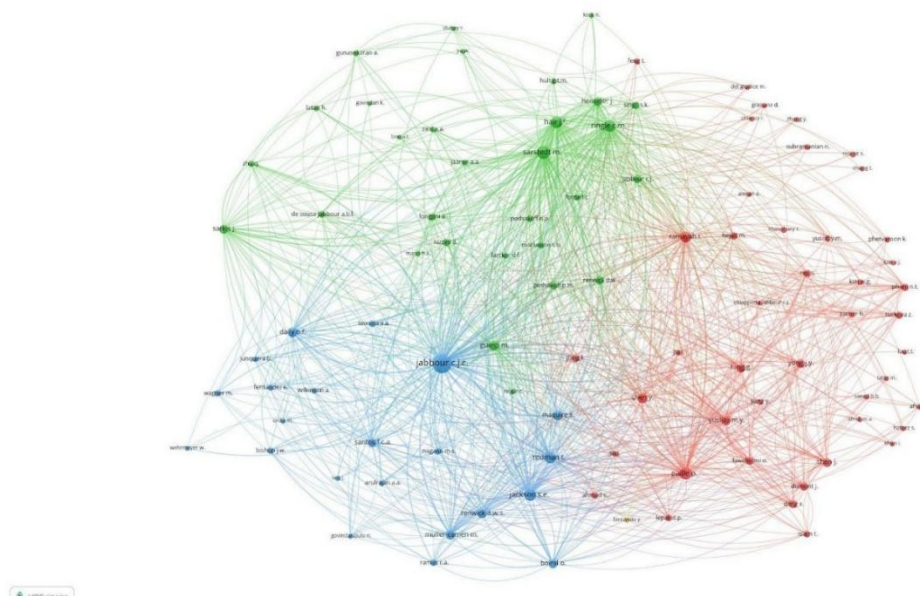


Figure 6. Co-citation network map

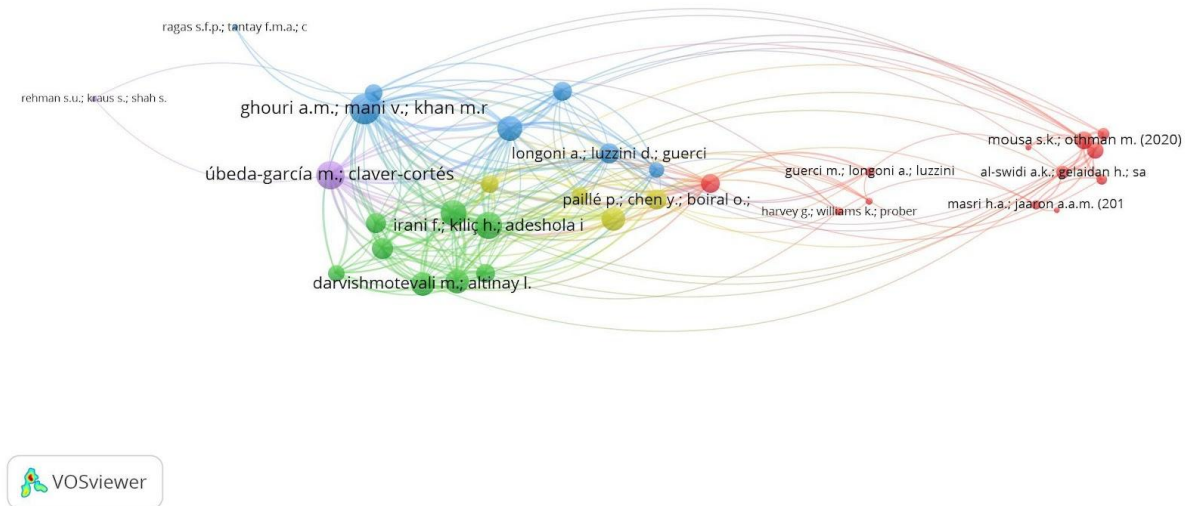


Figure 9. Bibliographic coupling analysis of documents based on total link strength.

From VOSviewer analysis in Bibliographic coupling, obtained five Cluster different. Cluster 1 is red, Cluster 2 are green, Cluster 3 are blue, Cluster 4 are yellow, and Cluster 5 are purple. There are 2-5 documents in each Cluster The details are described in Table 6.

Table 5. Cluster bibliographic coupling based on total link strength.

Author	Year	Document	Cluster	Total Link Strength
Obeidat S.M.; Al Bakri A.A.; Elbanna S. (2020)	2020	Leveraging "Green" Human Resource Practices To Enable Environmental And Organizational Performance: Evidence From The Qatari Oil And Gas Industry	1	41
Mousa S.K.; Othman M.	2020	The Impact Of Green Human Resource Management Practices On Sustainable Performance In Healthcare Organisations: A Conceptual Framework	1	36
Zaid A.A.; Jaaron A.A.M.; Talib Bon A.	2018	The Impact Of Green Human Resource Management And Green Supply Chain Management Practices On Sustainable Performance: An Empirical Study	1	31
Al-Swidi A.K.; Gelaidan H.; Saleh R.M.	2021	The Joint Impact Of Green Human Resource Management, Leadership And Organizational Culture On Employees' Green Behaviour And Organisational Environmental Performance	1	20
Anwar N.; Nik Mahmood N.H.; Yusliza M.Y.; Ramayah T.; Noor Faezah J.; Khalid W.	2020	Green Human Resource Management For Organisational Citizenship Behaviour Towards The Environment And Environmental Performance On A University Campus	1	17
Irani F.; Kiliç H.;	2022	Impact Of Green Human Resource Management	2	80

Author	Year	Document	Cluster	Total Link Strength
Adeshola I.		Practices On The Environmental Performance Of Green Hotels		
Ali M.; Puah C.-H.; Ali A.; Raza S.A.; Ayob N.	2022	Green Intellectual Capital, Green HRM And Green Social Identity Toward Sustainable Environment: A New Integrated Framework For Islamic Banks	2	74
Darvishmotevali M.; Altinay L.	2022	Green HRM, Environmental Awareness And Green Behaviors: The Moderating Role Of Servant Leadership	2	61
Raza S.A.; Khan K.A.	2022	Impact Of Green Human Resource Practices On Hotel Environmental Performance: The Moderating Effect Of Environmental Knowledge And Individual Green Values	2	58
Islam M.A.; Male A.H.; Yusoff Y.M.; Chong C.W.; Hossain, M.S.	2023	Green Human Resource Management (GHRM) Practices And Millennial Employees' Turnover Intentions In Tourism Industry In Malaysia: Moderating Role Of Work Environment	2	50
Ghourri A.M.; Mani V.; Khan M.R.; Khan N.R.; Srivastava A.P.	2020	Enhancing Business Performance Through Green Human Resource Management Practices: An Empirical Evidence From Malaysian Manufacturing Industry	3	98
Agyabeng-Mensah Y.; Ahenkorah E.; Afum E.; Nana Agyemang A.; Agnikpe C.; Rogers F.	2020	Examining The Influence Of Internal Green Supply Chain Practices, Green Human Resource Management And Supply Chain Environmental Cooperation On Firm Performance	3	67
Longoni A.; Luzzini D.; Guerri M.	2018	Deploying Environmental Management Across Functions: The Relationship Between Green Human Resource Management And Green Supply Chain Management	3	46
Rawashdeh A.M.	2018	The Impact Of Green Human Resource Management On Organizational Environmental Performance In Jordanian Health Service Organizations	3	41
Alnajdawi S.; Emeagwali O.L.; Elrehail H.	2017	The Interplay Among Green Human Resource Practices, Organization Citizenship Behavior For Environment And Sustainable Corporate Performance: Evidence From Jordan	3	34
Ojo A.O.; Tan C.N.-L.; Alias M.	2022	Linking Green HRM Practices To Environmental Performance Through Pro-Environment Behaviour In The Information Technology Sector	4	58
Paillé P.; Chen Y.; Boiral O.; Jin J.	2014	The Impact Of Human Resource Management On Environmental Performance: An Employee-Level Study	4	45
Haldorai K.; Kim W.G.; Garcia R.L.F.	2022	Top Management Green Commitment And Green Intellectual Capital As Enablers Of Hotel Environmental Performance: The Mediating Role Of Green Human Resource Management	4	34
Bahuguna P.C.; Srivastava R.; Tiwari S.	2023	Two-Decade Journey Of Green Human Resource Management Research: A Bibliometric Analysis	4	32
Úbeda-García M.; Claver-Cortés E.; Marco-Lajara B.; Zaragoza-Sáez P.	2021	Corporate Social Responsibility And Firm Performance In The Hotel Industry. The Mediating Role Of Green Human Resource Management And Environmental Outcomes	5	88
Rehman S.U.; Kraus S.; Shah S.A.; Khanin D.; Mahto R.V.	2021	Analyzing The Relationship Between Green Innovation And Environmental Performance In Large Manufacturing Firms	5	2

Note: (1) Each cluster displays only five documents with the highest total link strength, (2) When less than five documents are displayed, all will be displayed, and (3) Documents are sorted by total link strength.

At *Cluster 1*, there is a publication from Obeidat *et al*, Mousa and Othman, Zaid *et al*, Al-Swidi *et al*, and Anwar *et al*. Obeidat *et al* (2020) looks at the role of GHRM in the oil and gas sector in Qatar; the result is that GHRM has a positive effect on *Environmental Performance*. Mousa and Othman (2020) look at the influence of GHRM practice (green hiring, green training and involvement, and Green Performance Management and Compensation) against sustainable performance (environment, social, and Economic) in Palestine; the result is that GHRM practice affect sustainable performance. Zaid *et al* (2018) conducted a study in Palestine to see the relationship between GHRM Practices towards Sustainability Performance with Green Supply Chain Management as a moderation variable; the result was found that GHRM Practices and moderation of Green Supply Chain Management.

Affect sustainability performances positively. Al-Swidi *et al* (2021) conducted a study in Qatar to see the influence Environmental Concern (EC), GHRM, and Green Leadership Behavior (GLB) against Environmental Organizational Performance (EOP) by using mediation variables Green Organizational Culture (GOC) and Green employee's behavior (GEB); The results found a positive relationship between EC, GHRM, and GLB to EOP and GOC and GEB mediated positively. Lastly, Anwar *et al* (2020) conducted a study in Malaysia to see the relationship between GHRM Practices towards Environmental Performances with organisational citizenship behavior towards the environment (OCBE) as a mediation variable; the results found that GHRM affects Environmental Performance significantly as well as OCBE mediating it. From this description, it can be seen if in *Cluster 1*, the majority of publications write about the effects of GHRM Practices towards Sustainable and Environmental Performance.

At *Cluster 2*, authors who are in *Cluster* this is Irani *et al* Ali *et al*, Darvishmotevali and Altina, Raza and Khan, and Islam *et al*. Irani *et al* (2022) conducted a study in Turkey to see the relationship Staff Environmental Commitment and Green Process Innovations towards Environmental Performance; The result is that Staff Environmental Commitment and Green Process Innovations Affect Environmental Performance Significantly. Ali *et al* (2022) Looking at Influence green human capital, green structural capital and Green Relational Capital towards employee commitment, eco-friendly behavior and Environmental Performance through GHRM mediation; The results are found when green human capital, green structural capital and Green Relational Capital affects GHRM which ultimately affects employee commitment, eco-friendly behavior and Environmental Performance. Darvishmotevali and Altinay (2022) conducted a study in Kazakhstan on the effect of GHRM on Employee's Pro-Environmental Performance (P-EP) with moderation from Environmental awareness and leadership; It was found that only Environmental awareness which moderates GHRM against P-EP, but not by leadership. Raza and Khan (2022) analyze the impact of GHRM practices on Hotel Environmental Performance (HEP) by entering Environmental knowledge (EK) and individual green values (IGV) as moderator. Meanwhile, Islam *et al* (2023) conducted a study in Malaysia to see the impact of GHRM on turnover ratio; The results found no direct impact. Thus, *Cluster* It develops GHRM by using it as a mediating variable as well as using other impacts of GHRM, not only Environmental Performance.

At *Cluster 3*, there are publications from Ghouri *et al*, Agyabeng-Mensah *et al*, Longoni *et al*, Rawashdeh, and Alnajdawi *et al*. Ghouri *et al* (2020) looks at the relationship between GHRM and Business Performance (BP) by using Environmental Performance (EP) as a mediation variable; The results found a significant association between GHRM and BP and EP moderated it significantly. Agyabeng-Mensah *et al* (2020) Looking at Relationships Internal

Green Supply Chain Practices (IGSCP) against *firm performance* (FP) with GHRM mediated variables and *Supply Chain Environmental Cooperation* (SCEC); As a result, IGSCP affects FP negatively, but using GHRM and SCEC can improve the relationship between IGSCP and FP. Longoni *et al* (2018) conducted a study to see the impact of GHRM and *Green Supply Chain Management* (GSCM) against *Environmental* and *firm performance*; The results found that GHRM and GSCM affect *Environmental* and *firm performance*, and GSCM mediated the relationship. Rawashdeh (2018) explores the relationship between green human resource management (HRM) practices, including Green recruitment and selection, Green training and development, and Green rewards, as well as environmental performance in Jordanian healthcare organizations. Finally, Alnajdawi *et al* (2017) conducted research to determine Green Human Resources Management (GHRM) practices on Sustainable Corporate Performance (SCP) through the mediation role of Organization Citizenship Behavior for Environment (OCBE). Interestingly, in this cluster, not only look at the impact of GHRM on environmental performance, but also on firm performance.

In cluster 4, there are publications from Ojo *et al*, Paille *et al*, Haldorai *et al*, and Bahuguna *et al*. Ojo *et al* (2022) conducted research in Malaysia to show that green training and development, performance management and empowerment and participation are very important in stimulating pro-environmental IT behavior. Paille *et al* (2014) conducted a study in China to see the relationship between strategic human resource management, internal environmental concern, organizational citizenship behavior for the environment, and environmental performance. Haldorai *et al* (2022) conducted a study in the Philippines to see the relationship between top management, green commitment and green intellectual capital on environmental performance using GHRM as a mediation variable. Meanwhile, Bahuguna *et al* (2023) conducted a bibliometric study and said that GHRM practices are still in development, limited to certain HR practices, geographies, developed countries, and industries. Thus, this cluster is still exploring GHRM with other variables.

In the last cluster, cluster 5, there are two studies, namely from Ubeda-Garcia *et al* and Rehman *et al*. Ubeda-Garcia *et al* (2021) conducted research to see the relationship between CSR and GHRM on the company's environmental and financial outcomes. Meanwhile, Rehman *et al* (2021) conducted research to see that green intellectual capital (GIC), green human resource management (GHRM), and green innovation (GI) have an impact on the company's environmental performance. Similar to the previous cluster, GHRM is still exploring the impacts and accompanying variables.

Managerial Implications

This study offers various implications for various aspects including the role and influence of GHRM on environmental performance, besides that GHRM practice also affects sustainable performance. As the results of a study that occurred in Palestine which looked at GHRM practices on sustainability performance with supply chain management as a moderation variable, the results found that GHRM practices and moderating green supply chain management affect sustainability performance positively.

GHRM has a positive trend lately that makes it more and more widely applied by many companies. In addition, collaboration in the GHRM practice function itself is very important in a success of business performance. The results of the literature in this study can be a guideline for developments, especially in terms of GHRM. With so many new trends and developments that exist, many companies must be able to adapt. companies must start preparing for GHRM practices effectively. The implementation of Green HRM will create employees to develop and maintain a green environment so that they make the maximum contribution individually.

Conclusion

This study discusses the importance of Green Human Resource Management (GHRM) in achieving sustainable company performance and its impact on the environment. Bibliometric

analysis methods are used to map knowledge in the GHRM field and evaluate article performance and impact. The purpose of this article is to determine the performance of GHRM articles and their impact on their performance, as well as scientific mapping related to GHRM and its impact on performance. Bibliometric analysis methods used include performance analysis and science mapping. This study used the Scopus database as a data source.

The findings show a significant upward trend in publications related to GHRM since 2012, peaking in 2023, reflecting the increasing academic attention towards the role of HR in sustainability. Key contributors such as Zaid and Jaaron show a strong influence in the development of this field, particularly regarding the impact of GHRM on environmental and business performance. This trend indicates that GHRM research is beginning to focus on the integration of environmental aspects with organisational performance, which will encourage the development of more sustainable HR practices in the future.

The results of the analysis show an increasing trend of research publications related to GHRM from 2012 to 2023. There is also information about journal sources, authors, publications by country, and citations based on authors and documents. Bibliometric analysis also revealed that GHRM has a positive influence on sustainable performance, environmental performance, green supply chain management practices, and employee behavior towards the environment. Several studies have also shown that GHRM positively influences employee behavior towards the environment and company performance. The implications of this study suggest that GHRM has a positive impact on environmental performance and overall company performance. In addition, the study also highlights the importance of companies' adaptation to new trends and developments in GHRM practices.

Suggestion

Further Development: This document can be expanded by adding more detailed information about the results of bibliometric analysis, such as GHRM research publication trends from 2012 to 2023. In addition, further research can also be done to explore the relationship between GHRM and company performance in more depth.

Data Integration: This document can be enriched with the integration of data from various reliable sources to provide a more comprehensive picture of the relationship between GHRM and environmental performance as well as company performance.

Development of GHRM Code of Practice: This document may provide recommendations or guidelines for future GHRM development based on findings from bibliometric analysis and research that has been conducted. This can help companies implement more effective and sustainable GHRM practices.

Development of Related Issues: This document may broaden the scope to include GHRM-related issues, such as the social and economic impacts of implementing GHRM practices, as well as relevant policy implications.

By implementing these suggestions, the document can become a more comprehensive and useful source of information for readers interested in the topic of Green Human Resource Management (GHRM) and its impact on company performance and the environment.

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References

- Agyabeng-Mensah, Y., Ahenkorah, E., Afum, E., Nana Agyemang, A., Agnikpe, C., & Rogers, F. (2020). Examining the influence of internal green supply chain practices, green human resource management and supply chain environmental cooperation on firm performance. *Supply Chain Management: An International Journal*, 25(5), 585-599. <https://doi.org/10.1108/SCM-11-2019-0405>
- Akhtar, U. A., Muhammad, R., Bakar, L. J. A., Parameswaranpillai, V., Raj, B., & Khan, N. B. (2023). Green Human Resource Management Bibliometric Analysis of the Published Literature from 2008 to 2022. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, 8(4), 1. <https://doi.org/10.26668/businessreview/2023.v8i4.548>
- Ali, M., Puah, C. H., Ali, A., Raza, S. A., & Ayob, N. (2022). Green intellectual capital, green HRM and green social identity toward sustainable environment: a new integrated framework for Islamic banks. *International Journal of Manpower*, 43(3), 614-638. <https://doi.org/10.1108/IJM-04-2020-0185>
- Alnajdawi, S., Emeagwali, O. L., & Elrehail, H. (2017). The interplay among green human resource practices, organization citizenship behavior for environment and sustainable corporate performance: evidence from Jordan. *Journal of Environmental Accounting and Management*, 5(3), 171-184. <https://doi.org/10.5890/JEAM.2017.09.001>
- Al-Swidi, A. K., Gelaidan, H. M., & Saleh, R. M. (2021). The joint impact of green human resource management, leadership and organizational culture on employees' green behaviour and organisational environmental performance. *Journal of cleaner production*, 316, 128112. <http://dx.doi.org/10.1108/SCM-11-2019-0405>
- Anwar, N., Mahmood, N. H. N., Yusliza, M. Y., Ramayah, T., Faezah, J. N., & Khalid, W. (2020). Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus. *Journal of cleaner production*, 256, 120401. <https://doi.org/10.1016/j.jclepro.2020.120401>
- Bahuguna, P. C., Srivastava, R., & Tiwari, S. (2023). Two-decade journey of green human resource management research: a bibliometric analysis. *Benchmarking: An International Journal*, 30(2), 585-602. <https://doi.org/10.1108/BIJ-10-2021-0619>
- Bhandari, A. (2023). Design thinking: from bibliometric analysis to content analysis, current research trends, and future research directions. *Journal of the Knowledge Economy*, 14(3), 3097-3152. <https://doi.org/10.1007/s13132-022-00920-3>
- Bocken, N. M., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of cleaner production*, 65, 42-56. <https://doi.org/10.1016/j.jclepro.2013.11.039>
- Carter, C. R., & Rogers, D. S. (2008). A framework of sustainable supply chain management: moving toward new theory. *International journal of physical distribution & logistics management*, 38(5), 360-387. <https://doi.org/10.1108/09600030810882816>
- Choudhary, P., & Datta, A. (2024). Bibliometric analysis and systematic review of green human resource management and hospitality employees' green creativity. *The TQM Journal*, 36(2), 546-571. <https://doi.org/10.1108/TQM-07-2022-0225>
- Darvishmotevali, M., & Altinay, L. (2022). Green HRM, environmental awareness and green behaviors: The moderating role of servant leadership. *Tourism Management*, 88, 104401. <https://doi.org/10.1016/j.tourman.2021.104401>
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of business research*, 133, 285-296. <https://doi.org/10.1016/j.jbusres.2021.04.070>

- Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business strategy and the environment*, 11(2), 130-141. <https://doi.org/10.1002/bse.323>
- Elkington, J., & Rowlands, I. H. (1999). Cannibals with forks: The triple bottom line of 21st century business. *Alternatives Journal*, 25(4), 42.
- Farrukh, M., Raza, A., Ansari, N. Y., & Bhutta, U. S. (2022). A bibliometric reflection on the history of green human resource management research. *Management Research Review*, 45(6), 781-800. <https://doi.org/10.1108/MRR-09-2020-0585>
- Ghouri, A. M., Mani, V., Khan, M. R., Khan, N. R., & Srivastava, A. P. (2020). Enhancing business performance through green human resource management practices: an empirical evidence from Malaysian manufacturing industry. *International Journal of productivity and Performance management*, 69(8), 1585-1607. <https://doi.org/10.1108/IJPPM-11-2019-0520>
- Groos, O. V., & Pritchard, A. (1969). Documentation notes. *Journal of Documentation*, 25(4), 344-349. <https://doi.org/10.1108/eb026482>
- Haldorai, K., Kim, W. G., & Garcia, R. F. (2022). Top management green commitment and green intellectual capital as enablers of hotel environmental performance: The mediating role of green human resource management. *Tourism Management*, 88, 104431. <https://doi.org/10.1016/j.tourman.2021.104431>
- Harvey, G., Williams, K., & Probert, J. (2013). Greening the airline pilot: HRM and the green performance of airlines in the UK. *The International Journal of Human Resource Management*, 24(1), 152-166. <https://doi.org/10.1080/09585192.2012.669783>
- Irani, F., Kiliç, H., & Adeshola, I. (2022). Impact of green human resource management practices on the environmental performance of green hotels. *Journal of Hospitality Marketing & Management*, 31(5), 570-600. <https://doi.org/10.1080/19368623.2022.2022554>
- Islam, M. A., Jantan, A. H., Yusoff, Y. M., Chong, C. W., & Hossain, M. S. (2023). Green Human Resource Management (GHRM) practices and millennial employees' turnover intentions in tourism industry in malaysia: Moderating role of work environment. *Global Business Review*, 24(4), 642-662. <https://doi.org/10.1177/0972150920907000>
- Karman, A. (2020). Understanding sustainable human resource management—organizational value linkages: The strength of the SHRM system. *Human Systems Management*, 39(1), 51-68. <https://doi.org/10.3233/HSM-190602>
- Khan, M. H., & Muktar, S. N. (2020). A bibliometric analysis of green human resource management based on scopus platform. *Cogent Business & Management*, 7(1), 1831165. <https://doi.org/10.1080/23311975.2020.1831165>
- Kleindorfer, P. R., Singhal, K., & Van Wassenhove, L. N. (2009). Sustainable operations management. *Production and operations management*, 14(4), 482-492. <https://doi.org/10.1111/j.1937-5956.2005.tb00235.x>
- KPMG (2022) *Big Shifts, Small Steps: Survey of Sustainability Reporting 2022*. Retrieved from: <https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2023/04/big-shifts-small-steps.pdf>
- Krippendorff, K. (2018). *Content analysis: An introduction to its methodology*. Sage publications.
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, organizations and society*, 33(4-5), 303-327. <https://doi.org/10.1016/j.aos.2007.05.003>

- Longoni, A., Luzzini, D., & Guerci, M. (2018). Deploying environmental management across functions: the relationship between green human resource management and green supply chain management. *Journal of Business Ethics*, 151, 1081-1095. <https://doi.org/10.1007/s10551-016-3228-1>
- Madeira, C., Rodrigues, P., & Gomez-Suarez, M. (2023). A bibliometric and content analysis of sustainability and smart tourism. *Urban Science*, 7(2), 33. <https://doi.org/10.3390/urbansci7020033>
- Masri, H. A., & Jaaron, A. A. (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. *Journal of cleaner production*, 143, 474-489. <https://doi.org/10.1016/j.jclepro.2016.12.087>
- McKinsey & Company (2023) *Consumers Care About Sustainability—and Back It Up with Their Wallets*. Retrieved from: <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/consumers-care-about-sustainability-and-back-it-up-with-their-wallets>
- Michaud, C., & Llerena, D. (2011). Green consumer behaviour: an experimental analysis of willingness to pay for remanufactured products. *Business strategy and the Environment*, 20(6), 408-420. <https://doi.org/10.1002/bse.703>
- Mousa, S. K., & Othman, M. (2020). The impact of green human resource management practices on sustainable performance in healthcare organisations: A conceptual framework. *Journal of cleaner production*, 243, 118595. <https://doi.org/10.1016/j.jclepro.2019.118595>
- NielsenIQ (2023) *Growing importance placed on sustainability when choosing brands in Asia Pacific*. Retrieved from: <https://nielseniq.com/global/en/insights/education/2023/growing-importance-placed-on-sustainability-when-choosing-brands-in-asia-pacific/>
- Obeidat, S. M., Al Bakri, A. A., & Elbanna, S. (2020). Leveraging “green” human resource practices to enable environmental and organizational performance: Evidence from the Qatari oil and gas industry. *Journal of business ethics*, 164, 371-388. <https://doi.org/10.1007/s10551-018-4075-z>
- Ojo, A. O., Tan, C. N. L., & Alias, M. (2022). Linking green HRM practices to environmental performance through pro-environment behaviour in the information technology sector. *Social Responsibility Journal*, 18(1), 1-18. <https://doi.org/10.1108/SRJ-12-2019-0403>
- Paillé, P., Chen, Y., Boiral, O., & Jin, J. (2014). The impact of human resource management on environmental performance: An employee-level study. *Journal of Business ethics*, 121, 451-466. <https://doi.org/10.1007/s10551-013-1732-0>
- Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance?. *International journal of operations & production management*, 25(9), 898-916. <https://doi.org/10.1108/01443570510613956>
- Rawashdeh, A. (2018). The impact of green human resource management on organizational environmental performance in Jordanian health service organizations. *Management Science Letters*, 8(10), 1049-1058. <https://doi.org/10.5267/j.msl.2018.7.006>
- Raza, S. A., & Khan, K. A. (2022). Impact of green human resource practices on hotel environmental performance: the moderating effect of environmental knowledge and individual green values. *International Journal of Contemporary Hospitality Management*, 34(6), 2154-2175. <https://doi.org/10.1108/IJCHM-05-2021-0553>
- Rehman, S. U., Kraus, S., Shah, S. A., Khanin, D., & Mahto, R. V. (2021). Analyzing the relationship between green innovation and environmental performance in large manufacturing firms. *Technological forecasting and social change*, 163, 120481. <https://doi.org/10.1016/j.techfore.2020.120481>
- Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of cleaner production*, 16(15), 1699-1710. <https://doi.org/10.1016/j.jclepro.2008.04.020>

- Singh, S. K., Del Giudice, M., Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological forecasting and social change*, 150, 119762. <https://doi.org/10.1016/j.techfore.2019.119762>
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal*, 28(13), 1319-1350. <https://doi.org/10.1002/smj.640>
- Tutar, H., Nam, S., & Güler, S. (2023). Development of sustainable human resources in the period 2000-2021: A bibliometric review. *Journal of Chinese Human Resource Management*, 14(1). <http://doi.org/10.47297/wspchrmwsp2040-800506.20231401>
- Úbeda-García, M., Claver-Cortés, E., Marco-Lajara, B., & Zaragoza-Sáez, P. (2021). Corporate social responsibility and firm performance in the hotel industry. The mediating role of green human resource management and environmental outcomes. *Journal of Business Research*, 123, 57-69. <https://doi.org/10.1016/j.jbusres.2020.09.055>
- United Nations Development Programme (2023) *Sustainable Development Goals*. Retrieved from: <https://www.undp.org/sustainable-development-goals>
- Weber, O., Scholz, R. W., & Michalik, G. (2010). Incorporating sustainability criteria into credit risk management. *Business strategy and the environment*, 19(1), 39-50. <https://doi.org/10.1002/bse.636>
- White, M. D., Marsh, E. E., Marsh, E. E., & White, M. D. (2006). Content analysis: A flexible methodology. *Library trends*, 55(1), 22-45. <https://doi.org/10.1353/lib.2006.0053>
- Zaid, A. A., Jaaron, A. A., & Bon, A. T. (2018). The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study. *Journal of cleaner production*, 204, 965-979. <https://doi.org/10.1016/j.jclepro.2018.09.062>
- Zakaria, R., Ahmi, A., Ahmad, A. H., Othman, Z., Azman, K. F., Ab Aziz, C. B., ... & Shafin, N. (2021). Visualising and mapping a decade of literature on honey research: A bibliometric analysis from 2011 to 2020. *Journal of Apicultural Research*, 60(3), 359-368. <https://doi.org/10.1080/00218839.2021.1898789>
- Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational research methods*, 18(3), 429-472. <https://doi.org/10.1177/1094428114562629>