

GLOBAL TRENDS IN HUMAN RESOURCE MANAGEMENT RESEARCH: A BIBLIOMETRIC MAPPING OF THEMES, KNOWLEDGE STRUCTURES, AND EMERGING TOPICS (2020 – 2026)

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Abstract

Human Resource Management (HRM) has undergone substantial transformation in response to digitalization, artificial intelligence, changing workforce expectations, organizational transformation, and the emergence of new forms of work. This study aims to map the global development of HRM research by identifying publication patterns, dominant themes, intellectual structures, and emerging research topics during the period 2020–2026. A bibliometric analysis was conducted using Scopus as the primary database. The search identified 1,801 documents, restricted to English-language journal articles and open-access publications. The dataset is predominantly associated with Business, Management and Accounting (1,338 documents) and Social Sciences (684 documents), demonstrating the interdisciplinary character of contemporary HRM research. In terms of geographical distribution, the

United Kingdom (629), United States (476), Australia (427), China (417), and India (219) represent the most productive countries. Bibliometric analysis and visualization were employed to examine keyword co-occurrence, thematic clusters, knowledge structures, and the temporal emergence of research topics. The findings indicate that contemporary HRM research is strongly associated with themes of digital transformation, employee engagement, organizational performance, leadership, talent management, employee well-being, remote work, sustainability, and technology-enabled HRM. More recent research increasingly incorporates artificial intelligence, digital HRM, people analytics, hybrid work, employee experience, workplace well-being, and sustainable human resource management. The findings suggest that HRM scholarship is shifting from traditional administrative and personnel-oriented perspectives toward a more strategic, digital, data-driven, employee-centered, and sustainability-oriented paradigm. Future research should further investigate the intersection of AI and HRM, algorithmic decision-making, digital employee experience, workforce analytics, hybrid work, employee well-being, and ethical challenges associated with emerging technologies. This study contributes to the HRM literature by providing a comprehensive overview of the global knowledge structure and identifying research directions that may shape the future development of the field.

Keywords: *Human Resource Management; bibliometric analysis; sustainable HRM; research trends.*

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I. INTRODUCTION

Human Resource Management (HRM) has undergone substantial transformation as organizations respond to technological change, globalization, demographic shifts, evolving employee expectations, and increasing demands for organizational agility. Traditionally, HRM focused on core functions such as recruitment, selection, training, performance appraisal, compensation, and employee relations. However, contemporary HRM has increasingly developed into a strategic organizational function concerned with organizational capability, employee experience, talent development, innovation, and sustainable competitive advantage (Collings et al., 2021; Cooke et al., 2020). These developments have expanded the intellectual boundaries of HRM and generated increasingly diverse research streams across management, organizational behavior, psychology, information systems, and business studies.

The transformation of work has become particularly important in shaping contemporary HRM research. Digitalization, automation, artificial intelligence (AI), remote work, hybrid work, and platform-based employment have fundamentally changed how organizations recruit, manage, evaluate, and develop employees. The COVID-19 pandemic further accelerated these transformations by forcing organizations to adopt remote and digitally mediated work arrangements on an unprecedented scale. Research has consequently shifted toward issues such as employee well-being, digital work, virtual collaboration, work-life balance, organizational resilience, and the long-term implications of flexible working arrangements (Carnevale & Hatak, 2020; Kniffin et al., 2021). The transformation suggests that HRM can no longer be understood solely through conventional employment practices but must also address the technological and social restructuring of work.

One of the most significant emerging developments is digital human resource management (digital HRM). Digital technologies enable organizations to automate administrative HR processes, collect and analyze workforce data, facilitate employee communication, and support evidence-based decision-making. The growing use of AI and people analytics has further expanded the capacity of organizations to predict employee behavior, identify talent, personalize learning, and support recruitment and performance management. Margherita (2022) argues that digitalization has substantially reshaped HR analytics and created new opportunities for data-driven HR decision-making. Similarly, Vrontis et al. (2022)

highlight the growing importance of AI in recruitment and HRM while also emphasizing challenges involving ethics, privacy, bias, and human judgment. Thus, technological innovation has simultaneously created opportunities for HR efficiency and strategic decision-making and new concerns regarding algorithmic management and employee rights.

Another important research direction concerns employee well-being and sustainable human resource management. Contemporary organizations increasingly recognize that organizational performance cannot be separated from employee health, psychological well-being, work-life balance, and meaningful work. Sustainable HRM extends the traditional performance-oriented perspective by considering the long-term social, environmental, and human consequences of HR practices (Aust et al., 2020). This perspective has become increasingly relevant as organizations face pressure to integrate sustainability, social responsibility, employee welfare, and responsible employment practices into their strategic agendas. Consequently, contemporary HRM research increasingly investigates how organizations can simultaneously achieve organizational performance while maintaining employee well-being and supporting broader sustainability objectives.

The changing nature of careers and employment has also contributed to the expansion of HRM research toward talent management, employability, skills, and workforce adaptability. Rapid technological change creates continuous demand for reskilling and upskilling, while organizations increasingly compete for employees possessing digital, analytical, creative, and interpersonal capabilities. Talent management has therefore become closely connected with strategic human capital development and organizational competitiveness. At the same time, employees increasingly expect opportunities for learning, career development, autonomy, flexibility, and meaningful work. These changes have encouraged HR scholars to examine how organizations attract, develop, retain, and engage talent in increasingly competitive and uncertain labor markets (Collings et al., 2021).

The literature has also increasingly emphasized diversity, equity, inclusion, and employee experience. Globalization and changing workforce demographics have made workforce diversity an important strategic and social issue. Contemporary HRM research increasingly addresses gender, inclusion, organizational justice, employee voice, belongingness, and equitable career opportunities. These issues are particularly relevant because HR practices can

influence not only organizational outcomes but also employees' perceptions of fairness, identity, commitment, and psychological safety. The growing attention to these themes indicates that HRM research is increasingly incorporating broader questions concerning ethical employment, social responsibility, and inclusive organizational environments.

Despite the rapid expansion of HRM scholarship, the literature remains highly fragmented across different theoretical perspectives, research themes, technologies, and organizational contexts. Research on strategic HRM, talent management, employee engagement, digital HRM, AI, employee well-being, sustainable HRM, remote work, diversity, and organizational performance often develops within partially disconnected streams. Consequently, it is increasingly important to systematically examine how these research areas are connected and how the intellectual structure of HRM has evolved in response to changes in the world of work.

Bibliometric analysis provides an appropriate approach for addressing this challenge because it enables researchers to systematically examine large bodies of scholarly literature and identify publication patterns, influential themes, conceptual relationships, research clusters, and emerging topics (Donthu et al., 2021). Through techniques such as keyword co-occurrence analysis, citation analysis, and thematic mapping, bibliometric research can reveal both established knowledge structures and emerging research frontiers. This approach is particularly valuable for HRM because the field has expanded rapidly across multiple disciplines and technological contexts.

Therefore, this study aims to provide a comprehensive mapping of global human resource management research from 2020 to 2026 by examining its major themes, knowledge structures, and emerging topics. Using bibliometric analysis, the study investigates how HRM scholarship has evolved during a period characterized by digital transformation, pandemic-induced changes in work, AI adoption, sustainability concerns, and changing employee expectations. The study seeks to answer three broad questions: (1) How has global HRM research developed during 2020–2026? (2) What are the dominant conceptual and thematic structures within the field? and (3) What emerging topics are likely to shape the future research agenda of HRM? By addressing these questions, the study contributes to a clearer understanding of the intellectual evolution of HRM and provides a foundation for identifying future research opportunities in an increasingly digital, flexible, and human-centered world of work.

II. LITERATURE REVIEW

Human Resource Management (HRM) has evolved from an administrative function focused primarily on recruitment, compensation, training, and employee relations into a strategic discipline concerned with organizational capabilities, human capital, employee experience, and long-term organizational sustainability. Strategic HRM emphasizes the alignment between HR practices and organizational strategy, positioning employees as important sources of organizational knowledge, capabilities, and competitive advantage. Recent developments, however, indicate that the boundaries of HRM are expanding as organizations confront technological disruption, changing employment relationships, workforce diversity, and increasing expectations concerning employee well-being and sustainability (Collings et al., 2021; Cooke et al., 2020).

A particularly important development is the digital transformation of HRM. Digital technologies have changed how organizations recruit, communicate with, evaluate, and develop employees. Digital HRM increasingly incorporates human resource information systems, cloud-based HR platforms, people analytics, artificial intelligence (AI), and automated decision-making. Margherita (2022) highlights the growing importance of HR analytics in transforming workforce data into organizational insights, while Vrontis et al. (2022) demonstrate that AI, robotics, and advanced technologies are increasingly being applied to recruitment, selection, training, performance management, and other HR functions. These developments create opportunities for greater efficiency and evidence-based decision-making but simultaneously raise concerns regarding privacy, algorithmic bias, transparency, accountability, and the continuing role of human judgment in HR decisions.

The emergence of artificial intelligence and algorithmic management represents a particularly important research direction. AI can support organizations in identifying talent, predicting employee turnover, personalizing learning, and automating repetitive HR activities. However, the increasing use of algorithms also changes the relationship between employees and organizations because decisions traditionally made by human managers may increasingly be influenced by automated systems. Consequently, contemporary HRM research increasingly considers not only the efficiency of AI but also questions of fairness, explainability, employee trust, surveillance, and ethical governance. This development suggests that future HRM scholarship needs to examine technology not simply as a tool for improving HR performance but as a factor that can

fundamentally reshape managerial authority, employee autonomy, and the employment relationship.

Another major stream concerns employee well-being, work design, and changing work arrangements. The COVID-19 pandemic accelerated the adoption of remote and hybrid work and demonstrated the importance of HRM in supporting employee adjustment, organizational resilience, and psychological well-being. Carnevale and Hatak (2020) emphasize that the pandemic created significant challenges for employee adjustment and well-being, while Kniffin et al. (2021) identify remote work, organizational resilience, employee health, leadership, and changing workplace relationships as important consequences of the pandemic. As organizations increasingly adopt flexible working arrangements, HRM research has consequently expanded toward work–life balance, employee engagement, psychological safety, burnout, flexibility, and the management of geographically dispersed teams.

The literature also increasingly emphasizes talent management and human capital development. Technological change and changing labor-market requirements have increased organizational demand for employees with digital, analytical, creative, and interpersonal capabilities. Consequently, HRM research increasingly examines talent attraction, retention, employee development, career management, reskilling, and upskilling. Strategic talent management has become particularly important because organizations must simultaneously respond to skill shortages, changing employee expectations, and increasing competition for highly qualified workers. Collings et al. (2021) argue that the changing environment has created new challenges for strategic HRM and highlighted the need for organizations to develop more adaptive approaches to human capital management.

Another expanding area is sustainable human resource management (Sustainable HRM). Unlike conventional HRM approaches that often emphasize organizational performance and efficiency, Sustainable HRM considers the long-term social, environmental, and economic consequences of HR policies and practices. Aust et al. (2020) demonstrate that sustainable HRM is closely related to sustainable work systems and the long-term well-being of employees and organizations. This perspective has become increasingly relevant as organizations integrate environmental, social, and governance principles into their strategies. HRM consequently plays an important role in developing employee capabilities and behaviors that support sustainability, promoting responsible employment

practices, and balancing organizational performance with employee and societal interests.

Employee engagement and employee experience also remain important components of contemporary HRM research. Employee experience encompasses employees' perceptions and interactions across different stages of their organizational journey, including recruitment, onboarding, development, performance evaluation, and career progression. Engagement, meanwhile, is associated with employees' psychological connection to their work and organization. Digitalization has created new possibilities for personalized employee experiences through digital communication, learning platforms, employee analytics, and flexible work arrangements. At the same time, digital work may create challenges involving work intensification, constant connectivity, monitoring, and the erosion of boundaries between work and personal life. These tensions make employee experience an increasingly important research domain within contemporary HRM.

The literature has further expanded toward diversity, equity, inclusion, and ethical HRM. Globalization and demographic changes have increased the diversity of contemporary workforces, requiring organizations to address differences in gender, age, cultural background, ability, and other forms of workforce heterogeneity. HRM practices influence recruitment opportunities, career progression, compensation, organizational inclusion, and employee perceptions of justice. The increasing attention to diversity and inclusion indicates a broader transformation in HRM whereby organizational effectiveness is increasingly considered alongside questions of fairness, equality, employee voice, and social responsibility.

III. RESEARCH METHOD

This study employed a bibliometric analysis to systematically examine the development, thematic structure, intellectual patterns, and emerging topics in Human Resource Management (HRM) research during 2020–2026. Bibliometric analysis was selected because it enables researchers to quantitatively evaluate a large body of scientific literature and identify patterns that may be difficult to observe through conventional narrative reviews. The approach can be used to examine publication trends, geographical contributions, conceptual relationships, research clusters, and emerging research directions (Donthu et al., 2021).

The bibliographic data were retrieved from the Scopus database, which was selected because of its extensive coverage of peer-reviewed literature across management, business, social sciences, psychology, economics, and related disciplines. The search was conducted for publications related to “human resource management” within the period 2020–2026. The retrieved records were subsequently refined according to the predefined inclusion criteria, including publication year, subject area, document type, language, and publication status. The final dataset was used as the basis for descriptive analysis and science mapping.

The Scopus records were exported together with their available bibliographic metadata, including authors, publication year, article title, journal, author keywords, indexed keywords, affiliations, countries, citations, and references. Prior to analysis, the dataset was examined to ensure consistency and to minimize potential duplication or variations in terminology. Keywords referring to similar concepts were standardized where necessary so that differences in spelling, pluralization, or terminology would not unnecessarily fragment the resulting conceptual networks.

The analysis was conducted using VOSviewer and Bibliometrix/Biblioshiny. VOSviewer was employed to visualize the intellectual and conceptual structure of HRM research through keyword co-occurrence analysis. In this analysis, keywords that frequently occur together are interpreted as representing related research concepts. The size of each node represents the frequency of occurrence, while the distance and connecting lines between nodes indicate the strength of relationships among keywords (van Eck & Waltman, 2010). This analysis enabled the identification of major thematic clusters within the HRM literature.

The study also employed overlay visualization to examine the temporal evolution of HRM themes during 2020–2026. This visualization makes it possible to distinguish relatively established research topics from more recent areas of interest based on the average publication year associated with keywords. Particular attention was given to emerging themes related to digital HRM, artificial intelligence, people analytics, remote and hybrid work, employee well-being, talent management, sustainability, diversity and inclusion, and future skills.

In addition, density visualization was used to identify areas of high and low research concentration. High-density areas indicate themes that have received substantial scholarly attention and are strongly interconnected with other concepts, whereas lower-density areas may represent specialized or emerging research areas.

Bibliometrix/Biblioshiny was further used to complement the VOSviewer analysis by examining publication patterns, thematic development, and the broader conceptual structure of the research field (Aria & Cuccurullo, 2017).

The interpretation of the findings focused on four dimensions: (1) the descriptive development of HRM research, (2) geographical and institutional distribution, (3) the conceptual and thematic structure of the field, and (4) emerging research topics and future research frontiers. Through this approach, the study sought to identify how HRM scholarship has responded to major transformations in the world of work, particularly digitalization, artificial intelligence, flexible work arrangements, sustainability, changing employee expectations, and the growing strategic importance of human capital.

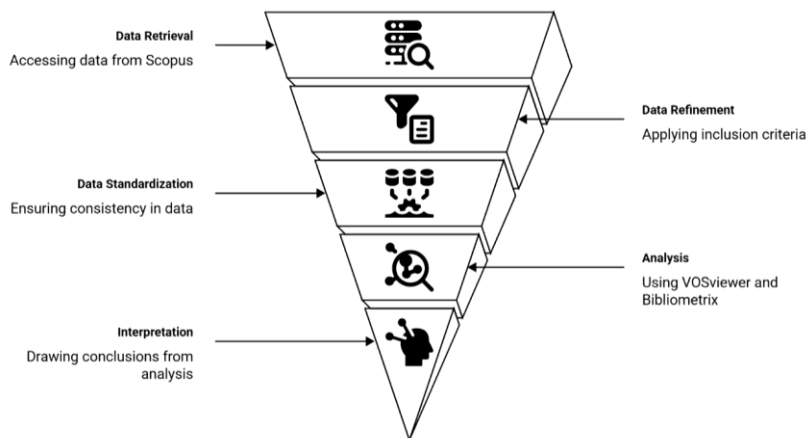


Figure 1. Stages in Bibliometric Analysis

IV. RESULTS AND DISCUSSION

RESULTS

Descriptive Overview of HRM Research

The Scopus search identified 1,801 documents related to Human Resource Management (HRM) published during the period 2020–2026. To obtain a focused and relevant dataset, the initial results were refined using several inclusion and exclusion criteria. The analysis was limited to publications within the fields of Business, Management and Accounting and Social Sciences, while the search was also designed to capture the broader interdisciplinary context of HRM, including its potential relationship with Economics, Econometrics and Finance. After applying the specified filters, the final dataset consisted of 1,801 documents.

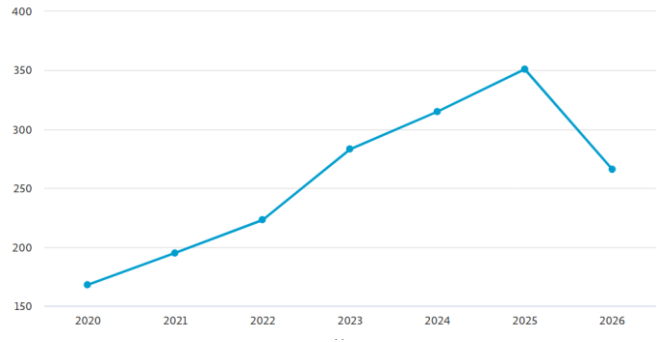


Figure 2. The publication Distribution

The subject-area distribution indicates that Business, Management and Accounting constitutes the dominant disciplinary domain, with 1,338 documents, representing approximately 74.3% of the final dataset. This finding is consistent with the fundamental position of HRM within management scholarship, where issues such as strategic human resource management, talent management, recruitment, employee performance, organizational behavior, and workforce development are extensively studied. Social Sciences represents the second major domain, with 684 documents (38.0%). The overlap between these categories is expected because individual publications may be indexed under more than one Scopus subject area. The strong presence of Social Sciences demonstrates that contemporary HRM research is not exclusively managerial but also addresses broader social and behavioral dimensions of employment, including employee well-being, workplace relationships, diversity, inclusion, work behavior, and changing employment arrangements.

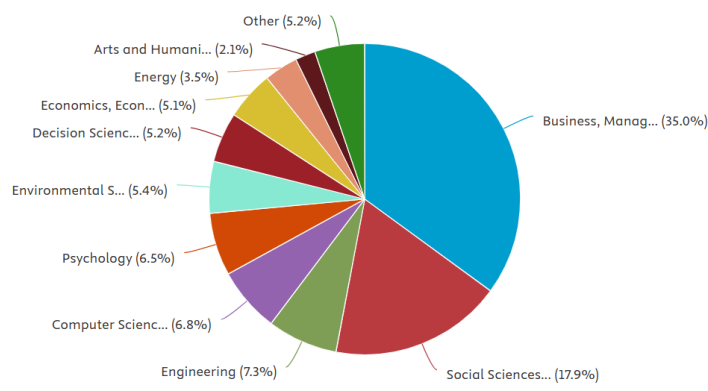


Figure 3. Subject Areas of the Publication

The dataset is composed entirely of journal articles, totaling 1,801 documents (100%). This provides a relatively consistent basis for bibliometric analysis because other document types, such as conference papers, book chapters, books, reviews, and editorials, were excluded. Furthermore, all publications are written in English (1,801; 100%), ensuring linguistic consistency in the analysis of titles, abstracts, and keywords. The exclusive focus on English-language publications also reflects the dominant role of English as the principal language of international academic communication in HRM and management research.

In terms of publication source, all 1,801 documents (100%) were published in journals and classified as open access. This characteristic strengthens the accessibility and reproducibility of the literature base analyzed in this study. The final dataset therefore represents a clearly defined collection of English-language, open-access journal articles that have reached the final publication stage and are primarily situated within business, management, and social science research.

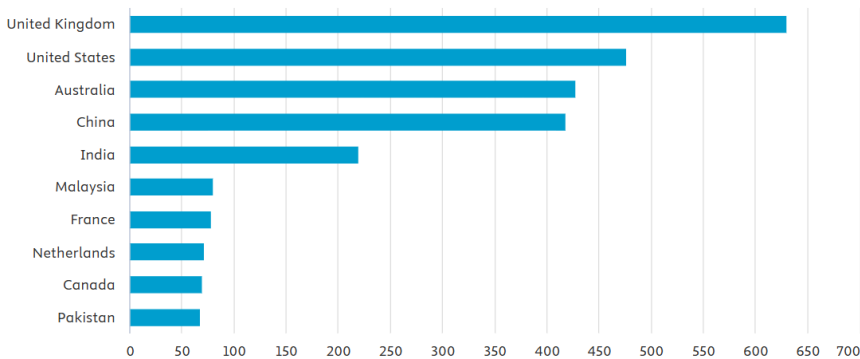


Figure 4. Geographical Distribution

The geographical distribution reveals a strong concentration of HRM research in several major research-producing countries. The United Kingdom ranks first with 629 documents, followed by the United States with 476 documents, Australia with 427, China with 417, and India with 219. These five countries constitute the leading contributors to the HRM literature within the selected dataset. The United Kingdom's leading position is particularly notable, suggesting a strong research concentration within British universities and management schools. The country's contribution may also reflect the long-standing strength of European scholarship in strategic HRM, employment relations, organizational studies, and workplace research.

The United States, with 476 documents, represents another major center of HRM scholarship. Its substantial contribution reflects the country's longstanding influence on management research and the development of major HRM concepts, including strategic human resource management, organizational behavior, employee engagement, talent management, and human capital theory. The strong presence of the United States alongside the United Kingdom suggests that the intellectual development of HRM remains strongly

influenced by established Anglo-American research communities. Australia contributes 427 documents, placing it third among the identified countries. This relatively high contribution highlights the importance of the Asia-Pacific region in contemporary HRM research. Australian scholarship has increasingly addressed topics such as employee well-being, workplace flexibility, organizational sustainability, leadership, employee relations, and changing employment practices. Meanwhile, China, with 417 documents, demonstrates the growing importance of Asian research communities in the development of HRM scholarship. China's strong representation is particularly relevant given the country's rapid economic transformation, digitalization, technological development, and changing workforce characteristics.

India, with 219 documents, completes the five leading contributors. Its substantial contribution indicates the growing importance of HRM research within emerging economies. The Indian context provides an important setting for examining talent management, digital transformation, employee engagement, organizational change, and workforce development in rapidly expanding labor markets. The presence of China and India among the leading contributors therefore suggests that HRM scholarship is gradually becoming more geographically diverse, although publication activity remains concentrated in a relatively small number of major research-producing countries.

The composition of the dataset also provides an appropriate foundation for subsequent bibliometric mapping. With 1,801 English-language, open-access journal articles, the analysis can systematically examine the conceptual structure and thematic evolution of HRM research. The subsequent keyword co-occurrence, temporal overlay, and density analyses are therefore expected to reveal how the field has responded to major transformations in the world of work, particularly digital HRM, artificial intelligence, people analytics, remote and hybrid work, employee well-being, talent management, sustainability, diversity and inclusion, and future workforce skills.

Keyword Co-occurrence and Conceptual Structure

The keyword co-occurrence analysis using VOSviewer reveals that Human Resource Management (HRM) research during 2020–2026 is characterized by a highly interconnected and multidisciplinary knowledge structure. The visualization identifies five major thematic clusters, indicating that HRM has evolved beyond traditional personnel management into a broader field encompassing strategic management, sustainability, digital transformation, employee well-being, occupational safety, and artificial intelligence. The large node size of “human resource management” indicates its role as the central concept linking diverse streams of research.

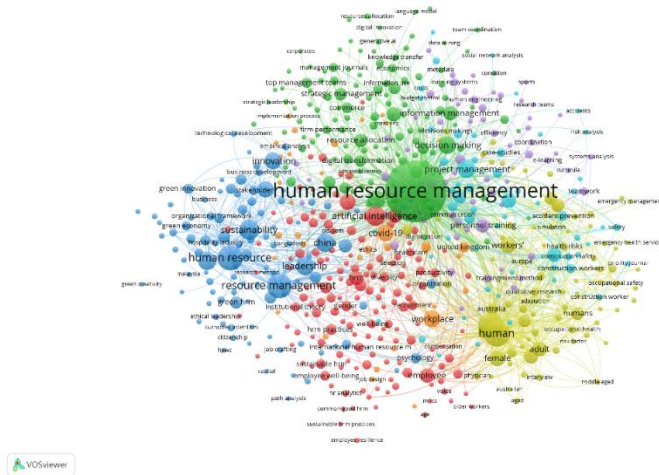


Figure 5. Visualization of Keyword Co-occurrence

Cluster 1: Strategic HRM, Information Management, and Decision-Making (Green Cluster)

The largest cluster (green) is centered on human resource management, closely connected with keywords such as project management, information management, decision making, strategic management, top management teams, resource allocation, knowledge transfer, digital innovation, economics, and project management. This cluster represents the strategic and managerial dimension of HRM, emphasizing how organizations manage human capital to enhance performance, competitiveness, and organizational effectiveness. The presence of terms such as digital transformation, information use, and language model suggests that HRM research is increasingly incorporating digital technologies and artificial intelligence into managerial processes. Meanwhile, the emergence of generative AI, data mining, and social network analysis indicates a growing interest in data-driven HR practices and people analytics. This cluster demonstrates a shift from administrative HR functions toward strategic and technology-enabled HRM.

Cluster 2: Sustainability, Leadership, and Resource Management (Blue Cluster)

The blue cluster is dominated by keywords such as human resource, sustainability, leadership, resource management, innovation, stakeholder, green economy, green HRM, and organizational framework. This thematic group reflects the increasing integration of sustainability principles into HRM research. Topics such as green innovation, ethical leadership, citizenship behavior, and sustainable HRM practices indicate that scholars are paying greater attention to how HR policies contribute to environmental sustainability and social responsibility. The linkage between leadership and sustainability also suggests that HRM is increasingly viewed as an important mechanism for fostering organizational resilience, innovation, and sustainable business practices. This cluster highlights the emergence of Green Human Resource Management (GHRM) as a growing research area,

particularly in response to global sustainability challenges and the increasing adoption of Environmental, Social, and Governance (ESG) principles.

Cluster 3: Employees, Workplace, Well-Being, and AI (Red Cluster)

The red cluster focuses on employee-related themes, including employees, workplace, well-being, recruitment, diversity, gender, compensation, productivity, employee resilience, job design, and employee voice. This cluster represents the human and behavioral dimension of HRM. An important feature of this cluster is the strong connection between HRM and artificial intelligence, indicating growing scholarly attention to AI applications in recruitment, talent management, performance evaluation, and employee analytics. The appearance of terms such as HR analytics, sustainable HRM, and employee well-being reflects a transition toward evidence-based and employee-centered HR practices. The inclusion of COVID-19 further indicates that the pandemic significantly influenced HRM research, particularly in areas related to remote work, workforce resilience, health management, and organizational adaptation.

Cluster 4: Occupational Health, Safety, and Workforce Risks (Yellow Cluster)

The yellow cluster contains keywords such as human, humans, occupational health, occupational safety, health risks, construction workers, accident prevention, and workplace safety. This cluster highlights the strong interdisciplinary relationship between HRM and occupational health research. Research within this cluster focuses on worker safety, risk management, employee health, and workplace conditions, particularly in labor-intensive sectors such as construction and healthcare. The presence of terms such as qualitative research, adaptation, and training suggests that scholars are increasingly interested in how organizations develop safer and healthier work environments. This cluster demonstrates that HRM is not only concerned with organizational performance but also with employee welfare and sustainable work systems.

Cluster 5: Learning, Coordination, and Educational Systems (Purple Cluster)

The purple cluster includes keywords such as learning systems, teamwork, coordination, case studies, simulation, e-learning, systems analysis, and research teams. This cluster represents the learning and organizational development dimension of HRM. The emergence of e-learning, simulation, and team coordination indicates growing attention to employee development, knowledge management, and digital learning systems. This trend is particularly relevant in the post-pandemic context, where organizations increasingly rely on digital training and continuous learning strategies.

The co-occurrence network demonstrates that HRM research during 2020–2026 has become increasingly strategic, digital, sustainable, and employee-centered. Traditional topics such as recruitment, training, and performance management remain important, but they are now strongly connected with newer themes including: Artificial Intelligence and HR Analytics, Digital Transformation, Sustainable and Green HRM, Employee Well-being and Resilience,

Occupational Health and Safety, Knowledge Management, Data-Driven Decision Making. The central position of human resource management within the network indicates that HRM serves as an integrative field connecting management, psychology, technology, sustainability, and public health. The visualization also suggests that future HRM research will increasingly focus on the interaction between human capabilities and digital technologies, particularly in the context of AI, people analytics, remote work, sustainability, and future workforce development.

Temporal Evolution of HRM Research

The overlay visualization presents the temporal evolution of keywords in Human Resource Management (HRM) research during 2020–2026. In the VOSviewer visualization, the color spectrum ranges from blue/purple, representing relatively older research topics, to green and yellow, representing more recent themes. The distribution of colors indicates that HRM research has experienced a gradual shift from conventional concerns related to human resources, leadership, workplace, and organizational management toward technology-enabled, sustainability-oriented, and data-driven approaches.

The central keyword “human resource management” remains the dominant theme throughout the period, indicating its persistent role as the conceptual foundation of the research field. Closely connected themes such as human resource, resource management, leadership, project management, decision making, information management, and workplace occupy central positions in the network. Their relatively mixed colors suggest that these themes have been continuously investigated across the period rather than emerging only in a particular year.

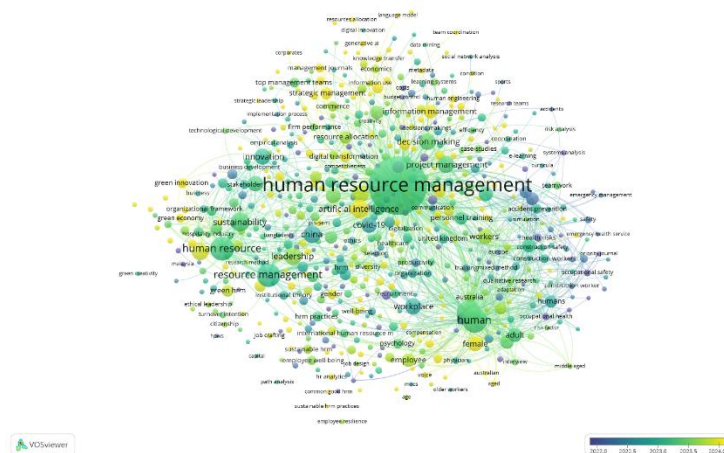


Figure 6. Overlay Visualization

One important temporal development is the increasing prominence of digital transformation and artificial intelligence. Keywords such as artificial intelligence,

generative AI, digital transformation, information management, data mining, metadata, language model, and digital innovation appear predominantly in the more recent color spectrum. This pattern suggests that technological transformation has become an increasingly important research frontier in HRM. In particular, the appearance of generative AI and language model toward the recent end of the temporal scale indicates the emergence of research examining how advanced AI technologies may influence recruitment, employee management, decision-making, knowledge transfer, training, and other HR functions.

Another notable development concerns the growing importance of sustainable HRM and green HRM. Keywords including sustainability, green HRM, green innovation, green economy, sustainable HRM, and sustainable HRM practices are distributed across the network, with several appearing in relatively recent colors. This indicates that sustainability has progressively become integrated into HRM scholarship. Rather than treating environmental sustainability exclusively as an operational or environmental management issue, recent HRM research increasingly examines how employee practices, leadership, organizational culture, and human-resource policies can contribute to sustainable organizational outcomes.

The overlay also demonstrates continuing attention to employee-centered themes, including employee well-being, workplace, resilience, job design, recruitment, compensation, diversity, gender, and occupational health. These topics appear across different stages of the temporal spectrum, suggesting that employee-related concerns constitute an enduring component of HRM research. However, their connections with newer concepts such as digitalization, AI, sustainability, and analytics indicate a changing research agenda in which employee outcomes are increasingly examined within technologically and socially transformed workplaces.

The emergence of HR analytics is particularly significant. Its position near themes such as employee well-being, sustainable HRM, data mining, decision making, and artificial intelligence suggests a movement toward evidence-based and data-driven HRM. This development reflects a broader transformation in which HR departments increasingly use organizational data and analytical technologies to support workforce planning, recruitment, performance management, and strategic decision-making.

The visualization also shows the continuing relevance of COVID-19 as a transitional theme. Its position near digitalization, workplace, employee management, and health-related concepts illustrates how the pandemic became an important catalyst connecting traditional HRM concerns with new questions surrounding digital work, employee well-being, organizational resilience, and workplace transformation. Thus, COVID-19 appears not merely as a temporary research topic but as a contextual factor that accelerated several transformations within the HRM field.

At the more recent end of the visualization, several themes appear to represent potential research frontiers, particularly generative AI, artificial intelligence, digital transformation, HR analytics, data mining, knowledge transfer, employee resilience, sustainable HRM, and green HRM. Their relatively recent positioning suggests that the HRM research agenda is increasingly moving toward the intersection of technology, sustainability, analytics, and human-centered management.

The temporal map indicates a clear transformation in HRM scholarship. Earlier research was strongly associated with human resources, leadership, workplace, organizational management, and conventional HR practices, whereas more recent research increasingly incorporates artificial intelligence, digital transformation, analytics, sustainability, green HRM, employee well-being, and resilience. This evolution suggests that contemporary HRM research is responding to fundamental changes in the nature of work and organizational environments, positioning HRM not only as a managerial function but also as a strategic mechanism for navigating digital transformation, sustainable development, and the future of work.

Research Density and Thematic Concentration

The density visualization illustrates the concentration and intensity of research themes within the human resource management (HRM) literature during 2020–2026. In VOSviewer's density map, areas with yellow to green coloration indicate higher concentrations of frequently occurring keywords, whereas blue and purple areas represent relatively lower-density or more peripheral research topics. The visualization clearly places "human resource management" at the highest-density position, confirming its role as the central intellectual theme of the research field. Closely surrounding it are human resource, resource management, artificial intelligence, leadership, sustainability, project management, information management, decision making, workplace, and human, indicating that contemporary HRM research has expanded beyond conventional personnel administration toward strategic, technological, organizational, and employee-centered dimensions.

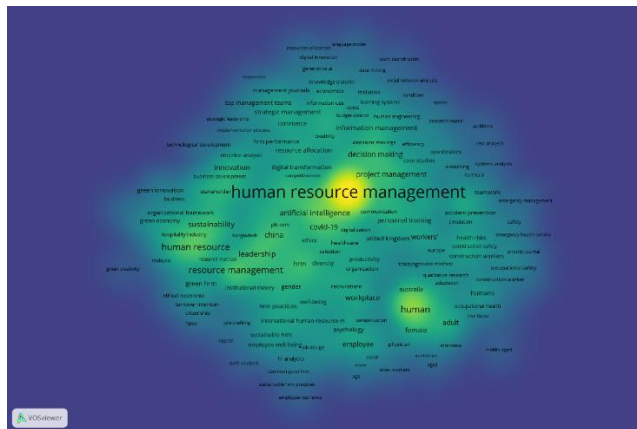


Figure 7. Density Visualization

A particularly dense area appears around artificial intelligence, digitalization, digital transformation, information management, decision making, and project management. This pattern indicates the increasing integration of digital technologies into HRM research. The proximity of artificial intelligence to the central HRM theme suggests that AI is no longer treated merely as a technological issue but increasingly as a component of organizational and human resource strategy. Emerging technologies such as generative AI, language models, data mining, social network analysis, and digital innovation also appear in the upper region of the map. Their comparatively peripheral but increasingly visible positions suggest that technology-oriented HRM research is developing rapidly and may constitute an important research frontier.

Another prominent density is associated with sustainability, green HRM, green innovation, green economy, and organizational sustainability. This cluster demonstrates that HRM scholarship is increasingly connected with environmental and sustainability agendas. The appearance of green HRM, sustainable HRM, employee well-being, employee resilience, and ethical leadership indicates a shift from viewing employees primarily as organizational resources toward understanding HRM as a mechanism for creating sustainable organizations and supporting employee welfare. This development is consistent with the broader movement toward integrating sustainability principles into organizational strategy and people management.

The visualization also reveals a strong employee-centered dimension represented by keywords such as workplace, employee, well-being, psychology, diversity, gender, recruitment, productivity, job design, turnover intention, and HRM practices. This concentration suggests that employee experience remains a fundamental component of HRM research. At the same time, the emergence of well-being, resilience, diversity, gender, and psychological dimensions reflects a broader conceptualization of employee management that incorporates social, emotional, and behavioral factors rather than focusing exclusively on productivity and performance.

An additional research concentration can be observed around human, humans, adult, female, middle aged, older workers, occupational health, health risks, safety, construction workers, and healthcare. Compared with the central HRM themes, these keywords are more closely associated with occupational health and workforce demographic research. Their presence indicates that HRM scholarship increasingly intersects with public health, occupational psychology, workplace safety, and workforce aging. The appearance of older workers, aged, employee resilience, and occupational health is particularly important because demographic change and workforce aging are creating new challenges for recruitment, retention, job design, and employee well-being.

The density map demonstrates that HRM research during 2020–2026 is multidimensional and increasingly interdisciplinary. The highest-density core remains focused on human resource management and resource management, but this core is surrounded by interconnected domains involving AI and digital transformation, leadership

and decision making, sustainability and green HRM, employee well-being, occupational health, and organizational performance. The peripheral appearance of terms such as generative AI, language models, data mining, digital innovation, employee resilience, and sustainable HRM is particularly noteworthy because it suggests emerging directions that may become more central in future HRM scholarship. Thus, the density visualization portrays HRM as a field undergoing substantial transformation from a traditional personnel-management orientation toward a strategic, technology-enabled, sustainable, and employee-centered discipline.

DISCUSSION

The bibliometric findings reveal that human resource management (HRM) research during 2020–2026 has evolved into a highly interconnected and multidisciplinary field. The central position of human resource management and its strong connections with leadership, sustainability, artificial intelligence (AI), project management, decision making, workplace, and employees indicate that contemporary HRM has expanded beyond traditional functions toward technological transformation, organizational sustainability, employee well-being, and strategic management. This reflects the broader transition of HRM from an administrative function toward a strategic organizational capability.

A major development is the increasing prominence of AI, generative AI, digital transformation, and information management. The proximity of artificial intelligence, generative AI, language model, data mining, and digital transformation to the central HRM cluster indicates that technology has become an increasingly important component of HRM scholarship. Gong et al. (2025) similarly identify AI-HRM as a rapidly developing research domain in which AI is increasingly connected with workplace transformation, collaboration, innovation, and new organizational configurations. The emergence of generative AI and language models suggests a shift from conventional digital HR systems toward human–AI collaboration in recruitment, learning, knowledge management, employee services, performance management, and decision support. However, AI integration also introduces important ethical and governance challenges. The bibliometric connections between AI, decision making, diversity, ethics, and organizational governance indicate growing concern about algorithmic bias, transparency, data quality, privacy, and accountability. Recent systematic evidence shows that AI can simultaneously improve standardization and objectivity while reproducing existing inequalities through biased data and algorithms (Naoum et al., 2026). Therefore, responsible AI-HRM represents an important research frontier, particularly regarding explainability, human oversight, participatory design, and ethical governance.

A second major trajectory concerns HR analytics and data-driven decision making. The presence of HR analytics, data mining, information management, decision making, resource allocation, and efficiency indicates that HRM is becoming increasingly data intensive. Margherita (2023) emphasizes the strategic potential of HR analytics for managing complex HR processes and supporting organizational decision making, while recent reviews further show that analytics adoption and institutionalization remain

important research challenges. Thus, future studies may increasingly examine predictive workforce analytics, turnover prediction, talent analytics, workforce planning, and AI-supported HR decision systems. At the same time, the growing use of employee data raises concerns regarding privacy, surveillance, data ownership, and employee autonomy, suggesting that future research should consider both the analytical value and social consequences of HR analytics.

Sustainability represents another prominent research trajectory. The emergence of sustainability, green HRM, green innovation, green economy, and sustainable HRM demonstrates that environmental and social sustainability have become increasingly embedded in HRM research. This development positions employees as important actors in achieving organizational sustainability through recruitment, training, leadership, performance management, engagement, and organizational culture. Qamar et al. (2024), based on a systematic review of 134 studies, found that sustainable HRM can predict employee well-being, while also emphasizing that empirical research in this area remains relatively limited and requires stronger theoretical and methodological development.

The increasing prominence of employee well-being, psychology, resilience, job design, turnover intention, and workplace further indicates a shift toward human-centered HRM. The COVID-19 pandemic intensified scholarly attention to mental health, work–life boundaries, remote work, resilience, and organizational support. Bhoir and Sinha (2024) similarly highlight the growing importance of employee well-being in HRM while noting that dedicated well-being-oriented HR practices remain under-researched. Accordingly, well-being may increasingly be conceptualized not only as an outcome of HR practices but also as a mechanism connecting HR practices with engagement, productivity, creativity, retention, resilience, and organizational performance.

Leadership, decision making, resource management, and project management remain central components of the HRM knowledge structure. Their increasing connections with AI, digital transformation, sustainability, and employee outcomes suggest that conventional managerial concepts are being reinterpreted within digital and knowledge-intensive organizations. Similarly, the emergence of diversity, gender, and demographic-related keywords reflects increasing attention to workforce heterogeneity and inclusion. The intersection of AI and diversity is particularly important because algorithmic HR systems may either mitigate or reproduce inequalities, reinforcing the need for transparency, human oversight, and ethical governance (Naoum et al., 2026).

The bibliometric map also shows stronger connections between HRM and occupational health and safety through keywords such as occupational health, occupational safety, health risks, employee resilience, and safety. This suggests that contemporary HRM increasingly encompasses the creation of healthy, safe, and sustainable work systems. Such integration is particularly relevant in high-risk sectors and work environments characterized by technological disruption, changing work arrangements, and intensified workloads. Taken together, the findings indicate four interconnected trajectories in

contemporary HRM research. First, technological transformation is represented by AI, generative AI, digital transformation, HR analytics, and data mining. Second, strategic transformation is reflected in leadership, decision making, resource allocation, project management, and organizational performance. Third, sustainability transformation is represented by sustainable HRM, green HRM, and green innovation. Fourth, human-centered transformation is reflected in employee well-being, resilience, diversity, psychology, occupational health, and workplace outcomes. These trajectories increasingly intersect rather than develop as isolated research streams.

The intersection of these four trajectories provides a strong basis for future research. Studies could examine how AI-enabled HR analytics can improve organizational performance while protecting employee autonomy and well-being; how sustainable HRM can strengthen employee resilience during digital transformation; and how AI-based recruitment can improve efficiency without reinforcing demographic inequalities. Such research would move HRM scholarship beyond isolated technology-adoption studies toward integrated explanations of how organizations manage people in increasingly digital, uncertain, and sustainability-oriented environments.

Based on the integration of the bibliometric findings and recent literature, several research frontiers can be prioritized:

Research frontier	Key research questions
AI & Generative AI in HRM	How does GenAI reshape recruitment, training, performance management, and employee experience?
Ethical AI-HRM	How can organizations ensure fairness, transparency, explainability, and human oversight?
HR Analytics	How can predictive analytics improve workforce planning without increasing employee surveillance?
Digital HRM	How does digital transformation reshape HR roles, competencies, and organizational structures?
Sustainable HRM	How can HR practices simultaneously support organizational sustainability and employee well-being?
Employee Well-being & Resilience	How can HRM strengthen psychological well-being and resilience in digitally transformed workplaces?
Diversity & Inclusion	Can AI-supported HR processes reduce or reproduce gender and demographic inequalities?

Human–AI Collaboration	Which HR decisions should remain human-led and which can be effectively augmented by AI?
Future of Work	What HR competencies and practices are required for AI-driven and hybrid workplaces?
Occupational Health	How can HRM integrate physical, psychological, and technological workplace risks?

V. CONCLUSION AND RECOMMENDATION

This bibliometric study mapped the global development of Human Resource Management (HRM) research during 2020–2026 based on 1,801 English-language journal articles indexed in Scopus. The findings demonstrate that HRM has developed into a highly interconnected and multidisciplinary research domain, with strong contributions from Business, Management and Accounting, Social Sciences, and Economics, Econometrics and Finance. The geographical distribution indicates substantial research activity from the United Kingdom, United States, Australia, China, and India, suggesting that HRM scholarship is increasingly international while remaining concentrated in major research-producing countries.

The keyword analysis further reveals that human resource management, human resource, resource management, leadership, artificial intelligence, sustainability, innovation, workplace, employee well-being, and digital transformation constitute important components of the contemporary HRM knowledge structure. The thematic structure indicates a transition from conventional HRM concerns toward a more technology-oriented, sustainable, and employee-centered paradigm. In particular, the strong connection between HRM and artificial intelligence, digital transformation, information management, and decision making reflects the growing influence of emerging technologies on recruitment, workforce planning, performance management, learning, and organizational decision processes.

The overlay visualization also suggests several emerging research frontiers, particularly generative AI, language models, data mining, digital innovation, HR analytics, employee resilience, sustainable HRM, and technology-enabled decision making. These themes indicate that future HRM research is likely

to focus not only on managing employees but also on how organizations can strategically integrate intelligent technologies while maintaining ethical standards, employee well-being, sustainability, and organizational resilience. At the same time, themes such as gender, diversity, occupational health, older workers, and employee well-being demonstrate that the human dimension remains central to HRM scholarship.

The findings suggest that contemporary HRM is moving toward an integrated digital, sustainable, and human-centered paradigm. Future research should therefore examine how artificial intelligence and HR analytics can be implemented responsibly, how digital transformation reshapes employee experiences and organizational structures, and how sustainable HRM practices can contribute to employee well-being and long-term organizational performance. Greater attention to underrepresented countries and contexts would also strengthen the geographical diversity of the field and provide a more comprehensive understanding of how HRM transformation occurs across different institutional, cultural, and economic environments.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article.

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