NEVŞEHİR HACI BEKTAŞ VELİ ÜNİVERSİTESİ
Ara, bul.

Sosyal Bilimler Enstitüsü Dergisi

Cilt: 13 Sayı: 3 Eylül 2023
E-ISSN: 2149-3871

YEŞİL İNSAN KAYNAKLARI YÖNETİMİ VE ÇEVRESEL PERFORMANS ÜZERİNE BİBLİYOMETRİK BİR ANALİZ

A BIBLIOMETRIC ANALYSIS ON GREEN HUMAN RESOURCE MANAGEMENT AND ENVIRONMENTAL PERFORMANCE

Sercan EDİNSEL
Türk Silahlı Kuvvetleri
sedinsel@gmail.com
ORCID: 0000-0003-2831-7504

Karahan KARA
Artvin Çoruh Üniversitesi
Hopa MYO
Lojistik Programı
karahan.kara@artvin.edu.tr
ORCID: 0000-0002-1359-0244

Geliş Tarihi:
15.04.2023

Kabul Tarihi:
07.09.2023

Yayın Tarihi:
25.09.2023

Anahtar Kelimeler
Yeşil İnsan Kaynakları Yönetimi, Çevresel Performans, Bibliyometrik Analiz, Performans Analizi, Bilim Haritalama.

Keywords
Green Human Resources Management, Environmental Performance, Bibliometric Analysis, Performance Analysis, Science Mapping,

ÖZ

Bibliyometrik analiz, literatürün belirli kavramlar özelinde derinlemesine irdelenmesini imkân sağlar. Bu araştırmada yeşil insan kaynakları yönetimi (YİKY) ve çevresel performans kavramlarını ele alan araştırmaların literatür incelemesini bibliyometrik analiz yöntemiyle açıklanması hedeflenmiştir. YİKY, insan kaynakları yönetiminin yeşil odaklı ele alınmasına işaret etmektedir. Çevresel performans ise organizasyonların çevreyi dikkate alarak eylemlerini yürütme başarısı olarak açıklanır. Bu araştırmada bibliyometrik analizin performans analizi ve bilim haritalama yöntemleri kullanılmıştır. Çalışmada Scopus veri tabanından faydalanılmıştır. Araştırmada Açık Erişim olan araştırmalara yer verilmiştir. Bibliyometrik analiz bulgularına göre 2015-2023 yılı Nisan ayına kadar olan dönemde kırk beş yayına ve iki bin iki yüz yirmi dört atıfa rastlanmıştır. Yayın sayısı bakımından 2022 yılı 15 yayın ile atıf sayısı bakımından ise 2020 yılı 775 atıf ile en verimli yıldır. Bu alanda katkı sağlayan toplam 18 ülke olup bunlardan Pakistan 13 yayın ile en çok yayın yapan ülkedir. Ülkelerin ortak yazar sayılarına bakıldığında bunlardan Çin-Pakistan 6 yayın ile en verimli olarak görülmüştür. Malezya Utara ve Pakistan Lahore üniversiteleri 4 yayın ile alanda en üretken üniversitelerdir. En çok yayının yer aldığı dergi ise 9 yayın ile Sürdürülebilirlik dergisidir. Anahtar kelimelerde ise yeşil inovasyon, yeşil dönüşümcü liderlik, sürdürülebilirliken çok kullanılanlarıdır. Araştırma sonucunda mevcut durum ortaya koyulmuş ve gelecek araştırmalar için öneriler sunulmuştur.

ABSTRACT

Bibliometric analysis allows for an in-depth examination of the literature specific to certain concepts. This research, it is aimed to explain the literature review of the research that deal with the concepts of green human resources management (GHRM) and environmental performance with the bibliometric analysis method. GHRM, indicates that human resources management should be handled with a green focus. Environmental performance, on the other hand, is explained as the success of organizations in executing their actions by considering the environment. In this research, performance analysis and science mapping methods of bibliometric analysis were used. Scopus database was used in the study. Open Access studies were included in the study. According to the bibliometric analysis findings, forty-five publications and two thousand two hundred twenty-four citations were found in the period until April 2015-2023. In terms of the number of publications, 2022 is the most productive year with 15 publications and in terms of the number of citations, 2020 is the most productive year with 775 citations. There are 18 countries in total contributing to this field, and Pakistan is the country with the highest number of publications with 13 publications. Considering the number of co-authors of the countries, China-Pakistan was seen as the most productive with 6 publications. Malaysia Utara and Pakistan Lahore universities are the most productive universities in the field with 4 publications. The magazine with the most publications is the Sustainability with 9 publications. The keywords, green innovation, green transformational leadership, and sustainability are the most used ones. As a result of the research, the current situation was revealed and suggestions for future research were presented.

DOI: https://doi.org/10.30783/nevsosbilen.1283914

Atıf/Cite as: Edinsel, S., & Karahan, K. (2023). Yeşil insan kaynakları yönetimi ve çevresel performans üzerine bibliyometrik bir analiz. *Nevşehir Hacı Bektaş Veli Üniversitesi SBE Dergisi, 13*(3), 1630-1650.

Introduction

GHRM represents the green-oriented approach, which suggests that human resources management should be handled from an environmental perspective (Renwick et al., 2013). Environmental performance is the result of how an organization's actions reflect its environmental attitudes (Jasch, 2000). GHRM plays a significant role in driving and enhancing the environmental performance of organizations. GHRM recognizes that employees are key stakeholders in achieving sustainability goals and focuses on integrating environmental considerations into human resource policies and practices (Pham et al., 2020). By implementing GHRM initiatives, organizations can promote environmentally responsible behaviors among employees, provide training and development programs on sustainability, and foster a culture of environmental awareness. GHRM initiatives can encompass various aspects such as energy conservation, waste reduction, eco-friendly practices, and sustainable decision-making (Kim et al., 2019). Through these efforts, GHRM helps organizations improve their environmental performance by reducing their ecological footprint, enhancing resource efficiency, and contributing to a greener and more sustainable future. By aligning HR practices with environmental goals, GHRM plays a pivotal role in driving positive environmental change within organizations and beyond (Renwick et al., 2016). There are numerous studies focusing on GHRM by adopting bibliometric approaches such as Khan and Muktar, (2020); Farrukh et al., (2022); Fachada et al., (2022); Akhtar et al., (2023); Bahuguna et al., (2023). In addition, there are bibliometric analyses dealing with environmental performance in the literature (Zhang et al., 2021; Burki et al., 2022). To our knowledge, there is no bibliometric analysis that deals with GHRM and environmental performance together yet.

The green-focused approach to human resources management is influenced by a variety of issues. Environmental customer pressure, legal restrictions, and environmental concerns are a few of them. These elements directly affect how well organizations perform. Performance on the environment is where the largest impact is felt. Companies become more involved in developing their competitive strategies and training their human resources to satisfy environmental requirements as a result of environmental performance (Singh et al., 2019). As a result, the literature extensively examines the connection between the evolution of human resources in a green direction and environmental performance (Hameed et al., 2020; Pham et al., 2020; Ren et al., 2021; Elshaer et al., 2021; Ojo et al., 2022; Irani et al., 2022). These studies indicate that literature on the relationship between GHRM and environmental performance is emerging. So, a literature review of studies that deal with GHRM and environmental performance concepts becomes necessary for the analysis and expansion of the current state of the literature. There is no literature review in which these two concepts are discussed in common. To complete this research gap, studies dealing with these concepts should be examined in detail. The aim of this study is to determine the current state of GRHM and environmental performance studies and to make suggestions for future research. At this point, the bibliometric analysis technique emerges as the most appropriate method. The research questions that motivate this research are as follows:

- Research Question 1: What are the current status and trends of publications and citations in the GHRM and environmental performance literature?
- Research Question 2: Which universities and authors have contributed the most to the GHRM and environmental performance literature?
- Research Question 3: What are the most contributing sources and the most cited publications to the GHRM and environmental performance literature?
- Research Question 4: What are the most frequently used keywords in the literature?

This study aims to find out answers to these research questions raised above. This study consists of six sections. The terms GHRM and environmental performance are defined in the second section. The third section contains information on the Bibliometric analysis method. The results of the bibliometric study for GHRM and environmental performance are explained in the fourth section. The outcomes based on the findings are presented in the fifth section. The research's limits and potential research areas are presented in the sixth part.

Conceptual Framework

Green Human Resources Management

Today, green-focused approaches have become popular both in practice and academic agenda. This popularity has emerged to seek solutions to meet environmental needs, rather than being a fashion. Management discipline is to keep up with this change. In the literature, the environment-economic balance of human resource management has given birth to green human resources management (GHRM) (Amrutha and Geetha, 2020). Efforts to protect sustainable business structures and reduce carbon footprints have recently increased interest in GHRM (Yong et al., 2020).GHRM is an environmentalist approach to human resource management practices in achieving organizational goals (Renwick et al., 2016). Three elements constitute the basic structure of GHRM. These are *green ability*, *green employees,* and *green opportunity* (Renwick et al., 2013). There are signs in the literature that these elements can be expanded (Pham et al., 2020). Thus, it can be said that the structural development of GHRM continues.

Regardless of the structural forms of GHRM, the target output of GHRM is performance.GHRM has been discussed in the literature with firm performance (Úbeda-García et al., 2021), sustainable performance (Mousa and Othman, 2020), organizational performance (Obeidat et al., 2020), social performance (Agyabeng-Mensah and Tang, 2021) and environmental performance (Gilal et al., 2019; Anwar et al., 2020; Yusoff et al., 2020). In addition, studies on the GHRM-performance relationship are constantly being produced in different sectors and various sample areas. The frequent presence of GHRM on the agenda also reveals research to present how the GHRM literature has developed and evolved (Ren et al., 2018; Amrutha and Geetha, 2020; Yong et al., 2020; Bahuguna et al., 2023).

Sources of GHRM applications point to an increase in the level of green competition, that is, the level of environmental performance. In this process, natural green competence or acquired green competence is utilized (Yu et al., 2019). There are studies evaluating which of these competencies is better (Subramanian et al., 2016). However, regardless of how green abilities are acquired, the effect of green abilities in improving performance is observed. Although the GHRM competency level results in various performance outcomes, the focus is environmental performance. With the inclusion of the green element in all performance indicators, an increase in the environmental performance of organizations becomes inevitable, prompting the need for a comprehensive literature evaluation of studies examining the relationship between Green Human Resource Management (GHRM) and environmental performance (Kim et al., 2019; Roscoe et al., 2019).

Environmental Performance

Traditional competitive strategies focus on maximizing the profitability of companies and keeping their competitiveness high. However, at this point, ignoring environmental factors takes its place in the agenda of criticism. Although there is a positive correlation between environmental performance and firm performance, there are studies indicating that both have a restrictive role, that is, they are competitors (Jorge et al., 2015). Government environmental protection policies and regulations are among the driving forces for companies to monitor their environmental performance (Elmagrhi et al., 2019). These sanctions focus on two themes: reducing "energy consumption" and "waste generation". The common point of both is the effective and efficient use of resources.

Resource-based and resource orchestration approach deals with the successful management of resources within the scope of a circular economy (Kristoffersen et al., 2021). A circular economy contributes to obtaining high environmental performance as well as increasing economic performance (Harris et al., 2021). Another pillar of environmental performance is the human resource that has acquired an environmental understanding (Singh et al., 2019). GHRM practices positively affect the environmental performance of employees (Hameed et al., 2020). Environmental performance on an individual basis directly contributes to the formation of environmental performance at the organizational level. For this reason, human resources and green-oriented management of this resource are among the inevitable elements of environmental performance. There are also studies supporting that GHRM applications play an active role in the development of pro-environmental behavior in employees (Saeed et al., 2019; Rubel et al., 2021; Naz et al., 2022).

Companies need to make maximum use of their existing resources to ensure sustainable performance. Human capital has a direct impact on making environmental performance sustainable (Sobaih et al., 2020; Ojo et al. 2022). Additionally, research has shown that GHRM affects environmental performance indirectly (Singh et al., 2020). Therefore, it is clear that there is a direct and indirect link between GHRM and environmental performance. At this stage, it is possible to define environmental performance in the context of GHRM as performance outcomes attained by encouraging staff members to engage in eco-friendly actions and considering environmental values. Academic studies to explain the context of this relationship are also considered the main elements that contribute to the literature. For this reason, bibliographical analysis of studies dealing with GHRM and environmental performance also contributes to the literature.

Method

Bibliometric Analysis Technique

The bibliometric technique is being used more frequently by social science researchers to analyze and rank authors (Wu et al., 2021), papers, subjects (Gurzki and Woisetschläger, 2017), journals (Martínez-López et al., 2018; Valenzuela-Fernandez, et al., 2019), and nations (Mas-Tur et al., 2019). The bibliometric technique is a comparative quantitative evaluation method that draws on published academic literature's bibliographic data. It examines different characteristics of the bibliography, including the number of publications, references, social networking (co-authorship), and significant trends in the subjects (Marler and Boudreau, 2017).

For review techniques investigations, systematic literature reviews, meta-analyses, and bibliometric analyses are typically used. Although these methods mainly focus on the review of the literature, they differ among themselves. The goal of bibliometric analysis is to identify trends using extensive bibliometric data for a particular topic and concept (Donthu et al., 2021a). Performance analysis and science mapping are the two fundamental methods on which bibliometric analysis is based. (Donthu et al., 2021b). These methods allow for an in-depth literature review of the concepts and examine the relationships between large bibliometric data. For this reason, the technical application of bibliometric analysis is frequently encountered in the literature (Donthu et al., 2020; Donthu et al., 2021c, Qin et al., 2022).

This work intends to investigate the geographical distribution, quantity, and evolution of the knowledge base by emphasizing current trends in "GHRM" and "Environmental Performance" research and identifying significant authors, publications, and sources while examining existing literature and intellectual structure. Goals in this study are achieved by using performance analysis and scientific analysis, two essential bibliometric analysis components. Performance analysis assesses productivity and effect in terms of the volume of publications and citations (Donthu et al., 2020), whereas science analysis illustrates the field's system and dynamics (Baker et al., 2021). In this study, citation and co-citation analysis and bibliographic coupling are used to achieve the purpose of this research.

One of the most used techniques for examining the connections between bibliographic data is co-citation analysis. If two texts are referenced together in a third document, it is assumed that they belong to the same body of literature (Liu et al., 2015). Bibliographic coupling is the repeated citation of the third reference in two separate texts. By calculating the number of sources, bibliographic coupling determines how similar two published articles are to one another. The degree of similarity increases with the number of common references (Zupic and Cater, 2015). Co-occurrence is a term used to describe the closeness, frequency of recurrence, and the existence of similar terms (Gong et al., 2018).

Search Query

The Scopus database was used to conduct a search of the literature on "GHRM" and "Environmental Performance." One of the biggest databases for bibliographical information in the social sciences is Scopus. Several prior bibliometric analyses have employed this analysis (Guerrero-Baena et al., 2014; Silveira and Zilber, 2017; Durán-Sánchez et al., 2019; Donthu et al., 2020; Farrukh et al., 2022). This study employed several search procedures to make sure all articles and materials about "GHRM" and "Environmental Performance" were covered. The search query is given as *(TITLE-ABS-KEY ("GHRM") OR TITLE-ABS-KEY ("Green HRM") OR TITLE-ABS-KEY ("Green Human Resource Management") AND TITLE-ABS-KEY ("Environmental Performance") AND (LIMIT-TO (OA, "all")) AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")*). The findings of the search

showed that there are 45 publications from 2015 to 2023 April. Title, abstracts, and keywords from all 45 publications were thoroughly examined to make sure that all the articles and research that were extracted during our search related to "GHRM" and "Environmental Performance". Only published articles were used in this study. Additionally, only the English language was chosen.

VOSviewer Software for Bibliometric Analysis

With VOSviewer, the literature maps have been visualized using the visualization of similarities approach (Van Eck and Waltman, 2010). This program works well with bibliometric network constructions and visualization (Baker et al., 2020). These networks include diagrams of scholars, publications, researchers, and papers that utilize co-citation, bibliographic coupling, and co-authorship (Sharifi et al., 2021). Additionally, it makes use of text analysis tools, which may be used to create and display co-occurrence networks of pertinent terms drawn from a large corpus of academic research (Jang et al., 2017).

Findings

Publication and Citations Trend

In all, forty-five (45) articles were found using the search procedures between 2015 and April 2023. In addition, it was determined that two thousand two hundred twenty-four (2224) citations were made to these articles. In Table 1, the distribution of citations and publications by years found in the publishing trend findings is shown. Figure 1 also displays the number of citations and publications.

Table 1. Publication and Citations Trends

Year	Number of papers	Number of Citations
2023	6	-
2022	15	55
2021	8	302
2020	7	775
2019	4	405
2018	1	61
2016	3	516
2015	1	165

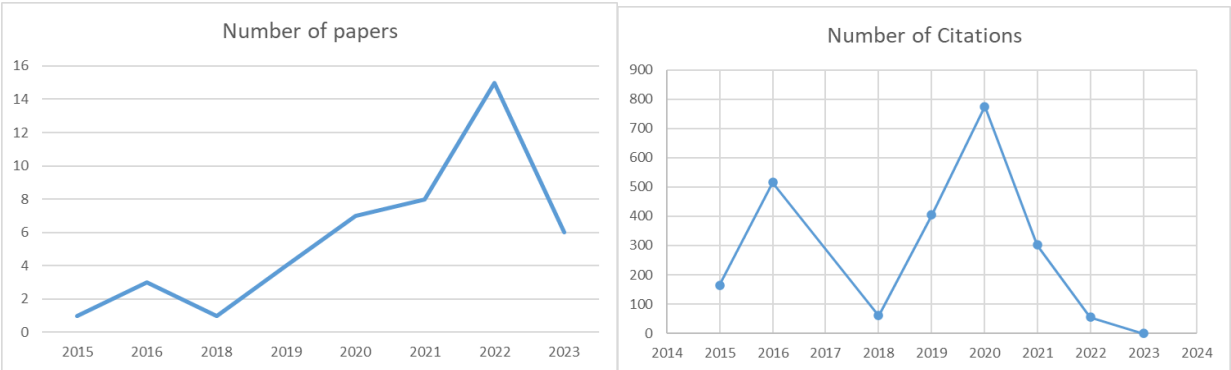

Figure 1. Trends of Publications and Citiations

The fields of "GHRM" and "Environmental Performance" have expanded since 2019 as shown in Table 1 and Figure 1. According to the findings, 2022 was the year with the most publications. This year there are 15 publications. As for citations 2020 is the best year with 775 citations. The increase in publications on "GHRM" and "Environmental Performance" maybe because the current economic situation expects environmental and sustainable changes from enterprises. Globalization and recent developments in

information and communication technology have already made the world more confusing, dynamic, and unpredictable. Customers who have high expectations for environmental issues and countries' environmental regulations may put businesses in a perpetual state of competition (Nivlouei, 2014). Consequently, businesses regularly search for innovative strategies that will set them apart from their rivals to fulfill the demands of this fiercely competitive industry. Making effective use of human resources becomes essential to achieving business objectives as a result (Som, 2008). According to some scholars, "GHRM" and "Environmental Performance" are becoming more popular and may cause significant changes to organizational structures (Strohmeier, 2007; Marler and Fisher, 2010; Strohmeier and Kabst, 2014) as well as improvements in environmental issues and sustainability, HR processes, and strategies are being fundamentally reengineered through "GHRM" and "Environmental Performance" to compete in a fiercely competitive market. Organizations are paying increasing attention to "GHRM" and "Environmental Performance" to keep up with competitors, be more lucrative, and maintain their services. Researchers thus concentrate on this area to show the true benefits of "GHRM" and "Environmental Performance" to businesses.

Origin of Publications

The most productive countries and regions for "GHRM" and "Organizational Performance" are shown in Table 2. With 13 publications, Pakistan is the most prolific country. As for the number of citations France is the most prolific country with 1123 citations. Russian Federation is the most prolific in terms of citations per publication with 254.5 citations per article.

Table 2. The Most Productive Countries and Regions

Country/region	Number of papers	Number of Citations	Citations per publication
Pakistan	13	264	20.15
Malaysia	12	176	14.66
China	9	312	34.66
Saudi Arabia	8	250	31.25
France	5	1123	224.6
United States	4	329	82.25
United Kingdom	4	649	162.25
Italy	4	957	239.25
Thailand	3	3	1
Egypt	3	58	19.33
Czech Republic	3	131	43.66
Taiwan	2	5	2.5
Spain	2	214	107
Russian Federation	2	509	254.5
Poland	2	42	21
Iran	2	3	1.5
Indonesia	2	5	2.5
Australia	2	242	121

The findings of the top contributing countries for bibliographic coupling are shown in Table 2. With 13 publications, Pakistan is the most prolific country. However, it ranked eleventh in terms of citations made per

article. Russian Federation is rated top in terms of citations per article while being placed fourteenth in terms of publishing.

The bibliographic coupling was created to help readers better understand the relationships between the nations that publish works on that topic (Zupic and Cater, 2015). When two papers often cite the third work, this is known as bibliographic coupling. In terms of nations, bibliographic coupling happens when a third document is cited in the publishing of two documents from separate nations. This demonstrates how several nations use the same literary works in publications they made (Gu et al., 2021).

Figure 2 displays the findings of the bibliographic coupling; every circle in the graph constitutes a nation, and its contribution is indicated by the size of the circle; the larger the circle, the higher the contribution. According to the bibliographic coupling, there are 4 clusters, as shown in Figure 2. Saudi Arabia, Thailand, Egypt, and Malaysia are all included in the green cluster. Pakistan, China, Portugal, and Cyprus are in the blue cluster. The United States, Malaysia, and South Korea are in the yellow cluster. Italy, Russian Federation, and United Arab Emirates are in the purple cluster. Additionally, Figure 2 demonstrates that countries with similar color clusters mention the same publications. France, Spain, the Czech Republic, Poland, Bangladesh, the United Kingdom, and Austria are in the red cluster.

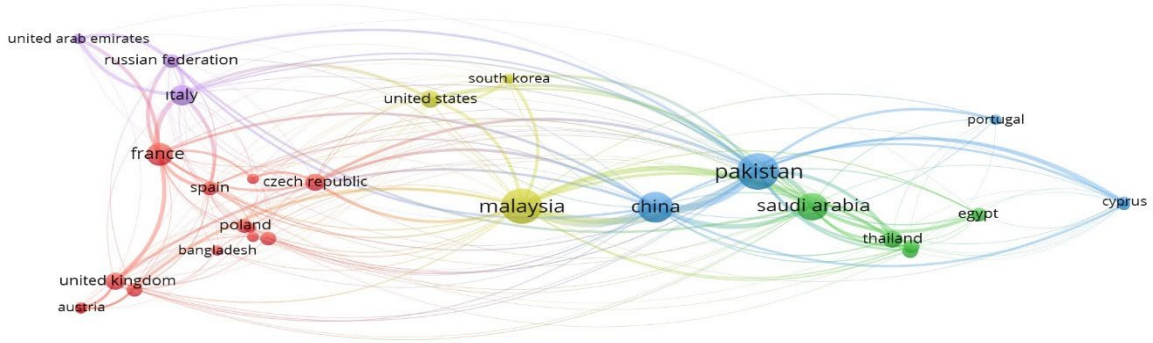

Figure 2. Bibliographic Coupling Countries

The country-specific co-authorship arrangement is shown in Figure 3. Co-authorship highlights the important connections with other nations as well as the number of publications for a given nation. Pakistan, China, Portugal, and Cyprus are in the blue cluster. France, the Czech Republic, Italy, and Spain are in the red cluster. Malaysia, South Korea, and the United States are in the purple cluster. Thailand, Saudi Arabia, Taiwan, and Egypt are in the green cluster. The United Kingdom, Austria, and Australia are in the yellow cluster.

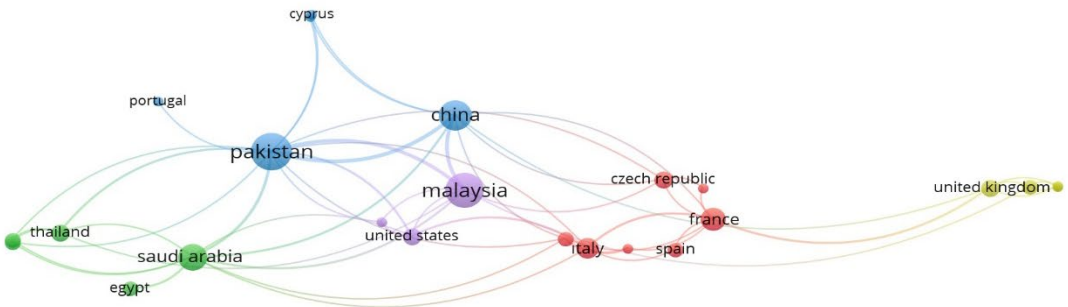

Figure 3. Co-authorship Among Countries

Table 3 reveals that, with six publications each, authors from Pakistan and China have the most papers published in cooperation. They are followed by China-Malaysia, and Malaysia-Pakistan collaboration with five papers. Other countries in collaboration that are not mentioned in this table published one paper.

Table 3. Co-authorship Among Countries

From	To	Frequency
China	Pakistan	6
China	Malaysia	5
Malaysia	Pakistan	5
Pakistan	Saudi Arabia	3
Malaysia	Saudi Arabia	2
Pakistan	United States	2
Egypt	Saudi Arabia	2
China	Saudi Arabia	2
Italy	United States	2
France	Italy	2
France	United Kingdom	2
Pakistan	Thailand	2

The Most Productive Universities

Table 4 lists the universities that published more than two papers on the "GHRM" and "Environmental Performance" study conducted by various educational institutions throughout the world between 2015 and 2023. There are 10 universities following this statement. These factual facts demonstrate the significant contributions made by Malaysian, Pakistani, Egyptian, and Saudi Arabian academics and researchers to the study of "GHRM" and "Environmental Performance".

Table 4. The Most Productive Universities and Institutions

University/Institute	Number of papers	Country
"University Utara Malaysia"	4	Malaysia
"The Superior University Lahore"	4	Pakistan
"Suez Canal University"	3	Egypt
"King Faisal University"	3	Saudi Arabia
"UniverzitaTomase Bati and Zlin"	2	Czech Republic
"Islamic Azad University"	2	Iran
"Helwan University"	2	Egypt
"Universita Degli Studi di Milano"	2	Spain
"Ikna University"	2	Pakistan

University Utara Malaysia and The Superior University Lahore were the most productive universities in "GHRM" and "Environmental Performance" with 4 publications each.

Leading Sources

The distribution of publication sources in bibliometric analyzes indicates how intensely the concepts are distributed to the sources. The list of sources that have been written on "GHRM" and "Environmental Performance" research is shown in Table 5.

Table 5. Leading Sources of GHRM and Environmental Performance

Source Title	Number of papers	Number of Citations	Citations per papers
"Sustainability"	9	134	14.88
"Journal of Cleaner Production"	4	239	59.75
"Frontiers in Environmental Science"	3	10	3.33
"International Journal of Human Resource Management"	3	550	183.33
"International Journal of Environmental Research and Public Health"	2	21	10.5
"Technological Forecasting and Social Science"	2	647	323.5

While "Sustainability" ranked first with 9 publications, Cleaner Production Magazine ranked second with 4 publications. As for the number of citations and citations per paper "Technological Forecasting and Social

Science" was ranked first and "International Journal of Human Resource Management" was second. While "Sustainability" ranked first in the "number of publications" ranking and third in the "number of citations" and "citations per issue" rankings. This result once again reveals the importance of writing quality articles.

The Most Productive Authors

In bibliometric analysis, the distribution of authors indicates how intensely the authors research concepts. This indicates the prestige of the authors in the literature. Table 6 shows authors who publish at least 2 papers about "GHRM" and "Environmental Performance". Bazrkar, A., Elshaer, I.A., Guerci, M., Halder, S.A., Jabbour, C.J.C., Nisar, Q.A., and Sobaih, A.E.E. are all published 2 papers. Other authors that are not mentioned in Table 6 have one publication.

Table 6. The Most Productive Authors

Author	Country	Number of papers	Number of Citations
Jabbour, C.J.C.	France	2	436
Guerci, M.	Italy	2	317
Nisar, Q.A.	Malaysia	2	72
Elshaer, I.A.	Egypt	2	26
Sobaih, A.E.E.	Egypt	2	58
Haider, S.A.	Saudi Arabia	2	15
Bazrkar, A.	Iran	2	3

A fascinating aspect of bibliometric research is the examination of these top authors' co-citations. Co-citation occurs when a third document includes references to two publications written by two separate authors (Farrukh et al., 2021). The most important authors working on these subjects live in the Arabian Peninsula and the surrounding countries (Iran, Egypt, Saudi Arabia).

The clusters of co-citations for the authors are displayed in Figure 4 in three distinct colors. With 15 authors, the red cluster is the largest; while the green cluster has 12, the blue cluster has 10 authors. Authors Ramayah T. and Sarstedt M. in the blue cluster, Jabbour C.J.C., Jackson S.E., Paille P. in the red cluster, Chen Y., Singh S.K. Shen J. in the green cluster come to the fore.

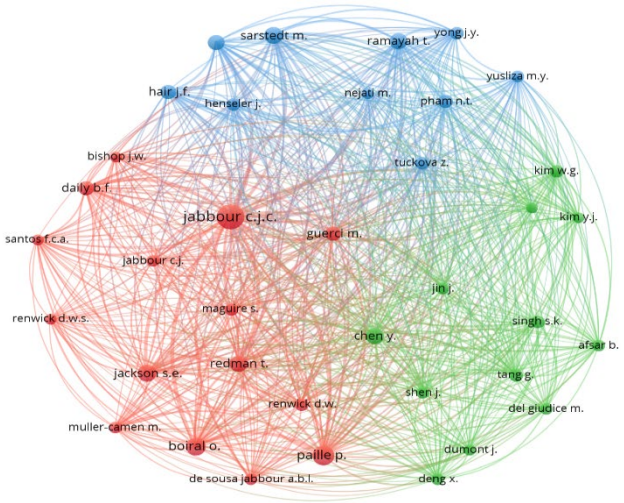

Figure 4. Co-Citations of Authors

The authors of the same color cluster have a co-citation relationship, and the same is true for the authors of the other colors. The extent and trend of the publications are indicated by these facts. Each cluster is connected to every other cluster. The more times an author is acknowledged, the greater the circle.

The Most Cited Publication

Since 2019, "GHRM" and "Environmental Performance" research has increased. Because businesses began to focus on "GHRM", and "Environmental Performance" topics and they started to adapt green approaches in their systems due to both increasing pressures from internal and external customers and the laws of the

country in which they operate. By employing job roles, hiring, selecting, training, performance reviews, the culture of the organization, teamwork, and learning in the organization, organizations can achieve environmental objectives and strategies (Jabbour, 2011). A published paper's reliability and quality are often assessed based on the citations it has garnered. The argument put out in the literature is that a paper's impact on the field is directly related to its citation count (Aksnes et al., 2019). The top 10 most referenced papers are listed in Table 7 under "Most Cited Publications." The common feature of these publications is that they are the most cited studies that use green human resources management and environmental performance together. And they also have largely focused on the effects of green human resource management and its practices on environmental performance.

Table 7. The Most Citated Publications

Rank	Authors	Title	Cited By
1	"Singh, S.K., Giudice, M.D., Chierici, R., Graziano, D. (2020)"	"Green innovation and environmental performance: The role of green transformational leadership and green human resource management"	499
2	"Roscoe, S., Subramanian, N., Jabbour, C.J.C., Chong, T. (2019)"	"Green human resource management and the enablers of green organizational culture: Enhancing a firm's environmental performance for sustainable development"	252
3	"Guerci, M., Longoni, A., Luzzini, D. (2016)"	"Translating stakeholder pressures into environmental performance – the mediating role of green HRM practices"	201
4	"Renwick, D.W.S., Jabbour, C.J.C., Muller-Camen, M., Redman, T., Wilkinson, A. (2016)"	"Contemporary developments in Green (environmental) HRM scholarship"	184
5	"Zibarras, L.D., Coan, P. (2015)"	"HRM practices used to promote pro-environmental behavior: a UK survey"	165
6	"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"	148
7	"Pham, N.T., Vo Thanh, T., Tučková, Z., Thuy, V.T.N. (2020)"	"The role of green human resource management in driving hotel's environmental performance: Interaction and mediation analysis"	128
8	"Pinzone, M., Guerci, M., Lettieri, E., Huisingh, D. (2019)"	"Effects of 'green' training on pro-environmental behaviors and job satisfaction: Evidence from the Italian healthcare sector"	116
9	"Nisar, Q.A., Haider, S., Ali, F., (...), Ryu, K., Gill, S.S. (2021)"	"Green human resource management practices and environmental performance in Malaysian green hotels: The role of green intellectual capital and pro-environmental behavior"	68
10	"Rawashdeh, A.M. (2018)"	"The impact of green human resource management on organizational environmental performance in Jordanian health service organizations"	61

The most cited publication is Singh, S.K., Giudice, M.D., Chierici, R., and Graziano, D. published in 2020. It has 499 citations. The objective of this article is to explore the intricate relationship between green human resource management (HRM), green transformational leadership, green innovation, and environmental performance. The study significantly contributes to the existing theory by suggesting that the link between HRM and performance cannot be solely attributed to the individual effects of green transformational leadership or green innovation as antecedents and mediators, respectively. Instead, it emphasizes the combined influence of both additive and interactive elements, which collectively impact the firm's environmental performance. Moreover, the research advances previous studies that highlight the crucial role of leadership in shaping HRM practices, subsequently influencing green innovation within organizations. The second most cited publication is written by Roscoe, S., Subramanian, N., Jabbour, C.J.C., Chong, T. in 2019 with 252 publications. Their study aimed to examine the relationship between green HRM practices, the drivers of green organizational culture, and a firm's environmental performance. The findings of this study indicate that HRM practices that align with pro-environmental goals, such as hiring, training, appraisal, and incentivization, contribute to the development of the drivers of green organizational culture. Notably, the

critical drivers of green organizational culture encompass leadership emphasis, message credibility, peer involvement, and employee empowerment.

Keyword Co-Occurrence

The co-occurrence of keywords is shown in Figure 5. The co-occurrence of keywords in academic literature provides valuable insights into the conceptual or knowledge structure of a particular field of study. When certain keywords appear together frequently in scholarly articles, it suggests that these concepts are closely related and often discussed in conjunction with one another. This co-occurrence pattern reflects the interconnectedness and interdependencies of ideas within the field, revealing the underlying conceptual framework and the relationships between different research areas (Callon, Courtial, Turner, & Bauin, 1983).

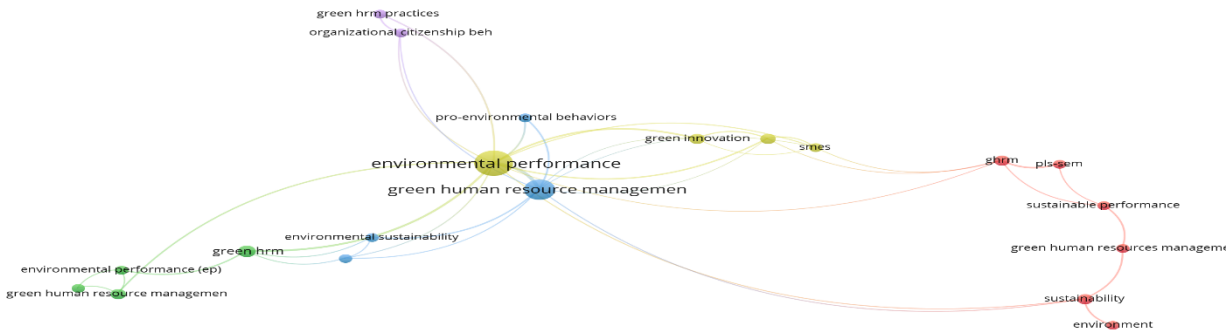

Figure 5. Co-occurrence of Keywords

By analyzing the co-occurrence of keywords, researchers can gain a deeper understanding of the dominant themes, emerging trends, and key topics within a specific discipline. It allows them to identify the central concepts and their associations, enabling further exploration of the existing knowledge base and potential areas for future research. The examination of keyword co-occurrence provides a visual representation of the intellectual landscape, aiding scholars in navigating and mapping the intricate web of ideas that shape their field of study (Cheng, Huang, Yu, & Wu, 2018). Moreover, it facilitates the organization and categorization of knowledge, contributing to the advancement and development of the field as a whole. Ultimately, the analysis of keyword co-occurrence serves as a powerful tool for researchers to comprehend and depict the intricate knowledge structure embedded within the existing literature. There are 5 clusters in this figure. And Table 8 shows keywords in each cluster.

Table 8. Keyword Clusters

Cluster	Number of Keywords	Keywords
1	6	"Environment, GHRM, Green Human Resources Management, Pls-Sem, Sustainability, Sustainable Performance"
2	4	"Environmental Performance, Green HRM, Green Human Resource Management, Green Psychological Climate"
3	4	"Environmental Sustainability, Green Human Resource Management, Pro-Environmental Behavior, Sustainable Development"
4	4	"Environmental Performance, Green Innovation, Green Transformational Leadership, SMEs"
5	2	"Green Human Resource Practices, Organizational Citizenship"

Green Innovation, Green Transformational Leadership, and Sustainability are the most frequently used keywords in "GHRM" and "Environmental Performance" publications.

Results and Conclusion

Both scholars and practitioners have given the idea of "GHRM" and "Environmental Performance" a lot of attention. Previous research and the authors' examination of the literature on "GHRM" and "Environmental Performance" indicate that these subjects are expanding. The world has already become more complicated, dynamic, and unpredictable because of globalization and recent advancements in information and communication technologies. Organizations may encounter constant rivalry, particularly when there are strong demands for performance, quality, and affordability (Nivlouei, 2014). As a result, to differentiate themselves from other companies in this competitive industry, they frequently look for unique techniques. Environmentalism is one of them. Because of this, utilizing "GHRM" and "Environmental Performance" effectively became essential to achieving their objectives (Som, 2008). The "GHRM" and "Environmental Performance" mission is to aid in the accomplishment of HRM objectives. In addition, corporations began using "GHRM" and "Environmental Performance" to stay one step ahead of their rivals. Because of this, researchers concentrate on these subjects to show the true benefits of "GHRM" and "Environmental Performance" to organizations.

Understanding the key trends in research that are presently being published in a certain field or publication is the aim of the bibliometrics study. It is a useful strategy to gather information throughout a specific period about a given research location. It enables readers to find the necessary important knowledge from a variety of sources. This study examines studies on "GHRM" and "Environmental Performance" that appeared in publications between 2015 and 2023. The Scopus database is used to compile bibliographic information. This research offers useful details on the publications that were published, the primary authors, and the institutions that actively pursued "GHRM" and "Environmental Performance" research. The results show that over the last four years, there has been a significant increase in the number of articles published on "GHRM" and "Environmental Performance", with 2022 registering the most publications with 15 publications. Citations are volatile about these topics.

The most productive country is Pakistan with 13 publications. Despite coming from across the world, most publications (more than 55%) are from Pakistan and Malaysia. Any nation's long-term growth is based on the state of its environment. Although Pakistan's economy is growing with time, the country still has significant environmental challenges. Concerns about Pakistan's climate and environment include water contamination, soil deterioration, and degradation of land, scarcity of water, climate change, air pollution, and catastrophic events. The environmental assets and habitats of Pakistan are under severe stress and pollution. The nation's main environmental issues include the overuse of finite natural resources, pollution of the air and water, depletion of energy resources, destruction of forests, and waste management. Agricultural and industrial wastewater has polluted water supplies. In urban areas, manufacturing and automobile pollution have both contributed to poor air quality, which is a result of ongoing deforestation (GRAANA, 2022). According to the Environmental Performance Index (EPI), Pakistan ranked 176th in the top 180 countries. As for Malaysia, it has nearly the same problems as Pakistan. While it's better ranked in the EPI, its problems are crucial as Pakistan. Malaysia's top 5 environmental problems according to global warming (45%), air pollution (33%), water pollution (27%), deforestation (24%), and flooding (24%) (STATISTA, 2019). Environmentalism is integrated into many fields because of growing concerns about the environment. One of these fields is human resources management. According to Bissing-Olson et al. (2013), GHRM is the application of HRM functions that have a beneficial impact on employees' behaviors towards the environment and eventually reinforce the businesses' performance in the environment. Additionally, it incorporates environmental management into all HRM procedures, including hiring and firing as well as managing staff efficiency (Renwick et al., 2013). So, because of these growing problems in Pakistan and Malaysian scholars are trying to show their concerns on the topic by publishing articles. As for the number of citations France is the most prolific country with 1123 citations. Russian Federation is the most prolific in terms of citations per publication with 254.5 citations per article.

There were 165 citations on the subject in 2015, 61 citations in 2018, and 775 citations in 2020. But there is a rise, especially in the number of publications after the 2019 year. This rapid rise in publications and citations indicates that academics' and researchers' interest in this subject is growing with time.

The findings reveal that each author has contributed 1 or 2 articles on these subjects. However, in terms of citations, Jabbour, C.J.C. holds the top position with a total of 436 citations, followed by Guerci, M. with 317 citations. In the realm of "GHRM" and "Environmental Performance," University Utara Malaysia and The Superior University Lahore in Pakistan have jointly published 4 articles. There may be two reasons for this result. Both Malaysia and Pakistan, where the University of Utara Malaysia and The Superior University Lahore are located, have unique environmental contexts and challenges. Publishing articles on GHRM and environmental performance allows these universities to address regional issues, contribute to local knowledge, and propose solutions tailored to their specific contexts. And also, these universities may actively seek collaborations with other academic institutions, both domestically and internationally, to enhance research output. Collaborative projects involving researchers from different universities and countries can lead to increased publication activity, as multiple perspectives and expertise are brought together to explore GHRM and environmental performance. And this result also indicates that institutions from various regions around the world have conducted studies on these topics, emphasizing their global significance and relevance to the modern business landscape. Additionally, it highlights the widespread interest in these subjects across diverse geographical locations.

As for co-citations, the most important authors working on these subjects live in the Arabian Peninsula and the surrounding countries (Iran, Egypt, and Saudi Arabia). There could be several reasons for this result. First of all, these countries may have national policies that care about achieving sustainability goals and reducing environmental impacts. Green human resources and environmental performance play an important role in achieving these goals. Second countries such as Egypt, Iran, and Saudi Arabia are regions rich in natural resources. It is important to manage these resources sustainably and to minimize environmental impacts. Therefore, these countries can focus on green human resources and environmental performance areas. Third environmental pressures such as climate change, environmental pollution, and depletion of natural resources can make these countries turn their attention to green human resources and environmental performance issues. It has become important to develop strategies to combat these problems and increase environmental sustainability. And fourth globally, environmental performance and sustainability issues are becoming increasingly important. International society and environmental organizations can pressure countries to improve their green human resources practices and environmental performance. These countries can focus on this area to comply with international standards and strengthen their reputation.

In terms of prominent sources on "GHRM" and "Environmental Performance," the journal "Sustainability" stands out as the most prolific, having published nine articles. The "Journal of Cleaner Production" secures the second position with four publications. In terms of citations per publication, "Technological Forecasting and Social Science" takes the lead with a total of 647 citations and an average of 323.5 citations per publication. Regarding the co-occurrence of keywords, "Green Innovation," "Green Transformational Leadership," and "Sustainability" emerges as the most frequently utilized terms in publications on "GHRM" and "Environmental Performance".

Limitations and Suggestions for Future Research

The fields of "GHRM" and "Environmental Performance" have witnessed growth in recent years, demonstrating the significance of this industry. Noteworthy alterations in organizational frameworks, enhanced delivery of services, sustainable practices and implementations, the sustainability of both the environment and finances, improved employee performance, and increased speed and precision in GHRM decisions are just a few instances. As a result, GHRM emerges as a vital field of study for both academics and practitioners. Despite the ongoing development of its theoretical foundation, there is considerable variability in the outcomes of "GHRM" and "Environmental Performance", which continues to capture the interest of researchers and scholars. Further academic research is expected to eliminate any remaining uncertainties on this subject. However, the study does have certain limitations. First, since the data were obtained from the Scopus database rather than from publications listed in other databases such as the Web of Science, the findings cannot be generalized. Considering that the data were derived from Scopus, it is advisable to conduct additional analysis by incorporating data from other databases, as the limitations of this particular database may have influenced the research. Second, a comprehensive qualitative literature review of the field is strongly recommended to gain a thorough understanding, as their investigation constitutes a bibliometric analysis

(quantitative analysis) of the "GHRM" and "Environmental Performance" fields, and the proposed future directions are based on quantitative analysis.

References

Agyabeng-Mensah, Y., & Tang, L. (2021). The relationship among green human capital, green logistics practices, green competitiveness, social performance and financial performance. Journal of Manufacturing Technology Management, 32(7), 1377-1398. https://doi.org/10.1108/JMTM-11-2020-0441

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*, *8*(4), e0548-e0548. https://doi.org/10.26668/businessreview/2023.v8i4.548

Aksnes, D. W., Langfeldt, L., &Wouters, P. (2019). Citations, citation indicators, and research quality: An overview of basic concepts and theories. *Sage Open*, *9*(1), 2158244019829575. https://doi.org/10.1177/2158244019829575

Amrutha, V. N., & Geetha, S. N. (2020). A systematic review on green human resource management: Implications for social sustainability. *Journal of Cleaner Production*, *247*, 119131. https://doi.org/10.1016/j.jclepro.2019.119131

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

Baker, H. K., Pandey, N., Kumar, S., & Haldar, A. (2020). A bibliometric analysis of board diversity: Current status, development, and future research directions. *Journal of Business Research*, *108*, 232-246. https://doi.org/10.1016/j.jbusres.2019.11.025

Baker, H. K., Kumar, S., Pandey, N., & Kraus, S. (2023). Contemporary Accounting Research: A retrospective between 1984 and 2021 using bibliometric analysis. *Contemporary Accounting Research*, *40*(1), 196-230. https://doi.org/10.1111/1911-3846.12779

Bissing-Olson, M. J., Iyer, A., Fielding, K. S., &Zacher, H. (2013). Relationships between daily affect and pro-environmental behavior at work: The moderating role of pro-environmental attitude. *Journal of Organizational Behavior*, *34*(2), 156-175. https://doi.org/F10.1002/job.1788

Burki, U., Najam, U., & Dahlstrom, R. (2022). Measuring environmental performance in business to business relationships: a bibliometric review. *Marketing Intelligence & Planning*, *40*(2), 205-226. https://doi.org/10.1108/MIP-05-2021-0141

Callon, M., Courtial, J.-P., Turner, W. A., &Bauin, S. (1983). From translations to problematicnetworks: An introduction to co-word analysis. *Information (InternationalSocial Science Council)*, 22(2), 191–235. https://doi.org/10.1177/053901883022002003.

Cheng, F.-F., Huang, Y.-W., Yu, H.-C., & Wu, C.-S. (2018). Mapping knowledge structureby keyword co-occurrence and social network analysis. *Library Hi Tech*, 36(4),636–650. https://doi.org/10.1108/lht-01-2018-0004.

Donthu, N., Kumar, S., &Pattnaik, D. (2020). Forty-five years of Journal of Business Research: A bibliometric analysis. *Journal of business research*, *109*, 1-14. https://doi.org/10.1016/j.jbusres.2019.10.039

Donthu, N., Kumar, S., Pandey, N., & Lim, W. M. (2021a). Research constituents, intellectual structure, and collaboration patterns in Journal of International Marketing: An analytical retrospective. *Journal of International Marketing*, *29*(2), 1-25. https://doi.org/10.1002/for.2731

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021b). 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

Donthu, N., Kumar, S., Pattnaik, D., & Lim, W. M. (2021c). A bibliometric retrospection of marketing from the lens of psychology: Insights from Psychology & Marketing. *Psychology & Marketing*, *38*(5), 834-865. https://doi.org/10.1002/mar.21472

Durán-Sánchez, A., Del Río, M. D. L. C., Álvarez-García, J., & García-Vélez, D. F. (2019). Mapping of scientific coverage on education for Entrepreneurship in Higher Education. *Journal of Enterprising Communities: People and Places in the Global Economy*, *13*(1/2), 84-104.

Elmagrhi, M. H., Ntim, C. G., Elamer, A. A., & Zhang, Q. (2019). A study of environmental policies and regulations, governance structures, and environmental performance: The role of female directors. *Business strategy and the environment*, *28*(1), 206-220. https://doi.org/10.1002/bse.2250

Elshaer, I. A., Sobaih, A. E. E., Aliedan, M., &Azazz, A. M. (2021). The effect of green human resource management on environmental performance in small tourism enterprises: Mediating role of pro-environmental behaviors. *Sustainability*, *13*(4), 1956. https://doi.org/10.3390/su13041956

Fachada, J., Rebelo, T., Lourenço, P., Dimas, I., & Martins, H. (2022). Green Human Resource Management: A Bibliometric Analysis. *Administrative Sciences*, *12*(3), 95. https://doi.org/10.3390/admsci12030095

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

Gilal, F. G., Ashraf, Z., Gilal, N. G., Gilal, R. G., & Channa, N. A. (2019). Promoting environmental performance through green human resource management practices in higher education institutions: A moderated mediation model. *Corporate Social Responsibility and Environmental Management*, *26*(6), 1579-1590. https://doi.org/10.1002/csr.1835

Gong, Y., Lyu, B., & Gao, X. (2018). Research on teaching Chinese as a second or foreign language in and outside mainland China: A bibliometric analysis. *The Asia-Pacific Education Researcher*, *27*(4), 277-289. https://doi.org/10.1007/s40299-018-0385-2

GRAANA (2022). *Environmental Issues in Pakistan.* Available from: https://www.graana.com/blog/environmental-issues-in-pakistan/ (Access Date: 02.03.2023).

Gu, Z., Meng, F., & Farrukh, M. (2021). Mapping the research on knowledge transfer: A scientometrics approach. *IEEE Access*, *9*, 34647-34659. https://doi.org/10.1109/ACCESS.2021.3061576

Guerci, M., Longoni, A., & Luzzini, D. (2016). Translating stakeholder pressures into environmental performance–the mediating role of green HRM practices. *The International Journal of Human Resource Management*, *27*(2), 262-289. https://doi.org/10.1080/09585192.2015.1065431

Guerrero-Baena, M. D., Gómez-Limón, J. A., & Fruet Cardozo, J. V. (2014). Are multi-criteria decision making techniques useful for solving corporate finance problems? A bibliometric analysis. *Revista de Metodos Cuantitativos para la Economia y la Empresa*, *17*, 60-79.

Gurzki, H., &Woisetschläger, D. M. (2017). Mapping the luxury research landscape: A bibliometric citation analysis. *Journal of business research*, *77*, 147-166. https://doi.org/10.1016/j.jbusres.2016.11.009

Hameed, Z., Khan, I. U., Islam, T., Sheikh, Z., & Naeem, R. M. (2020). Do green HRM practices influence employees' environmental performance?. *International Journal of Manpower*, *41*(7), 1061-1079. https://doi.org/10.1108/IJM-08-2019-0407

Harris, S., Martin, M., & Diener, D. (2021). Circularity for circularity's sake? Scoping review of assessment methods for environmental performance in the circular economy. *Sustainable Production and Consumption*, *26*, 172-186. https://doi.org/10.1016/j.spc.2020.09.018

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

Jabbour, C. J. C. (2011). How green are HRM practices, organizational culture, learning and teamwork? A Brazilian study. *Industrial and Commercial Training*, *43*(2), 98-105. https://doi.org/10.1108/00197851111108926

Jang, H., Wood, J., & Khan, G. F. (2017). A social network analysis of knowledge infrastructure in the second language acquisition domain. *Linguistic Research*, *34*, 125-160. https://doi.org/10.17250/khisli.34..201709.006

Jasch, C. (2000). Environmental performance evaluation and indicators. *Journal of cleaner production*, *8*(1), 79-88. https://doi.org/10.1016/S0959-6526(99)00235-8

Jorge, M. L., Madueño, J. H., Martínez-Martínez, D., & Sancho, M. P. L. (2015). Competitiveness and environmental performance in Spanish small and medium enterprises: is there a direct link?. *Journal of cleaner production*, *101*, 26-37. https://doi.org/10.1016/j.jclepro.2015.04.016

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

Kim, Y. J., Kim, W. G., Choi, H. M., &Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *International Journal of Hospitality Management*, *76*, 83-93. https://doi.org/10.1016/j.ijhm.2018.04.007

Kristoffersen, E., Mikalef, P., Blomsma, F., & Li, J. (2021). The effects of business analytics capability on circular economy implementation, resource orchestration capability, and firm performance. *International Journal of Production Economics*, *239*, 108205. https://doi.org/10.1016/j.ijpe.2021.108205

Liu, W., Hu, G., Tang, L., & Wang, Y. (2015). China's global growth in social science research: Uncovering evidence from bibliometric analyses of SSCI publications (1978–2013). *Journal of informetrics*, *9*(3), 555-569. https://doi.org/10.1007/s11192-014-1517-y

Marler, J. H., &Boudreau, J. W. (2017). An evidence-based review of HR Analytics. *The International Journal of Human Resource Management*, *28*(1), 3-26. https://doi.org/10.1080/09585192.2016.1244699

Marler, J. H., & Fisher, S. L. (2013). An evidence-based review of e-HRM and strategic human resource management. *Human resource management review*, *23*(1), 18-36. https://doi.org/10.1016/j.hrmr.2012.06.002

Martínez-López, F. J., Merigó, J. M., Valenzuela-Fernández, L., & Nicolás, C. (2018). Fifty years of the European Journal of Marketing: a bibliometric analysis. *European Journal of Marketing*, *52*(1/2), 439-468. https://doi.org/10.1108/EJM-11-2017-0853

Mas-Tur, A., Modak, N. M., Merigó, J. M., Roig-Tierno, N., Geraci, M., & Capecchi, V. (2019). Half a century of Quality & Quantity: a bibliometric review. *Quality & Quantity*, *53*, 981-1020. https://doi.org/10.1007/s11135-018-0799-1

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

Naz, S., Jamshed, S., Nisar, Q. A., & Nasir, N. (2022). Green HRM, psychological green climate and pro-environmental behaviors: An efficacious drive towards environmental performance in China. In *Key Topics in Health, Nature, and Behavior* (pp. 95-110). Cham: Springer Nature Switzerland.

Nisar, Q. A., Haider, S., Ali, F., Jamshed, S., Ryu, K., & Gill, S. S. (2021). Green human resource management practices and environmental performance in Malaysian green hotels: The role of green intellectual capital and pro-environmental behavior. *Journal of Cleaner Production*, *311*, 127504. https://doi.org/10.1016/j.jclepro.2021.127504

Nivlouei, F. B. (2014). Electronic human resource management system: The main element in capacitating globalization paradigm. *International Journal of Business and Social Science*, *5*(2), 147-159.

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

Pham, N. T., Hoang, H. T., & Phan, Q. P. T. (2020). Green human resource management: a comprehensive review and future research agenda. *International Journal of Manpower*, *41*(7), 845-878. https://doi.org/10.1108/IJM-07-2019-0350

Pinzone, M., Guerci, M., Lettieri, E., &Huisingh, D. (2019). Effects of 'green'training on pro-environmental behaviors and job satisfaction: Evidence from the Italian healthcare sector. *Journal of Cleaner Production*, *226*, 221-232. https://doi.org/10.1016/j.jclepro.2019.04.048

Qin, Y., Xu, Z., Wang, X., &Škare, M. (2022). Green energy adoption and its determinants: A bibliometric analysis. *Renewable and Sustainable Energy Reviews*, *153*, 111780. https://doi.org/10.1016/j.rser.2021.111780

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

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

Ren, S., Tang, G., & E Jackson, S. (2018). Green human resource management research in emergence: A review and future directions. *Asia Pacific Journal of Management*, *35*, 769-803. https://doi.org/10.1007/s10490-017-9532-1

Ren, S., Tang, G., & Jackson, S. E. (2021). Effects of Green HRM and CEO ethical leadership on organizations' environmental performance. *International Journal of Manpower*, *42*(6), 961-983. https://doi.org/10.1108/IJM-09-2019-0414

Renwick, D. W., Jabbour, C. J., Muller-Camen, M., Redman, T., & Wilkinson, A. (2016). Contemporary developments in Green (environmental) HRM scholarship. *The International Journal of Human Resource Management*, *27*(2), 114-128. https://doi.org/10.1080/09585192.2015.1105844

Renwick, D. W., Redman, T., & Maguire, S. (2013). Green human resource management: A review and research agenda. *International journal of management reviews*, *15*(1), 1-14. https://doi.org/10.1111/j.1468-2370.2011.00328.x

Roscoe, S., Subramanian, N., Jabbour, C. J., & Chong, T. (2019). Green human resource management and the enablers of green organisational culture: Enhancing a firm's environmental performance for

sustainable development. *Business Strategy and the Environment*, *28*(5), 737-749. https://doi.org/10.1002/bse.2277

Rubel, M. R. B., Kee, D. M. H., &Rimi, N. N. (2021). Green human resource management and supervisor pro-environmental behavior: The role of green work climate perceptions. *Journal of Cleaner Production*, *313*, 127669. https://doi.org/10.1016/j.jclepro.2021.127669

Saeed, B. B., Afsar, B., Hafeez, S., Khan, I., Tahir, M., & Afridi, M. A. (2019). Promoting employee's proenvironmental behavior through green human resource management practices. *Corporate Social Responsibility and Environmental Management*, *26*(2), 424-438. https://doi.org/10.1002/csr.1694

Sharifi, A. (2021). Urban sustainability assessment: An overview and bibliometric analysis. *Ecological Indicators*, *121*, 107102. https://doi.org/10.1016/j.ecolind.2020.107102

Silveira, F. F., &Zilber, S. N. (2017). Is social innovation about innovation? A bibliometric study identifying the main authors, citations and co-citations over 20 years. *International Journal of Entrepreneurship and Innovation Management*, *21*(6), 459-484. https://doi.org/10.1504/IJEIM.2017.086936

Singh, S. K., Chen, J., Del Giudice, M., & El-Kassar, A. N. (2019). Environmental ethics, environmental performance, and competitive advantage: Role of environmental training. *Technological Forecasting and Social Change*, *146*, 203-211. https://doi.org/10.1016/j.techfore.2019.05.032

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

Sobaih, A. E. E., Hasanein, A., &Elshaer, I. (2020). Influences of green human resources management on environmental performance in small lodging enterprises: The role of green innovation. *Sustainability*, *12*(24), 10371. https://doi.org/10.3390/su122410371

Som, A. (2008). Innovative human resource management and corporate performance in the context of economic liberalization in India. *The International Journal of Human Resource Management*, *19*(7), 1278-1297. https://doi.org/10.1080/09585190802110075

STATISTA (2019). *Most Concerning Enviromental Issues According to Citizens across Malaysia as of March 2019*. Available From: https://www.statista.com/statistics/1000112/malaysia-leading-environmental-issues/ (Access Date: 02.03.2023).

Strohmeier, S. (2007). Research in e-HRM: Review and implications. *Human resource management review*, *17*(1), 19-37. https://doi.org/10.1016/j.hrmr.2006.11.002

Strohmeier, S., &Kabst, R. (2014). Configurations of e-HRM–an empirical exploration. *Employee Relations*, *36*(4), 333-353. https://doi.org/10.1108/ER-07-2013-0082

Subramanian, N., Abdulrahman, M. D., Wu, L., & Nath, P. (2016). Green competence framework: evidence from China. *The International Journal of Human Resource Management*, *27*(2), 151-172. https://doi.org/10.1080/09585192.2015.1047394

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

Valenzuela-Fernandez, L., Merigó, J. M., Lichtenthal, J. D., & Nicolas, C. (2019). A bibliometric analysis of the first 25 years of the Journal of Business-to-Business Marketing. *Journal of Business-to-Business Marketing*, *26*(1), 75-94. https://doi.org/10.1080/1051712X.2019.1565142

Van Eck, N., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *scientometrics*, *84*(2), 523-538. https://doi.org/10.1007/s11192-009-0146-3

Wu, H., Cheng, K., Guo, Q., Yang, W., Tong, L., Wang, Y., & Sun, Z. (2021). Mapping knowledge structure and themes trends of osteoporosis in rheumatoid arthritis: a bibliometric analysis. *Frontiers in Medicine*, *8*, 787228. https://doi.org/10.3389/fmed.2021.787228

Yong, J. Y., Yusliza, M. Y., & Fawehinmi, O. O. (2020). Green human resource management: A systematic literature review from 2007 to 2019. *Benchmarking: An International Journal*, *27*(7), 2005-2027. https://doi.org/10.1108/BIJ-12-2018-0438

Yu, W., Chavez, R., Feng, M., Wong, C. Y., &Fynes, B. (2020). Green human resource management and environmental cooperation: An ability-motivation-opportunity and contingency perspective. *International Journal of Production Economics*, *219*, 224-235. https://doi.org/10.1016/j.ijpe.2019.06.013

Yusoff, Y. M., Nejati, M., Kee, D. M. H., & Amran, A. (2020). Linking green human resource management practices to environmental performance in hotel industry. *Global Business Review*, *21*(3), 663-680. https://doi.org/10.1177/0972150918779294

Zhang, J., Zhang, Z., Ballesteros-Pérez, P., Skitmore, M., Yang, G., Philbin, S. P., & Lu, Q. (2021). Factors influencing environmental performance: a bibliometric review and future research agenda. *International Journal of Urban Sciences*, 1-27. https://doi.org/10.1080/12265934.2021.1899845

Zibarras, L. D., &Coan, P. (2015). HRM practices used to promote pro-environmental behavior: a UK survey. *The International Journal of Human Resource Management*, *26*(16), 2121-2142. https://doi.org/10.1080/09585192.2014.972429

Zupic, I., &Čater, T. (2015). Bibliometric methods in management and organization. *Organizational research methods*, *18*(3), 429-472. https://doi.org/10.1177/1094428114562629

GENİŞLETİLMİŞ ÖZET

Bu çalışma, bibliyometrik analiz tekniğini kullanarak, yeşil insan kaynakları yönetimi (YİKY) ve çevresel performans kavramlarını ele alan araştırmaları incelemeyi amaçlamaktadır. YİKY ve çevresel performans literatüründeki yayınların ve alıntıların mevcut durumu ve eğilimleri nelerdir? YİKY ve çevresel performans literatürüne en çok katkıda bulunan üniversiteler, yazarlar ve dergiler nelerdir? YİKY ve çevresel performans konusunda en çok atıf yapılan yayınlar nelerdir? Günümüzde yeşil odaklı yaklaşımlar hem uygulamada hem de akademik gündemde popüler hale gelmiştir. Bu popülarite bir moda olmaktan çok çevresel ihtiyaçları karşılamaya yönelik çözümler aramak için ortaya çıkmıştır. Literatürde insan kaynakları yönetiminin çevre-ekonomik dengesi yeşil insan kaynakları yönetimini doğurmuştur (Amrutha ve Geetha, 2020). Sürdürülebilir iş yapılarını koruma ve karbon ayak izini azaltma çabaları son zamanlarda YİKY'ne olan ilgiyi artırmıştır (Yong vd., 2020). YİKY, örgütsel hedeflere ulaşmada insan kaynakları yönetimi uygulamalarına yönelik çevreci bir yaklaşımdır (Renwick ve diğerleri, 2016). YİKY, kuruluşların çevresel performansını yönlendirmede ve geliştirmede önemli bir rol oynar. YİKY, çalışanların sürdürülebilirlik hedeflerine ulaşmada kilit paydaşlar olduğunu kabul eder ve çevresel hususları insan kaynakları politikalarına ve uygulamalarına entegre etmeye odaklanır (Pham ve diğerleri, 2020). Geleneksel rekabet stratejileri, şirketlerin karlılıklarını maksimize etmeye ve rekabet güçlerini yüksek tutmaya odaklanmaktadır. Ancak bu noktada çevresel faktörlerin göz ardı edilmesi eleştirilerin gündeminde yerini almaktadır. Aslında çevresel performans ile firma performansı arasında pozitif bir ilişki olsa da her ikisinin de kısıtlayıcı bir role sahip olduğunu yani rakip olduklarını gösteren çalışmalar mevcuttur (Jorge vd., 2015). Hükümet çevre koruma politikaları ve düzenlemeleri, şirketlerin çevresel performanslarını izlemeleri için itici güçler arasındadır (Elmagrhi ve diğerleri, 2019). Çevresel performansın bir diğer ayağı da çevreci bir anlayış kazanmış insan kaynağıdır (Singh vd., 2019). YİKY uygulamaları, çalışanların çevresel performansını olumlu yönde etkilemektedir (Hameed vd., 2020). Bireysel bazda çevresel performans, organizasyon düzeyinde çevresel performansın oluşumuna doğrudan katkıda bulunmaktadır. Bu nedenle insan kaynakları ve bu kaynağın yeşil odaklı yönetimi çevresel performansın kaçınılmaz unsurları arasında yer almaktadır. YİKY uygulamalarının çalışanlardaki çevreci davranışı geliştirmede etkin rol oynadığını destekleyen çalışmalar da bulunmaktadır (Saeed vd., 2019; Rubel vd., 2021; Naz vd., 2022). Şirketlerin sürdürülebilir performans sağlayabilmeleri için mevcut kaynaklarını maksimum düzeyde kullanmaları gerekmektedir. İnsan sermayesinin çevresel performansı sürdürülebilir kılmada doğrudan etkisi bulunmaktadır (Sobaih vd., 2020; Ojo vd. 2022). Aynı zamanda araştırmalar, YİKY'nin çevresel performansı dolaylı olarak etkilediğini göstermiştir (Singh vd., 2020). Bu nedenle, YİKY ile çevresel performans arasında doğrudan ve dolaylı bir bağlantı olduğu açıktır. Bu aşamada çevresel performansı, YİKY kapsamında, çalışanları çevre dostu faaliyetlerde bulunmaya teşvik ederek ve çevresel değerleri dikkate alarak elde edilen performans çıktıları olarak tanımlamak mümkündür. Bu ilişkinin bağlamını açıklamaya yönelik akademik çalışmalar da literatüre katkı sağlayan temel unsurlar olarak kabul edilmektedir. Bibliyometrik analiz, sosyal bilim araştırmacıları tarafından yazarları (Wu vd., 2021), makaleleri, konuları (Gurzki ve Woisetschläger, 2017), dergileri (Martínez-López vd., 2018; Valenzuela) Fernandez, vd., 2019) ve ulusları (Mas-Tur vd., 2019) analiz etmek ve sıralamak için daha sık kullanılmaktadır. Bibliyometri tekniği, yayınlanmış akademik literatürün bibliyografik verilerini kullanan karşılaştırmalı bir nicel değerlendirme yöntemidir. Yayınların miktarı, referanslar, sosyal ağ (ortak yazarlık) ve konulardaki önemli eğilimler dâhil olmak üzere bibliyografyanın farklı özelliklerini inceler (Marler ve Boudreau, 2017).Şu anda belirli bir alanda veya yayında yayınlanmakta olan araştırmalardaki temel eğilimleri anlamak, bibliyometrik çalışmanın amacıdır. Belirli bir araştırma yeri hakkında belirli bir süre boyunca bilgi toplamak yararlı bir stratejidir. Okuyucuların gerekli önemli bilgileri çeşitli kaynaklardan bulmasını sağlar. Bu çalışma, 2015 ve 2023 yılları arasında yayınlarda yer alan "YİKY" ve "Çevresel Performans" konulu çalışmaları incelemektedir. Bibliyografik bilgileri derlemek için Scopus veri tabanı kullanılmaktadır. Bu araştırma, yayınlanan yayınlar, birincil yazarlar ve "YİKY" ve "Çevresel Performans" araştırmasını aktif olarak yürüten kurumlar hakkında yararlı ayrıntılar sunmaktadır. Sonuçlar, son dört yılda "YİKY" ve "Çevresel Performans" üzerine yayınlanan makale sayısında önemli bir artış olduğunu ve 2022'nin 15 yayınla en çok yayını kaydettiğini göstermektedir. Bu konular hakkındaki atıfların sayısı değişkenlik göstermektedir. Konuya 2015 yılında 165, 2018 yılında 61 atıf yapılmıştır. En çok atfın yapıldığı 2020 yılında ise 775 atıf yapılmıştır. Ancak özellikle 2019 yılından sonra yayın konusunda artış görülmektedir. Yayın ve atıflardaki bu hızlı artış, akademisyenlerin ve araştırmacıların bu konuya olan ilgisinin zamanla arttığını göstermektedir. Bulgular, tüm yazarların bu

konularda en fazla 2 makale yayınladığını göstermektedir. Makalelere yapılan atıflarda, Jabbour, C.J.C. 436 toplam atıf ile ilk sırada yer almaktadır. Guerci, M. 317 alıntı ile Jabbour, C.J.C. ardından ikinci sırada yer almaktadır. "YİKY" ve "Çevresel Performans" üzerine materyaller yayınlayan akademik kurumlarla ilgili olarak, "Malezya Utara Üniversitesi" ve Pakistan'daki "Üstün Lahor Üniversitesi" 4 yayın ile en üretken üniversitelerdir. En iyi "YİKY" ve "Çevresel Performans" kaynakları hakkında "Sustainability" dokuz yayınla en verimli dergi olurken, "Journal of CleanerProduction" dört yayınla ikinci sırada yer alıyor. Atıflara bakıldığında, "Technological Forecasting and Social Science" toplam 647 atıf ve yayın başına 323,5 atıf ile ilk sırada yer almaktadır. Ayrıca "YİKY" ve "Çevresel Performans" ile birlikte en çok kullanılan anahtar kelimeler "Yeşil İnovasyon", "Yeşil Dönüşümcü Liderlik" ve "Sürdürülebilirlik" dir.