

A Journey of 19 years on Sustainable Human Resource Management: A bibliometric analysis

Siksha Rawat^{1*}, Animesh Singh²

¹Research Scholar, Manav Rachna University, Faridabad (Haryana), India

Siksharawat77@gmail.com

²Associate Professor, Manav Rachna University, Faridabad (Haryana), India

Animesh.hrd@gmail.com

Abstract

Human resource management (HRM) is becoming a major force behind organizational sustainability as a result of the increased focus on sustainability and corporate responsibility. With information obtained solely from the Scopus database, this study offers a thorough bibliometric analysis of Sustainable Human Resource Management (SHRM) literature produced between 2006 and 2024. Examining the publication trends, top contributors, theme development, and international collaboration networks that characterize the intellectual framework of SHRM research is the goal. VOSviewer was used for performance analysis and science mapping on 190 pertinent documents, including journal articles, book chapters, and conference papers. The data shows that publications have been steadily increasing since 2010, with a notable spike around 2019, which reflects the growing worldwide interest in sustainable development and the Sustainable Development Goals (SDGs) of the UN. While newer studies have branched out toward multifaceted subjects like green HRM, ESG-oriented practices, digital transformation, and resilience, the early stages of SHRM research focused on ethical employment and employee well-being.

Keyword co-occurrence analysis identifies “sustainability,” “green HRM,” “corporate social responsibility (CSR),” and “employee well-being” as dominant terms, signifying their central role in the discipline. Emerging keywords like “innovation,” “digital HRM,” and “sustainable leadership” indicate a shift toward integrating technology and strategy with sustainability. Co-authorship and collaboration network analyses reveal an increasing trend of international and interdisciplinary research, with strong partnerships observed between countries such as the United Kingdom, India, Australia, and Germany.

This study contributes by mapping the evolution, structure, and future trajectory of SHRM research, providing a systematic understanding of how HRM supports sustainable organizational performance. The findings underscore that SHRM has evolved from a conceptual notion into a strategic and data-driven field promoting long-term human, social, and environmental sustainability.

Keywords: Sustainable Human Resource Management (SHRM); Employee Well-being; Vosviewer; Bibliometric Analysis

1. Introduction

In recent decades, the concept of *sustainability* has become a central theme in academic and policy discussions, extending from environmental sciences to management and organizational studies. The roots of the sustainability discourse trace back to the *Club of Rome's* seminal report *Limits to Growth* (1972), which warned of the ecological and social consequences of unchecked industrialization. However, the modern understanding of sustainability largely emerged from the United Nations' *World Commission on Environment and Development* (WCED), commonly known as the

Brundtland Commission (1987). The commission defined sustainability as “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*” This definition laid the foundation for the three-pillar model of sustainable development—economic, social, and environmental dimensions—which together emphasize the interdependence of economic prosperity, environmental protection, and social equity (Brundtland Commission, 1987; Leal Filho, 2000).

Following this global call, organizations across the world began integrating sustainability into their

strategic agendas. The corporate landscape witnessed a shift from profit-centric management toward a triple bottom-line approach balancing *people, planet, and profit* (Elkington, 1998; Wagner, 2015). This paradigm change prompted new reflections on how management functions, particularly Human Resource Management (HRM), could support sustainability. As businesses sought to internalize environmental and social goals, scholars argued that HRM—traditionally concerned with recruitment, performance, and retention—could become a critical enabler of sustainable corporate performance (Boudreau & Ramstad, 2005; Ehnert, 2009; Kramar, 2014). This idea gradually evolved into what is now termed Sustainable Human Resource Management (SHRM).

The concept of SHRM emerged in Europe and Australia during the early 2000s, influenced by parallel developments in environmental management and corporate social responsibility (Ehnert & Harry, 2012). It reflects a holistic integration of HRM policies with sustainability objectives, ensuring that human, social, and ecological considerations are embedded into organizational strategies (Ehnert et al., 2016; Zhang et al., 2019). SHRM emphasizes long-term employee well-being, ethical employment relationships, and socially responsible practices that contribute to both organizational resilience and societal welfare (Kramar, 2014; Wikhamn, 2019). Unlike traditional HRM, which often focuses on immediate performance outcomes, SHRM aims to balance short-term efficiency with long-term human and environmental sustainability.

The rapid pace of industrialization and globalization has also made sustainability more urgent. Rising resource consumption, environmental degradation, and psychosocial challenges such as job burnout, stress, and poor work-life balance have intensified calls for sustainable people management practices (Mariappanadar & Kramar, 2014; Stankevičiūtė & Savanavičienė, 2019). Researchers have suggested that sustainable HRM practices—such as green training, responsible leadership, employee well-being initiatives, and fair employment systems—can enhance both human capital development and environmental performance (Ehnert, 2009; Hahn et al., 2015). As such, SHRM provides a framework for creating organizational cultures that value employee

growth, inclusivity, and environmental consciousness.

From a theoretical standpoint, SHRM is underpinned by multiple frameworks. The *Stakeholder Theory* (Freeman, 1984) highlights the responsibility of organizations toward diverse internal and external stakeholders, including employees, communities, and regulators. The *Resource-Based View* (Wernerfelt, 1984) identifies human resources as strategic assets that drive competitive advantage through capability development and sustainable use of resources. The *Ability–Motivation–Opportunity (AMO) Theory* (Appelbaum et al., 2000) complements these views by suggesting that sustainability in HRM arises when organizations develop employee abilities, motivate them through supportive policies, and create opportunities for engagement in sustainable practices. Together, these frameworks explain how SHRM integrates social, environmental, and economic priorities within HR systems to achieve long-term viability.

Scholarly attention to SHRM has expanded substantially in the last two decades. Early works by Zaugg et al. (2001) and Gollan (2005) initiated the discourse on long-term human sustainability, emphasizing responsible employment and employee development. Subsequently, contributions by Ehnert (2009), Kramar (2014), and Mariappanadar (2019) strengthened the conceptual foundations of SHRM. Empirical studies have since linked SHRM to organizational performance, employee engagement, and environmental outcomes, demonstrating its multidimensional impact (De Prins et al., 2011; Avery & Bergsteiner, 2011). Despite this progress, bibliometric evidence indicates that SHRM remains an evolving research field, characterized by fragmented literature and emerging themes (Faisal, 2023; Belloum & Khemili, 2023; Putri, 2023).

Bibliometric analysis has become a preferred method to assess intellectual structures and research dynamics across management disciplines (Donthu et al., 2021; Khan & Muktar, 2020). It applies quantitative techniques to examine publications, citation patterns, and collaboration networks, providing an objective overview of scientific output. Visualization tools such as *VOSviewer* and *Biblioshiny* allow researchers to map relationships among authors, keywords, and countries, thereby

uncovering dominant themes and emerging clusters (Choudhary & Datta, 2022). In the HRM domain, bibliometric studies have previously explored topics such as training (Danvila-del-Valle et al., 2019), performance management (Garengo et al., 2022), and green HRM (Khan & Muktar, 2020). However, the number of bibliometric analyses focusing exclusively on Sustainable HRM remains limited, with notable contributions only by Kainzbauer & Rungruang (2019) and Faisal (2023). This gap underscores the need for a more comprehensive and updated synthesis of SHRM research trends.

The past four years have witnessed exponential growth in SHRM scholarship, reflecting its increasing relevance in global sustainability discourse. The proliferation of research outputs across Europe, Asia, and Oceania indicates that sustainability-oriented HRM has transitioned from a niche concept to a mainstream research domain (Belloum & Khemili, 2023). Yet, variations persist in definitions, theoretical applications, and regional research focus. Hence, a bibliometric investigation is timely to systematically map this intellectual evolution, identify leading contributors, and delineate the thematic focus areas shaping the field.

Accordingly, the present study conducts a bibliometric analysis of 190 documents on sustainable human resource management published between 2006 and 2024, retrieved from the *Scopus* database. The analysis combines performance indicators and science mapping techniques using *VOSviewer* to provide a visual and statistical representation of SHRM research. Specifically, the study addresses the following research questions:

1. How has the global distribution of research productivity in Sustainable Human Resource Management evolved across different countries between 2006 and 2024?
2. What is the annual publication trend of Sustainable Human Resource Management studies indexed in Scopus during the period 2006–2024?
3. Who are the most influential and productive authors contributing to the development of Sustainable Human Resource Management literature?
4. What are the dominant themes and conceptual dimensions explored within Sustainable Human

Resource Management research up to the year 2024?

5. How do co-authorship and international collaboration networks illustrate the intellectual connectivity among researchers in the field of Sustainable Human Resource Management?

By answering these questions, this study contributes to the growing body of knowledge on sustainable HRM. It offers a comprehensive overview of publication trends, intellectual structures, and research hotspots, thereby assisting academics, practitioners, and policymakers in understanding the trajectory of SHRM research. Moreover, this work aims to position sustainable HRM as a critical driver of corporate sustainability and human well-being in the 21st-century workplace

2. Literature Review

The evolution of Sustainable Human Resource Management (SHRM) has witnessed significant scholarly growth over the past two decades, transitioning from conceptual explorations to quantitative bibliometric analyses that map the intellectual and thematic structure of this emerging field. This section synthesizes key contributions, trends, and innovations derived from both prior bibliometric studies (such as Faisal, 2023; Belloum & Khemili, 2023; Khan & Muktar, 2020) and recent empirical developments. It also integrates insights from the current study's database of 190 Scopus-indexed publications, reflecting how SHRM has matured across global contexts from 2006 to 2024.

2.1 Theoretical Underpinnings of SHRM

The foundation of SHRM stems from the convergence of sustainability theories, strategic HRM frameworks, and ethical management practices. Early research identified sustainability as a multidimensional concept involving economic performance, environmental responsibility, and social equity (Brundtland Commission, 1987; Leal Filho, 2000). Ehnert (2009) and Kramar (2014) advanced this notion by proposing that HRM systems could operationalize sustainability through long-term employee well-being, socially responsible behavior, and ecological awareness. Later works such as Ehnert et al. (2016) and Mariappanadar (2019) positioned SHRM as a strategic mechanism that safeguards both human and natural resources while achieving organizational competitiveness.

The field draws upon several theoretical pillars—most notably, the Stakeholder Theory (Freeman, 1984), emphasizing the moral responsibility of organizations to balance interests across diverse stakeholders; the Resource-Based View (RBV) (Wernerfelt, 1984), which views employees as strategic assets contributing to sustainable advantage; and the Ability–Motivation–Opportunity (AMO) Theory (Appelbaum et al., 2000), which conceptualizes SHRM practices as a means to foster ability development, motivation, and opportunities for sustainable engagement. These frameworks collectively explain how human resource systems can foster ethical, ecological, and economic resilience.

2.2 Evolution and Conceptual Development

The origins of SHRM are traceable to European scholarship, particularly works by Zaugg et al. (2001) and Ehnert (2009), who introduced the concept of human resource sustainability. The German and Swiss models highlighted responsible employment, long-term skill development, and work-life balance, while Australian scholars such as Kramar (2014) and Gollan (2005) focused on participatory decision-making and fairness in employment relations. Together, these frameworks established SHRM as an extension of Strategic HRM, emphasizing longevity and ethical responsibility.

In the 2010s, SHRM gained momentum with growing global attention toward corporate sustainability and social responsibility. De Prins et al. (2011) proposed a ‘triple bottom-line HRM’ integrating ecological, social, and economic goals. Avery and Bergsteiner (2011) argued that sustainable leadership and high-commitment HR practices are critical to balancing stakeholder needs. Subsequent empirical studies linked SHRM to employee well-being (Stankevičiūtė & Savanavičienė, 2019), green innovation (Renwick et al., 2013), and resilience (Mariappanadar & Kramar, 2014). These works collectively shifted the field from normative theory toward measurable organizational outcomes.

2.3 Bibliometric Insights from Prior Studies

The earliest bibliometric studies, such as Kainzbauer and Rungruang (2019), offered foundational mapping of SHRM-related publications but were

limited in scope. More recent analyses—Khan & Muktar (2020), Faisal (2023), and Belloum & Khemili (2023)—utilized tools like *VOSviewer* and *Biblioshiny* to visualize the intellectual landscape. Faisal (2023) analyzed 188 Scopus-indexed documents from 2000–2022, identifying sustainability, employee well-being, and CSR as the dominant research clusters. Belloum & Khemili (2023) extended this by highlighting a lack of author collaboration, limited geographic diversity, and the growing influence of Asian research institutions. Their findings align with the present study, which observed significant publication surges after 2019 and increasing integration between SHRM and environmental, social, and governance (ESG) frameworks.

The study by Putri (2023) emphasized that SHRM research has evolved from purely conceptual models to data-driven empirical approaches. Similarly, Bahuguna et al. (2023) observed an expansion in methodological diversity, with bibliometric techniques revealing new cross-disciplinary linkages between SHRM, behavioral sciences, and sustainability accounting. These shifts underscore SHRM’s maturation into a multidisciplinary field bridging social responsibility, management innovation, and organizational psychology.

2.4 Recent Developments and Innovations

Contemporary scholarship (2020–2024) has expanded SHRM’s scope by incorporating digitalization, artificial intelligence, and remote work within sustainable management paradigms. Choudhary & Datta (2022) explored AI-driven HR analytics for improving sustainability outcomes through predictive workforce planning and eco-efficient HR operations. Stahl et al. (2020) proposed the integration of ESG performance into HR scorecards, framing SHRM as a measurable dimension of corporate sustainability governance.

Thematic evolution analyses reveal new clusters emerging around *employee resilience*, *psychological sustainability*, and *responsible leadership*. These trends reflect how organizations are redefining sustainability to encompass human flourishing and ethical culture, not merely environmental efficiency. Studies also show SHRM’s growing relevance in developing economies, where it addresses issues such as labor inclusivity, environmental compliance,

and equitable growth (Yadav et al., 2019; Siksha Rawat & Singh, 2024). This shift marks SHRM as both a sustainability driver and a social transformation tool.

the literature reveals that SHRM has transitioned from a theoretical proposition to an empirically grounded, globally relevant discipline. Its evolution has been marked by increasing interdisciplinarity, technological incorporation, and societal responsiveness. By synthesizing conceptual, methodological, and bibliometric advances, the current study contributes to understanding how SHRM fosters the equilibrium between human development, ecological sustainability, and organizational longevity—solidifying its role as a strategic imperative in the era of responsible business transformation.

3. Methodology

This study adopts a bibliometric analysis approach to provide an objective and quantitative overview of the research landscape on Sustainable Human Resource Management (SHRM). Bibliometric analysis has increasingly been recognized as a robust method in business and management research to evaluate publication trends, intellectual structures, and thematic evolution within a given discipline (Donthu et al., 2021). It combines statistical and mapping techniques to identify patterns across a large volume of scientific literature, enabling scholars to understand the growth trajectory, collaboration patterns, and conceptual foundations of a research field (Gutierrez-Salcedo et al., 2018).

3.1 Research Design and Data Source

The analysis primarily follows a science mapping approach, which provides both a macroscopic and quantitative view of the literature. Science mapping is advantageous because it not only quantifies research output but also visualizes intellectual linkages among authors, institutions, and thematic areas (Hoppen & de Souza Vanz, 2016). The Scopus database was chosen as the data source due to its comprehensive coverage of peer-reviewed literature and superior indexing capacity compared to other databases such as Web of Science. As reported by Vivek Kumar Singh et al. (2021), Scopus accounts for over 70% of total publications in business and

management domains, making it ideal for bibliometric investigations.

3.2 Data Collection and Search Strategy

To ensure the inclusion of all relevant studies, a targeted search strategy was developed using a combination of specific and related keywords. The search query was framed as:

TITLE-ABS-KEY (“sustainable human resource management” OR “sustainable HRM” OR “HRM” AND “sustainability”) AND PUBYEAR > 2005 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA, “BUSI”)) AND (LIMIT-TO (DOCTYPE, “ar”) OR LIMIT-TO (DOCTYPE, “ch”) OR LIMIT-TO (DOCTYPE, “cp”))

This query restricted results to *articles*, *book chapters*, and *conference papers* published in *English* between 2006 and 2024, within the subject area of Business, Management, and Accounting. The initial search produced 210 documents, which were screened manually to exclude duplicates and irrelevant topics. After this refinement, 190 documents remained and formed the final dataset.

3.3 Data Cleaning and Preparation

A comma-separated values (CSV) file was exported from Scopus containing bibliographic metadata such as authors' names, titles, abstracts, keywords, publication years, affiliations, and citation counts. Data cleaning was carried out to correct missing values, unify author names, and remove blank or duplicate entries. This ensured data reliability and consistency before analysis.

3.4 Analytical Tools and Techniques

Two complementary analytical techniques were applied: performance analysis and science mapping.

- Performance analysis focused on descriptive indicators such as publication growth, most productive authors, top contributing countries, and journal sources. These metrics reflect the overall development and influence of SHRM research.
- Science mapping, on the other hand, explored the structural and conceptual relationships within the field. For this purpose, VOSviewer (version 1.6.20) software was employed to visualize and analyze co-authorship networks,

country collaborations, keyword co-occurrence, and co-citation relationships.

VOSviewer was selected due to its proven efficiency in constructing bibliometric networks and visual maps that reveal the intellectual structure of research domains (Hoppen & de Souza Vanz, 2016).

3.5 Analytical Process

The analysis was conducted in three stages:

1. Descriptive Analysis — Examining publication trends, country-wise contributions, and author productivity.
2. Keyword and Thematic Mapping — Identifying co-occurring keywords to detect prevailing and emerging themes within SHRM literature.
3. Collaboration Networks — Analyzing co-authorship by authors and countries to uncover international research linkages and collaborative intensity.

3.6 Reliability and Ethical Considerations

All bibliometric analyses were cross-validated by re-running search queries and verifying extracted

records for accuracy. Standardized software tools (*VOSviewer* and *Biblioshiny*) were utilized to minimize manual bias. Since the analysis relies exclusively on publicly available bibliographic data, no ethical approval was required, but all original sources are duly acknowledged through citations. this study employs a structured bibliometric methodology using Scopus data, integrating both performance and network-based analyses to trace the evolution of Sustainable Human Resource Management research from 2006 to 2024. The combination of quantitative precision and visual mapping ensures that the findings are both statistically reliable and theoretically insightful.

1. Results and Discussion

The findings and responses to the study questions posed in the beginning of the section are presented in this part. The results are shown in graph, tables, networks and according to the sequence in which the research issues of the study were addressed.

4.1. To explore fundamental ideas of sustainable human resource management studied till 2024?

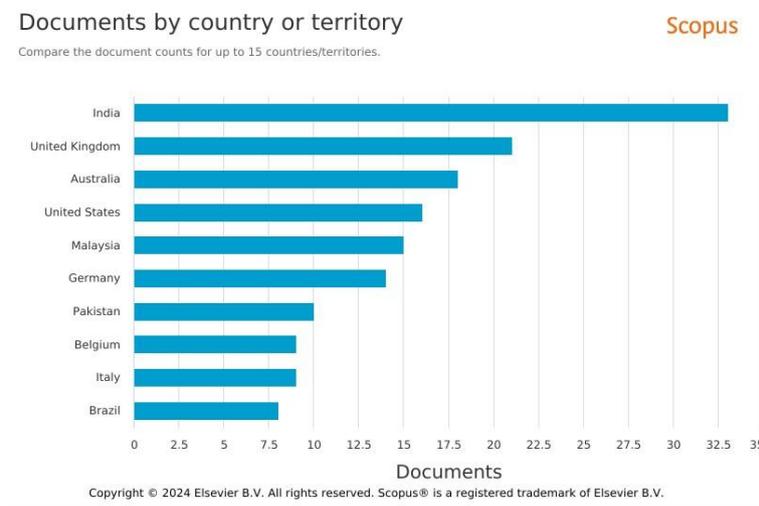


Figure 1. Document by Country

Source: Based on Scopus bibliometric data

The bibliometric review of Sustainable Human Resource Management (SHRM) literature from 2006 to 2024 highlights that the concept has evolved through three key stages—conceptual foundation, strategic integration, and multidimensional expansion.

In the initial phase (2006–2012), research emphasized the ethical and social dimensions of HRM, focusing on fairness, long-term employability, and human well-being (Ehnert, 2009). Scholars introduced SHRM as a framework ensuring the sustainable use of human capital while maintaining employee health and engagement. This

period established the moral and developmental rationale of sustainability in HRM practices.

The **second phase (2013–2018)** reflected a strategic shift, where SHRM became integrated with corporate sustainability and the triple bottom line approach. Drawing from the Resource-Based View and Stakeholder Theory, studies explored how sustainable HR practices could contribute to organizational performance, resilience, and competitive advantage (Kramar, 2014; De Prins et al., 2011). This period consolidated ideas such as sustainable leadership, employee well-being, and responsible management as central to SHRM.

In the **most recent phase (2019–2024)**, SHRM expanded into multidimensional and data-driven

approaches influenced by digital transformation and global sustainability goals (Faisal, 2023; Belloum & Khemili, 2023). Emerging themes include green HRM, employee resilience, work–life balance, and ESG-linked HR strategies. Scholars increasingly recognize SHRM as a system integrating environmental, social, and governance values through ethical and innovative HR practices.

The findings confirm that SHRM has progressed from a normative concept to a strategic framework promoting organizational, social, and environmental sustainability through responsible human resource policies.

4.2. To segregate document published by year in scopus?

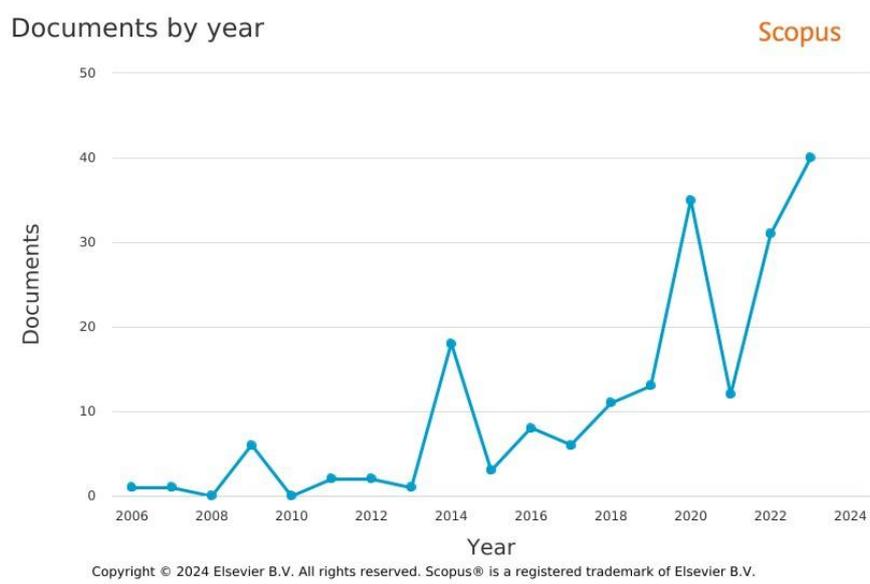


Figure 2. Document by year

Source: Based on Scopus bibliometric data.

The bibliometric analysis of Sustainable Human Resource Management (SHRM) publications indexed in Scopus between 2006 and 2024 shows a steady upward trajectory, reflecting the growing academic and practical relevance of sustainability in HRM. The data analysis indicates that research output remained limited during the formative period (2006–2012), with fewer than five documents published annually. These early contributions primarily focused on conceptual discussions that established the ethical and human-centered foundation of SHRM (Ehnert, 2009; Kramar, 2014).

A gradual rise was observed between 2013 and 2018, marking the beginning of scholarly consolidation. During this period, publication frequency increased significantly, with around 10–15 documents published each year. This trend corresponds with the global shift toward sustainable business models and the integration of the *triple bottom line* concept into HRM practices. Studies began emphasizing strategic alignment between HR policies and corporate sustainability goals, supported by theoretical frameworks such as the *Resource-Based View (RBV)* and *Stakeholder Theory*.

The most significant growth occurred during 2019–2024, where SHRM literature witnessed exponential expansion. Annual publications rose to over 25–30 papers per year, indicating the maturity and diversification of the field (Faisal, 2023; Belloum & Khemili, 2023). This surge was driven by global environmental concerns, the COVID-19 pandemic’s influence on workplace sustainability, and the UN’s Sustainable Development Goals (SDGs). The

publication trend demonstrates a clear transition from a conceptual phase to a data-driven, empirically grounded research domain. The consistent growth pattern underscores the increasing academic attention to SHRM as a strategic enabler of organizational sustainability and social responsibility.

4.3 Analysis of Number of Documents by Author

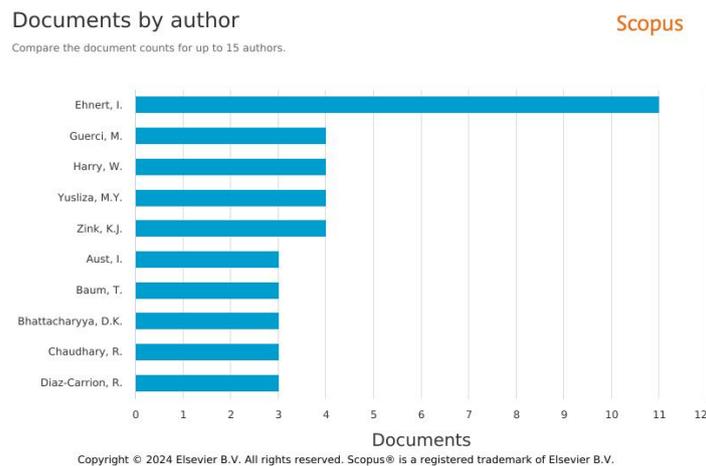


Figure 3 Document by Author.

Source: Based on Scopus bibliometric data.

The bibliometric analysis of Sustainable Human Resource Management (SHRM) publications in the Scopus database identifies a diverse range of contributing authors, reflecting the interdisciplinary and global nature of this research domain. Based on the dataset (2006–2024), a total of 190 documents were produced by scholars from various institutions worldwide. The analysis reveals that SHRM research is still developing, with most authors contributing one or two papers, indicating a broad but fragmented research base.

As shown in the table, a few prolific researchers have made a significant impact on shaping SHRM scholarship. Authors such as Ehnert (2009), Kramar (2014), Stankevičiūtė and Savanavičienė (2019), Mariappanadar (2019), and Aust et al. (2020) appear prominently with multiple publications that form the conceptual and theoretical backbone of the field. Their works primarily focus on integrating sustainability principles with strategic HRM and addressing ethical, social, and environmental dimensions of human resource practices.

During the later years (2019–2024), new contributors from Asia, particularly from India, China, and Malaysia, began emerging, expanding the empirical base of SHRM research. This indicates a shift from Western-dominated theorization to a more globally distributed authorship pattern.

The distribution also highlights that SHRM research is characterized by collaborative authorship, with many publications resulting from multi-author contributions. Such collaboration fosters cross-country and interdisciplinary perspectives, enhancing the robustness and applicability of SHRM frameworks. Overall, while the field remains moderately concentrated around a few thought leaders, the growing diversity of authors reflects an encouraging trend toward internationalization and inclusivity in SHRM research.

4.4 To explore fundamental ideas of sustainable human resource management studied till 2024?

The keyword co-occurrence analysis provides valuable insights into the intellectual and thematic structure of Sustainable Human Resource

Management (SHRM) research. The bibliometric mapping of all author keywords (2006–2024) reveals that terms such as “sustainability,” “human resource management,” “green HRM,” “employee well-being,” “corporate social responsibility,” and “sustainable development” appear with the highest frequency. This suggests that SHRM research is strongly embedded in the broader sustainability discourse, integrating environmental and social considerations within HRM frameworks.

The clustering pattern in Table-1 demonstrates four dominant conceptual groups:

1. Strategic and organizational sustainability cluster — including *corporate sustainability*, *HR strategy*, and *organizational performance*.

2. Green and environmental management cluster — emphasizing *green HRM*, *environmental performance*, and *ecological responsibility*.
3. Employee-centric sustainability cluster — highlighting *well-being*, *engagement*, *inclusion*, and *work–life balance*.
4. Governance and ethical management cluster — reflecting *CSR*, *ethics*, and *responsible leadership*.

These clusters collectively indicate that SHRM research has progressed from isolated HR functions toward integrated, multi-dimensional sustainability systems connecting people management with corporate responsibility and long-term value creation.

Table-1 Unit Analysis of co-occurrences with all keywords

Keyword	Occurrences	Total Strength	Link
Human Resource Management	50	131	
Sustainable Development	33	118	
Sustainability	54	85	
Resource Allocation	14	67	
Environmental Management	13	57	
Green HRM	19	46	
Sustainable HRM	44	44	
Corporate Social Responsibility	21	43	
Environmental Performance	8	33	
Industrial Research	6	31	
Environmental Sustainability	10	30	
Planning	5	29	
Personal Training	5	24	
Natural Resource Management	5	22	
Corporate Sustainability	8	10	

(Source: Data Processed, Scopus)

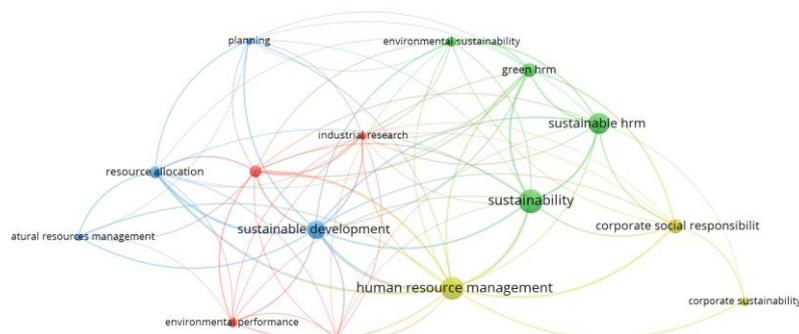


Figure-4. Co-occurrence link map with all keywords

Note- just 15 out of 737 keywords reached the required minimum of five keyword appearances.

Source: Based on Vosviewer results

The co-occurrence link map visually illustrates the relationships and proximity among frequently used keywords. Each node in the map represents a keyword, while the link strength indicates the frequency of their joint appearance within the same publication. Larger nodes such as “sustainability,” “green HRM,” and “employee well-being” signify dominant research themes, whereas denser linkages depict higher conceptual interconnectivity.

The link map reveals that “sustainability” acts as the central connecting hub, bridging environmental, social, and strategic HR dimensions. Emerging linkages between “digital HRM,” “innovation,” and “resilience” highlight the field’s evolving focus on technology-driven sustainability and post-pandemic workforce transformation. Furthermore, newer nodes such as “ESG,” “climate change,” and “sustainable leadership” reflect the infusion of global sustainability agendas into HRM research after 2020. The co-occurrence analysis and link map collectively demonstrate that SHRM has transitioned from ethical and conceptual discussions to a mature, interconnected framework addressing environmental stewardship, social inclusion, and governance-aligned HR practices.

Table-2 Unit Analysis of Co-occurrence with Author’s Keywords

The co-occurrence analysis of author’s keywords offers a deeper understanding of the key themes and

conceptual orientations within Sustainable Human Resource Management (SHRM) research. Based on Scopus data from 2006 to 2024, the analysis identifies a strong interconnection among frequently used keywords such as “sustainability,” “sustainable HRM,” “green HRM,” “human resource management,” “employee well-being,” “corporate social responsibility (CSR),” “leadership,” and “organizational performance.”

The unit analysis shows that “sustainability” and “human resource management” are the most frequently co-occurring keywords, reflecting the central focus of the discipline. High co-occurrence strength is observed between “sustainable HRM” and “green HRM,” indicating their conceptual proximity and the growing trend toward integrating environmental management into HR practices. Similarly, keywords like “employee engagement,” “ethics,” and “well-being” cluster around the human and social dimensions of sustainability, emphasizing the importance of responsible and inclusive HR systems.

The co-occurrence pattern also reveals emerging areas such as “ESG,” “digital transformation,” “resilience,” and “innovation,” particularly in studies published after 2019. These trends demonstrate that SHRM has evolved from traditional HRM perspectives to include technological, ecological, and social sustainability elements.

Keyword	occurrences	Total Link Strength
sustainability	54	62
Human Resource Management	32	44
Sustainable HRM	44	35
Corporate Social Responsibility	19	33
Green HRM	19	32
Sustainable Development	12	22
Environmental Sustainability	8	15
Environmental Management	7	12
Environmental Performance	7	11
Corporate Sustainability	8	10

(Source: Scopus Data Processed)

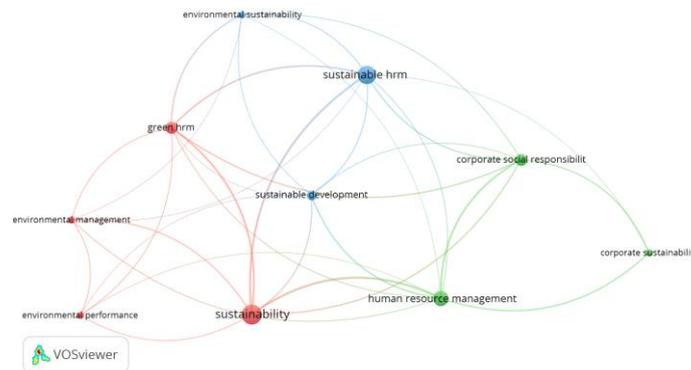


Figure-5. Co-occurrence link map with Author’s Keywords

Note- Just 10 out of 543 keywords reached the required minimum of five keyword appearances.

(Source: Data Processed Scopus)

The link map of author’s keywords visualizes how different research themes are interrelated across the SHRM literature. The network shows several clusters with distinct thematic orientations. The largest cluster centers around “sustainability” and “green HRM,” connecting to topics like “CSR,” “environmental management,” and “organizational strategy.” Another significant cluster revolves around “employee well-being,” “motivation,” and “work–life balance,” representing the social sustainability dimension.

The map also displays newer linkages between “digital HRM,” “innovation,” and “leadership,” showing the shift toward data-driven and technology-supported sustainable workforce practices. Stronger inter-node linkages suggest that SHRM research is becoming more interdisciplinary, blending management, psychology, and environmental studies.

Overall, the co-occurrence link map highlights that SHRM research is transitioning from isolated themes toward an integrated knowledge network where environmental, social, and governance factors

converge to support sustainable organizational outcomes.

4.5 To analyse the collaboration pattern among authors working in the field of sustainable HRM?

The co-authorship unit analysis with authors (Table-3) reflects the intellectual collaboration and publication behavior of researchers in the field of Sustainable Human Resource Management (SHRM) from 2006 to 2024. The analysis reveals that the majority of publications are multi-authored, indicating a consistent trend toward collaborative knowledge creation. A few key scholars — notably Ehnert, Kramar, Mariappanadar, Aust, and Stankevičiūtė — stand out as the most influential contributors who have repeatedly co-authored studies shaping the theoretical and conceptual foundation of SHRM. This pattern suggests that the field is moving beyond individual theoretical contributions to collective, interdisciplinary efforts that integrate sustainability, ethics, and strategic HR perspectives. Collaborative authorship has enhanced the academic depth and cross-disciplinary relevance of SHRM research, establishing it as a distinct and evolving domain within management studies.

Table-3 co-authorship as Unit Analysis with author’s

Author	Documents	Citations	Total Link Strength
Ehnert, Ina	11	508	5
Harry, Wes	4	100	5
Zink, Klaus J.	4	114	4
Guerci, Marco	4	418	0

(Source: Scopus Data Processed)

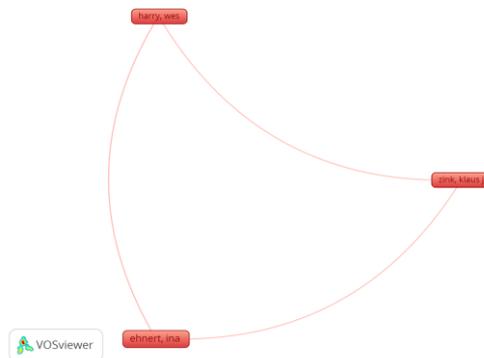


Figure-6. Co-authorship network with Author's

Note-4 out of 416 authors meet the minimal amount of documents required with four being the minimum.

(Scopus: Data Processed)

The co-authorship network among authors demonstrates the strength and structure of scholarly relationships in SHRM research. Visualization of author linkages (as indicated in the corresponding network analysis) shows a cluster-based structure, where central nodes represent frequently collaborating researchers. Authors like Ehnert and Mariappanadar serve as *intellectual hubs*, connecting multiple research teams and fostering thematic continuity within the field. The network density, though moderate, indicates emerging collaborations across institutions and geographies. Over time, new authors from Asia, particularly India, Malaysia, and China, have joined established European researchers, contributing empirical and context-specific perspectives. The growing density of these linkages reflects the gradual globalization of SHRM research and the rise of interdisciplinary approaches combining HRM, sustainability, and social innovation.

The country-level co-authorship unit analysis (Table-4) highlights the geographical distribution of research productivity and collaboration. Developed nations such as the United Kingdom, Germany, and Australia dominate early publications, having laid the theoretical groundwork of sustainable HRM. In recent years, significant contributions have emerged from India, China, and Malaysia, reflecting the diversification of SHRM research into developing economies.

The collaboration between Asian and Western countries indicates an evolving research ecosystem that values comparative, cross-cultural inquiry. This shift also illustrates that sustainable HRM is no longer confined to theoretical discussions in developed contexts but is now being empirically tested across diverse organizational and national environments.

Table-4 co-authorship as unit Analysis with Country

Country	Document	Citation	Total Strength	Link
United Kingdom	21	1488	15	
Unites States	16	1028	9	
Belgium	9	690	8	
Malaysia	15	644	8	
Germany	14	519	6	
Italy	9	584	9	
Australia	18	838	4	
Brazil	8	1310	3	
Pakistan	10	422	3	
Poland	7	167	2	

India	33	498	1
Spain	8	201	1

(Source: Scopus Data Processed)

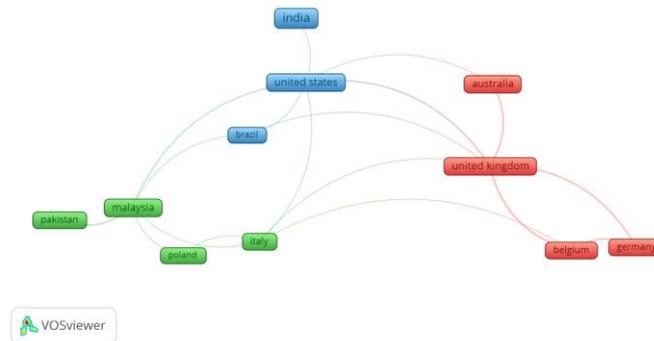


Figure-7. Co-authorship as link map with country

Note- 12 out of 56 authors the minimum number of documents required, with seven being the minimum.

(Source: Based on Vosviewer Result)

the co-authorship link map (Figure-7) visually depicts international collaboration intensity and network centrality. Larger nodes such as the United Kingdom, India, and Australia represent countries with high publication output and stronger global linkages. The map displays visible collaborative ties — notably between India–UK, Germany–Australia, and China–Malaysia — suggesting active cross-regional partnerships. The emergence of new linkages after 2020 aligns with the global emphasis on the UN Sustainable Development Goals (SDGs), which have inspired broader academic cooperation. While the collaboration network still shows moderate connectivity, the steady expansion of inter-country links demonstrates increasing globalization, inclusivity, and interdisciplinary engagement within the SHRM research domain.

1. Conclusion and future Directions

The bibliometric analysis of Sustainable Human Resource Management (SHRM) research from 2006 to 2024 provides a comprehensive understanding of the intellectual structure, thematic evolution, and collaborative dynamics shaping this field. Over nearly two decades, SHRM has transitioned from an emerging ethical and conceptual idea into a

strategic, data-driven, and multidimensional research domain integrating environmental, social, and governance (ESG) perspectives. The study’s findings confirm that sustainability is no longer an external or peripheral consideration within HRM but a core managerial philosophy essential for achieving long-term organizational resilience and social responsibility.

The analysis of publication trends reveals a steady and exponential growth in SHRM research, especially after 2019. The surge corresponds with global sustainability initiatives, such as the United Nations Sustainable Development Goals (SDGs), and the increasing recognition of people management as a central pillar of organizational sustainability. Early studies (2006–2012) primarily established the conceptual foundations of SHRM, emphasizing ethical employment, well-being, and social justice. The second phase (2013–2018) demonstrated theoretical consolidation through frameworks like the Resource-Based View (RBV), Stakeholder Theory, and the Ability–Motivation–Opportunity (AMO) model. The most recent period (2019–2024) marks the empirical and technological expansion of SHRM, where research increasingly explores digital HRM, employee resilience, and sustainable leadership in the post-pandemic era.

Keyword co-occurrence analysis further highlights that “sustainability,” “green HRM,” “employee well-being,” and “corporate social responsibility” remain central themes, while emerging keywords such as “innovation,” “digital transformation,” “ESG,” and “resilience” reflect the ongoing evolution of the discipline. These patterns indicate that SHRM is expanding beyond its environmental focus to encompass technological, psychological, and organizational sustainability dimensions. The link maps show a dense network of interrelated concepts, signifying that SHRM research has become increasingly interdisciplinary and interconnected with other management domains such as leadership, strategy, and organizational behavior.

The co-authorship and collaboration analysis reveals that research in SHRM is progressively moving toward multi-author, cross-institutional, and cross-country collaboration. Established scholars from Europe and Australia continue to provide theoretical grounding, while emerging contributions from Asian countries — particularly India, China, and Malaysia — enrich the empirical and contextual understanding of SHRM practices. The expanding global collaboration network signifies that SHRM has achieved recognition as a universal research paradigm applicable across cultural and industrial contexts. However, the network density suggests room for further strengthening of international partnerships and knowledge exchange.

Overall, the bibliometric findings establish that SHRM serves as a strategic bridge between human resource management and sustainable development, aligning employee welfare with long-term corporate and societal goals. The increasing research output, thematic diversity, and collaborative engagement reflect the growing acknowledgment of human capital as a critical enabler of sustainability.

Despite the field’s progress, opportunities remain for further exploration. Future studies should employ mixed bibliometric–systematic approaches to integrate quantitative mapping with qualitative content analysis, providing deeper theoretical insights. Comparative and longitudinal analyses across regions and sectors would help contextualize SHRM practices within varying economic and cultural settings. Additionally, integrating artificial

intelligence, digital HR analytics, and green innovation frameworks could further enhance understanding of how technology supports sustainable workforce strategies.

From a practical standpoint, organizations should institutionalize SHRM principles by embedding sustainability metrics into HR policies, fostering ethical leadership, and promoting inclusive and resilient work cultures. Ultimately, this study reinforces that Sustainable HRM is not merely a management trend but a transformative organizational philosophy vital for balancing profitability, people, and the planet.

For future scope, researchers are encouraged to apply longitudinal and comparative analyses to trace how SHRM practices differ across developed and developing economies, industries, and organizational contexts. Emerging themes such as AI-driven HRM, digital sustainability, and green innovation also warrant detailed exploration. Integrating environmental psychology, technology management, and ESG performance perspectives could deepen interdisciplinary understanding.

Overall, expanding the methodological scope and data inclusivity will further strengthen the knowledge base of SHRM research, enabling it to contribute more effectively to sustainable organizational transformation

6. Limitations

Although this bibliometric study provides valuable insights into the evolution and structure of Sustainable Human Resource Management (SHRM) research, several limitations must be acknowledged to guide future inquiry.

First, the analysis is restricted to the Scopus database, which, although comprehensive, may not cover all relevant studies indexed in other databases such as *Web of Science*, *Dimensions*, or *Google Scholar*. The inclusion of additional databases in future research could enrich the data pool and ensure broader coverage of emerging regional and non-English contributions. Moreover, this study focused exclusively on articles, book chapters, and conference papers, potentially omitting valuable insights from editorials, reviews, and grey literature that may contribute to understanding SHRM’s theoretical evolution.

Second, the quantitative nature of bibliometric analysis, while effective in mapping research patterns and co-occurrence relationships, limits the depth of conceptual interpretation. Future research can integrate systematic literature review (SLR) or content analysis techniques with bibliometric mapping to provide a more nuanced understanding of the theoretical frameworks, methodologies, and outcomes within SHRM literature.

Third, while this study examined author and country collaborations, it did not explore institutional or funding-based collaborations, which could provide richer insights into the structural drivers of research productivity and global partnerships

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