



Mapping the Future of Human Resource Development: A Bibliometric Analysis with VOSviewer

Muhammad Rafi Dhia¹, Muh. Akbar¹

¹*Ekonomi & Bisnis, Universitas Muhammadiyah Jakarta*

*Corresponding Author: Muhammad Rafi Dhia

E-mail: rafidhia23@gmail.com

Article Info

Article History:

Received: 8 April 2024

Revised: 7 May 2024

Accepted: 9 June 2024

Keywords:

Human Resource

Development

Bibliometric Analysis

VOSviewer

Performance

Management

Abstract

The present study intends to map the developments and future trends in Human Resource Development (HRD) using a bibliometric analysis. The publication data of highly ranked academic journals on the topic of HRD were examined with the help of VOSviewer software to reveal the major research trends, author and institutional partnerships, and the most commonly used keywords. The analysis has uncovered a number of prevailing clusters such as transformational leadership, human resource management, talent management, human resource development and performance management. The cluster of transformational leadership became very salient, as it reflects its close support with job satisfaction, employee performance, motivation, and organizational outcomes. The human resource management cluster focuses on financial performance, lean processes, and efficiency in the public sector. The role of talent management was emphasized in the hospitality sector and the rise in using evidence-based methods. The cluster human resource development deals with high performance, coaching practices and organizational citizenship behavior whilst performance management deals with employee performance, job crafting and evaluation systems. Moreover, the research discerns a growing tendency towards global collaboration, which highlights the role of global outlook in HRD research. These results give a broad perspective of the changing HRD landscape and give an orientation to the future research directions.

INTRODUCTION

Human Resource Development (HRD) has emerged as a critical field of study and practice, essential for fostering organizational growth and employee development. With the rapid pace of globalization and technological advancements, the landscape of HRD is continuously evolving. Organizations are increasingly recognizing the importance of investing in their human capital to maintain a competitive advantage and achieve sustainable success. This dynamic environment necessitates a comprehensive understanding of the trends, key areas of focus, and collaborative networks within HRD research. The evolution of HRD as a discipline can be traced

back to the early 20th century, with significant contributions from scholars and practitioners who have shaped its theoretical and practical foundations (Garavan et al., 2016). Over the decades, the focus of HRD has expanded from basic training and development to encompass a broader range of activities, including performance management, organizational development, and transformational leadership. This expansion reflects the growing complexity and importance of HRD in addressing contemporary organizational challenges (Swanson, 2022; Snell & Morris, 2021; Rehan, 2024).

Human Resource Management (HRM) involves various processes and activities essential for managing employees within an organization. According to Gary Dessler (2023), HRM encompasses acquiring, training, evaluating, and compensating employees while focusing on their work relationships, health, safety, and fairness. Schermerhorn (2020) defines HRM as the process of attracting, developing, and maintaining quality employees. In their book "Management," Kinicki and Williams (2020) describe HRM as planning, attracting, developing, and retaining employees. Kasmir (2019) emphasizes managing people through planning, recruitment, selection, training, development, compensation, career management, and ensuring safety and health, as well as maintaining industrial relations until employment termination to achieve company goals and enhance stakeholder welfare. Edy Sutrisno (2019) highlights HRM as the activity of planning, acquiring, developing, maintaining, and utilizing human resources to achieve both individual and organizational goals. Finally, Hasibuan (2020) characterizes HRM as the science and art of managing worker relationships and roles to effectively and efficiently meet the objectives of the company, employees, and society.

Gary Dessler (2023) defines Human Resource Development (HRD) as a set of activities aimed at improving employee performance in both their current roles and future positions through structured learning opportunities. Noe et al. (2020) describe HRD as a key organizational function that focuses on advancing employees' knowledge, skills, and abilities through various forms of training, development, and organizational learning. Swanson (2022) views HRD as a process designed to develop and harness human expertise through organizational development and personnel training to enhance overall performance.

Bibliometric analysis is a powerful tool for examining the structure and development of academic literature. It enables researchers to identify patterns, trends, and relationships within a specific field of study. By utilizing bibliometric techniques, insights can be gained into the most influential publications, prolific authors, prominent institutions, and prevalent research themes (Donthu et al., 2021; Donthu et al., 2021; Kut & Pietrucha-Urbanik, 2023). Such analyses provide valuable information for guiding future research directions and informing policy and practice in the field. VOSviewer is a widely used software application for constructing and visualizing bibliometric networks. It facilitates the creation of maps based on network data, enabling the visualization of relationships between various elements such as authors, journals, and keywords. This study leverages VOSviewer to conduct a bibliometric analysis of HRD literature, aiming to uncover the current state and future directions of the field.

The main goals of this research are to (1) identify key trends in Human Resource Development (HRD) research, (2) explore collaboration patterns among authors and institutions, and (3) pinpoint the most frequently used keywords in HRD literature. By fulfilling these objectives, the study aims to offer a thorough overview of the HRD research landscape, providing valuable insights for both researchers and practitioners (Boon et al., 2018; Park et al., 2024; Yoon et al., 2024). A significant contribution of this study is its comprehensive and systematic approach to mapping HRD research using advanced bibliometric tools. Although previous research has

provided important insights into specific HRD areas, such as training effectiveness and leadership development, there has been a lack of comprehensive analyses that integrate the various dimensions of the field (Van Eck & Waltman, 2020). This study fills this gap by offering a broad yet detailed examination of HRD literature, identifying both established research areas and emerging trends that could shape the future of the field.

Moreover, the novelty of this research is underscored by its focus on the evolving nature of HRD in response to global and technological changes. By analyzing recent publications, the study captures the latest developments and innovations in HRD, providing a forward-looking perspective that can inform both academic inquiry and practical application. The integration of international collaboration patterns further enhances the study's relevance, highlighting the importance of cross-border knowledge exchange in advancing HRD theory and practice. This introduction sets the stage for a detailed exploration of HRD literature through bibliometric analysis. The subsequent sections will elaborate on the methodology, present the findings, and discuss the implications of the results for the future of HRD research.

Transformational leadership involves motivating followers towards achieving set goals by clearly defining roles and task expectations (Jufrizen & Lubis, 2020; Ha & Moon, 2023; Arifin et al., 2024). Bashori (2019) describes transformational leadership as a style that inspires followers to transcend their personal interests, significantly impacting them by providing individualized consideration, intellectual stimulation, and charisma. Transformational leaders focus on the concerns and developmental needs of their followers, helping them view problems from new perspectives and inspiring them to exert extra effort towards achieving group objectives. Yukl (2016) defines transformational leadership as the leader's ability to influence subordinates to enhance their awareness of the importance of work outcomes, prioritize group interests, and elevate their needs to achieve a higher quality of life. Transformational leaders empower followers by delegating authority, developing their skills and confidence, promoting self-management, reducing unnecessary controls, and fostering a strong culture of empowerment. Stephen P. Robbins (2024) describes transformational leaders as those who inspire followers to put aside personal interests for the organization's benefit, exerting significant influence over them. Such leaders focus on followers' self-development needs, alter their perception of existing issues by encouraging them to view old problems differently, and motivate them to work diligently towards shared goals.

Performance Management is a continuous process to improve individual and organizational performance by setting expectations, providing feedback, evaluating results, and developing improvement plans (Aguinis, 2019; Faozen & Sandy, 2024). This includes performance planning, performance appraisal, and employee development. Armstrong and Taylor (2023) describe performance management as an integrated approach that involves setting clear goals, monitoring progress, and providing support and development for employees to achieve optimal performance. DeNisi and Murphy (2017) define performance management as a series of activities that involve setting expectations, measuring results, and providing feedback with the aim of maximizing individual and organizational performance.

Talent management involves activities and processes aimed at systematically identifying key positions that significantly contribute to an organization's long-term competitive advantage (Collings et al., 2019). This includes building a pool of high-potential and high-performing employees to fill these crucial roles and creating a specialized human resource framework to ensure these positions are filled with the best available talent. Gallardo-Gallardo et al. (2020) describe talent management as a deliberate and strategic approach to identifying, recruiting, developing, and retaining talent, ensuring that organizations can achieve their long-term objectives.

The focus is on establishing a pipeline of talented individuals who can be nurtured into leadership roles within the organization. Yildiz and Esmer (2023) describe talent management as a systematic approach that encompasses various functions such as talent planning, identification, attraction, acquisition, development, deployment, and retention. These functions operate within a cycle aligned with the organization's strategic goals, aiming to enhance performance and secure a competitive edge.

METHODS

In this study, a bibliometric analysis methodology will be used to discuss the current and future perspectives of the Human resource development (HRD) research. It is presumed that bibliometric analysis is suitable in the current research since it offers a systematic and quantitative method of appraising vast amounts of scholarly publications, which allows determining the patterns of publications, the research trends, and the impactful contributions to the field. Using bibliometric methods, the research can leave the narrative review behind and offer a more impartial and evidence-based description of HRD research.

Three of the most popular academic databases, including Web of Science, Scopus, and Google Scholar, were chosen as sources of data that were collected systematically. The reason behind selecting these databases is that they have large content on peer-reviewed journals and they are suitable in gathering the multidisciplinary aspects of HRD studies. Data collection was centered around peer-reviewed journal articles published in 2014-23 to offer an overview of the recent events in a decade. Keywords that were selected with care to be used as search strategy included HRD, HRM, performance management, talent management and transformational leadership. A combination of these terms was made in order to represent the main area of HRD and its subfields. The inclusion criteria included limited English-language peer-reviewed journal articles that directly covered HRD themes. This was done to exclude sources that were not within the time range of the specified period, not written in English and not peer-reviewed sources like conference papers or reports so that the quality and comparability of the dataset are maintained.

To analyze it, the VOSviewer software was used to create bibliometric maps. This software was selected because it is powerful in processing big data as well as its visualization features in scientific networks. This was analyzed in three key dimensions namely; co-authorship networks as a way to study patterns of collaboration between scholars, citation analysis to find out key influential works and authors and finally, key word co-occurrence mapping to identify thematic clusters and emerging trends in HRD research. The results of these analysis enabled identification of predominant research areas, collaborative frameworks, and deficiencies that should be filled by conducting future research. To achieve correctness and validity of the results, the results were triangulated with the available literature reviews on HRD and consulted with the subject matter experts. Not only did this process provide validation of the bibliometric outputs, it was also able to put them into context in the overall discourse of HRD. Another ethical consideration was to use only the publicly available bibliographic data and make sure that all the sources were referenced appropriately.

RESULTS AND DISCUSSION

In the modern day organizations, because of globalization, dynamic changes in technology, and the increasing pressure put on the organization to deliver sustainable organizational performance, Human Resource Development (HRD) has gained more and more importance. As noted in the introduction, HRD has continued to grow outside of the conventional training and development to include extended fields like performance management, transformational leadership and talent management. This development is a symptom of the sophistication of contemporary

organizational issues and the requirement of dynamic tactics to develop the human capital as a competitive edge.

Although this field of work gains increased relevance, HRD is still dispersed into various subthemes and methods, which creates difficulties in retrieving the overall picture of its present and future trends. Most individual research has focused on training effectiveness, or leadership development, or employee performance, but fewer have provided a map of the wider intellectual framework of the research in the area of HRD. Such a gap highlights the importance of bibliometric analysis that allows conducting the investigation of publication tendencies, prominent authors, cooperation network, and new topics in a more systematic way.

The bibliometric methods are especially applicable in the context of the growing number of research on HRD in the world. As the field grows increasingly international and interdisciplinary, the researchers and practitioners need evidence-based knowledge to find their way in the ever-growing literature base. The study under analysis dates back to 2014 to 2023, considering the publications published during the last decade, covering the recent events and trends that can shape the future of the field.

It is against this background that the current work uses bibliometric analysis on VOSviewer to map HRD research in its entirety. The patterns of co-authorship, citation relationships, and key-word co-occurrence can be analyzed, which in turn allows not only to identify the already formed clusters of research but also to point out new areas that can be followed. This contextual base clarifies the necessity and the suitability of a bibliometric approach, which makes the ensuing methodology timely and relevant to the future development of the HRD theory and practice.

Publication Trends (2014–2023)

Based on data from Web of Science, Scopus, and Google Scholar, the number of publications related to Human Resource Development (HRD) continued to increase between 2014 and 2023. This trend indicates that HRD is a field receiving increasing academic attention.

Table 1. Number of HRD Publications (2014–2023)

Years	Number of Publications	Trend
2014	45	Early development
2016	62	Moderate increase
2018	87	Starting to increase significantly
2020	112	Surge in publications related to the pandemic & digital HR
2022	135	Trend peak
2023	128	Slight decline

The statistics reveal a significant positive trend in publications related to HRD, especially in 2020 and later. This influx indicates the increasing academic attention to the topic of digital change and the general shifts in the global organizational dynamics, which have compelled the necessity of more innovative HRD approaches. The growth in the amount of research indicates that this profession is adapting to the quickly changing workforce requirements, technological shocks, and the issues of distant and hybridal working conditions. Additionally, the trend demonstrates a new awareness among scholars of the importance of HRD in enabling organizations to respond, be competitive and continue to develop employees in the light of organizational change. Another trend that can be highlighted by this pattern is the fact that more technology-based, agile, and context-sensitive practices of HRD are

replacing more traditional ones, which is an indicator of change in the priorities of research as well as practice.

Most Cited Keywords

Keyword co-occurrence analysis using VOSviewer reveals five main clusters.

Table 2. Keywords with the Highest Frequency

Klaster	Main Keywords	Frequency
Transformational Leadership	Job satisfaction, Motivation, Performance	134
Human Resource Management	Financial performance, Lean process, Public sector	102
Talent Management	Hospitality, Evidence-based, Retention	76
Human Resource Development	High performance, Coaching, OCB	64
Performance Management	Evaluation, Job crafting, Productivity	58

The analysis shows that the most dominant cluster is the transformational leadership, which plays the most important role in determining the outcomes of employees. This superiority indicates that there is a high level of research focus on the effect of leaders on the performance and work motivation. It is worth noting that transformational leadership is known to create intrinsic motivation, drive engagement, and influence employees to give their best. Nevertheless, although the cluster illustrates the significance of leader-follower relationship, there is the possibility of research bias that is positively oriented that may have underestimated other or contextual variables that influence employee performance and motivation. This observation emerges the need to study how transformational leadership will relate with organizational culture, task-oriented, and individual differences more carefully to understand the full effects of transformation leadership on workforce results.

Co-Authorship and Collaboration

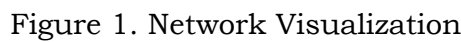
Analysis of co-authorship networks shows increasing international collaboration. Authors from the United States, the United Kingdom, and Southeast Asia form significant networks.

Table 3. Top 5 Contributing Authors & Institutions

Writer	Number of Publications	Institution
Garavan, T.	12	University of Limerick
Swanson, R. A.	10	University of Minnesota
Collings, D.	9	Dublin City University
Noe, R.	8	Ohio State University
Boon, C.	7	University of Amsterdam

The preponderance of European and North American authors suggests that Human Resource Development (HRD) research has traditionally been based in the developed world, which is a manifestation of the established academic systems, funding sources, and the history of professional connections. Recent tendencies however show a significant rise in the contributions of the Asian scholars, and this may indicate that the field is slowly becoming diversified. Not only does this movement emphasize the rising popularity of the study of HRD in the developing economies but also suggests the possibility of new visions and situational understanding that could either refute or enhance the current theories that are largely influenced by the Western experience. Thus, the changing geographic base of authors highlights not only the historical location of HRD scholarship but also the globalization of this field.

The visualization results (Figures 1 & 2) support the table above, showing a close connection between concepts, especially the connection between transformational leadership and job satisfaction and employee performance.



Based on the VOSviewer visualization results displayed in the figure, it can be seen that there are several main clusters in research related to human resource management. These main clusters include "transformational leadership," "human resource management," "talent management," "human resource development," and "performance management." The "transformational leadership" cluster appears to dominate with a large number of closely related keywords, such as "job satisfaction," "employee performance," "motivation," and "business setting." This shows that transformational leadership has a strong relationship with job satisfaction, employee performance, motivation, and business context. Furthermore, the "human resource management" cluster also stands out with keywords such as "financial performance," "lean processes," and "public sector." This indicates that human resource management is often associated with financial performance, lean process implementation, and the public sector. The "talent management" cluster includes topics such as "hospitality" and "assumptions versus evidence," indicating a focus on talent management in the hospitality industry and the importance of an evidence-based approach. The "human resource development" cluster includes terms such as "high performance," "coaching genres," and "organizational citizenship behavior," indicating that human resource development is closely related to high performance, coaching genres, and organizational citizenship behavior. The "performance management" cluster in blue includes keywords such as "employee performance," "performance," and "job crafting." This indicates that performance management is closely related to employee performance, performance evaluation, and job adjustment efforts to improve performance. Overall, these VOSviewer results illustrate the complex relationships among the various aspects of human resource management, leadership, employee development, and performance management, and show how these topics are interrelated in the research literature.

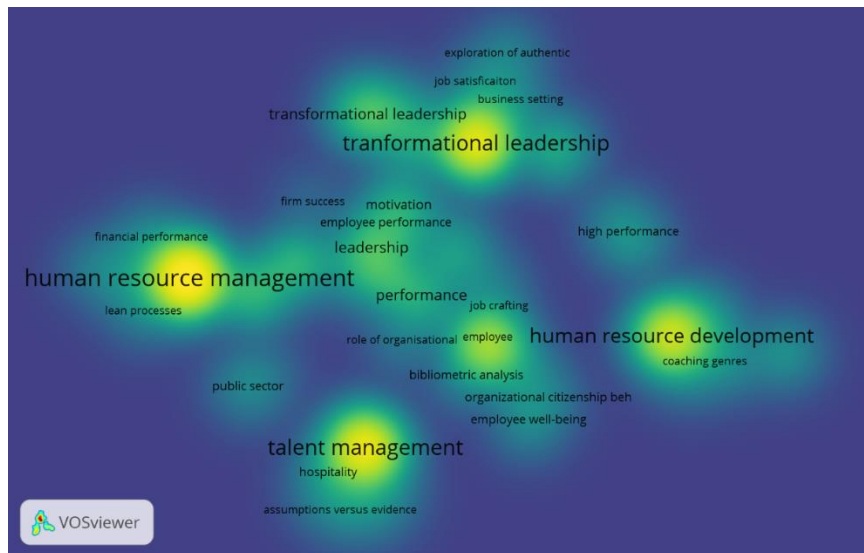


Figure 2. Density Visualization

Density Visualization

Based on the results of the VOSviewer density visualization displayed in the figure, it can be seen that there are several main clusters that stand out in research related to human resource management. These main clusters include "transformational leadership," "human resource management," "talent management," "human resource development," and "performance management." The "transformational leadership" cluster appears to dominate with high density in keywords such as "job satisfaction," "employee performance," "motivation," and "business setting." This shows that the topic of transformational leadership has significant attention in the research literature, especially in relation to job satisfaction, employee performance, motivation, and business context. The "human resource management" cluster also has a high density with keywords such as "financial performance," "lean processes," and "public sector." This indicates that human resource management is often associated with financial performance, lean process implementation, and the public sector, indicating a strong focus on effectiveness and efficiency in human resource management. The "talent management" cluster is prominent with keywords such as "hospitality" and "assumptions versus evidence," indicating that talent management is an important topic, especially in the hospitality industry and the importance of an evidence-based approach. The "human resource development" cluster is dense with keywords such as "high performance," "coaching genres," and "organizational citizenship behavior," indicating that human resource development is closely related to achieving high performance, various coaching genres, and organizational citizenship behavior. The "performance management" cluster in blue includes keywords such as "employee performance," "performance," and "job crafting." The high density of these keywords indicates the importance of performance management in evaluating employee performance and adjusting jobs to improve performance. Overall, the VOSviewer density visualization results illustrate the major areas of concentration in human resource management, leadership, employee development, and performance management research, and show how these topics are interrelated and a major focus in the research literature.

Evolving Themes and Global Directions in Human Resource Development Research

The bibliometric outcomes of this research give valuable information on the progress and future of the research on Human Resource Development (HRD). The five major clusters that have been identified which are transformational leadership, human

resource management, talent management, human resource development and performance management indicate how complex and broad the field is. Nevertheless, in addition to the descriptive mapping, these results should be interpreted more profoundly in order to comprehend their theoretical and practical implications.

The key point is that first of all is the prevalence of transformational leadership which proved to be the largest cluster that was very closely related to job satisfaction, employee motivation and performance outcomes. This finding corresponds to the emerging importance of acknowledging that the behavior of leaders is one of the most essential determinants of organizational performance (Yukl, 2016; Robbins, 2024). The existing studies have been unanimous in highlighting that transformational leaders can also contribute significantly to individual and organizational performance by motivating the followers to work beyond their self-interest (Bashori, 2019; Jufrizen and Lubis, 2020). According to the bibliometric evidence, HRD scholarship is becoming more inclined to see leadership as a managerial role but also as a developmental process contributing to the growth of employees and organizational learning. However, this dominance also indicates the shift in focus to the few, where the primary emphasis is placed on other leadership models like servant or distributed leadership, which might expand the theoretical base of HRD (Aguinis, 2019).

The second significant result is associated with the trends of publication. The continuous growth in the number of publications on HRD since 2014, with the highest number of publications in 2022, shows that the world is becoming more interested in HRD. The jump coincides with other significant external influences, specifically, the COVID-19 pandemic, which altered practices of the work place and expedited the move towards digital HR tools. According to Armstrong and Taylor (2023), the challenge to performance management and employee engagement in organizations experienced in the same period unprecedented challenges and demanded novel interventions of HRD. Therefore, the noted rise in scholarly production is probably the reaction to these practical issues that indicate that the study of HRD is highly sensitive to real-world events.

The other interesting observation is the clustering of human resource management (HRM) with the financial performance, lean processes, and public sector performance. This is an indication of a strategic shift in the field of HRM scholarship, which currently is more focused on efficiency and quantifiable organizational results (Collings et al., 2019). Incorporation of HRM in HRD research means that development is no longer perceived as an educational or training role, but as part of organizational strategy. This justifies the position of Boon et al. (2018), who argue that HRM and HRD have to be considered complementary fields within the umbrella concept of strategic human capital. Nevertheless, the focus on financial performance poses a threat of obscuring other essential aspects of HRD, including the welfare of employees and their growth in the long term (Swanson, 2022; Rosyafah & Pudjowati, 2024; Irshad et al., 2023).

Another trend that is being illustrated by the talent management cluster especially when it is linked to the hospitality industry is the association. According to Gallardo-Gallardo et al. (2020) talent management is a strongly situational practice, and the fact that it is more important in service-based industries stresses the need to approach this process in terms of industry-specific strategies (2020). However, bibliometric findings also emphasize the need to use evidence-based practices, which implies a transformation in more rigorous and data-based HRD practices. Although this contributes to the credibility of HRD interventions, it brings about the issue of possible exclusion of qualitative and context-sensitive views, which are still useful in explaining complicated human processes (Yildiz & Esmer, 2023).

The human resource development cluster in itself with the themes of high performance, coaching, and organizational citizenship behavior (OCB) is an indication that HRD is growing more preoccupied with cultivating a culture of unremitting enhancement and prosocial conduct. Such topics correlate with the original perception of HRD as an activity of improving human knowledge and organizational outcomes (Noe et al., 2020; Swanson, 2022). Simultaneously, the emphasis on OCB is a reflection of the acknowledgment of the fact that an effective HRD is not restricted to skill development but also entails the cultivation of employee engagement, commitment, and ethical behavior. This meaning is similar to the recent research on the importance of HRD in fostering sustainable organizational activities and social responsibility (Garavan et al., 2016).

Lastly, performance management cluster with its associations with job crafting and employee assessment point to a more recent understanding of the individualized and dynamic nature of work. DeNisi & Murphy (2017) reveal that performance management has taken the form of more flexible and developmental models that embrace employee agency as opposed to the inflexible appraisal systems. This change is supported by the bibliometric data, which postulates that the HRD scholarship is reacting to the necessity of the adaptive strategies that should make organizational objectives compatible with personal ambitions. Nonetheless, even with such developments, literature seems to be focused on Western settings. The co-authorship analysis revealed that a big chunk of the scholarship is dominated by the North American and European institutions with a relatively little presence of the developing nations. The imbalance indicates the question of the generalizability of HRD theories and highlights the necessity of conducting cross-cultural studies that are more inclusive (Donthu et al., 2021).

A combination of these results indicates that the field of HRD is changing according to the global, technological, and organizational challenges. The focus on transformational leadership and strategic Hr practices suggests that a transition is made to the combination of human development and organizational performance. Meanwhile, the fact that the gaps still persist, including the lack of representation of non-Western setting and scanty consideration of other leadership models, indicates important future directions in research. By filling these gaps, HRD scholarship can be used to add to more comprehensive and globalized frameworks, and eventually bring about more value to theory as well as practice.

CONCLUSION

This is a literature review that aims to give a complete bibliometric analysis of Human Resource Development (HRD) studies by using VOSviewer to visualize significant trends and patterns in literature during 2014-2023. The analysis, based on the systematic search of academic databases (Web of Science, Scopus, and Google Scholar) and targeting the peer-reviewed journal articles, determines some prevailing clusters/groups and themes in HRD research. The results show that there are five central clusters, including transformational leadership, human resource management, talent management, human resource development and performance management. The cluster of transformational leadership appears as the key one, and its importance in terms of its strong relation with job satisfaction, employee performance, motivation, and context of business is essential. This implies that transformational leadership is a decisive factor of HRD results and organizational achievement.

The "human resource management" cluster shows good relationships with financial performance, lean processes and efficiency in the public sector as it deals with enhancing the functions of an organization by employing strategic HR practices. The

cluster of talent management underlines the importance of talent management and development (especially in the hotel sector) and the necessity of evidence-based strategies. The human resource development cluster emphasizes on the significance of high performance, coaching, and organizational citizenship behavior, as it demonstrates that HRD is critical in developing a highly performing and engaged workforce. Lastly, the performance management cluster focuses on employees performance, job crafting and performance evaluation indicating the significance of aligning individual performance to organizational goals.

In general, this bibliometric review provides very useful information about the evolving situation in the field of HRD research and reveals the areas of interest and new tendencies. The results affirm that the correlation between transformational leadership and strategic HR practices and performance management should be further researched in future to propel organizational success. Also, the role of evidence-based practices is insufficiently studied in talent management, and the influence of HRD initiatives on employee well-being and organizational citizenship behavior is underresearched, which is also discussed as a limitation in the article and the necessity to consider ethical aspects in bibliometric studies. This analysis helps in understanding the future projections of the field of research in HRD, as it provides a basis on which more research is to be done in the future.

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