Mapping the Trends of Human Resource Training:
A Bibliometric Analysis

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Abstract

In recent decades, research on human resource training has been the focus of many published articles. In addition to identifying relevant authors, references, topics, and journals, this research has made significant contributions by investigating the various intellectual frameworks used in research development. To achieve this goal, bibliometric techniques were used to analyse more than 300 articles published between 2018 and 2023. The analysis results show that research on this topic has experienced rapid growth and significant development during the period 2022–2023, a pattern in line with the research development phase. The findings also indicate that contributions to this article come from 25 countries, demonstrating strong collaboration between authors from different countries. Journals from a variety of disciplines, such as management, organizational behaviour, and industrial psychology, publish these articles on human resources topics. A resource-based perspective serves as the primary source for this topic, as well as theoretical support for articles written by distinguished authors. Furthermore, the study highlights key trends and emerging areas within human resource training research, such as the integration of technology into training programs and the emphasis on developing soft skills alongside technical competencies. By offering a comprehensive overview of the current state and future directions of human resource training research, this work aims to serve as a valuable resource for academics, practitioners, and policymakers interested in this critical area of study.

Keywords: Bibliometrics, Citation and Co-occurrence Analysis, Human Resource Training, Knowledge Mapping, VOS Viewer.

Introduction

Technological advances and market evolution in recent decades have prompted many to revise their strategies. Intangible resources can provide a long-term advantage in this regard, according to many studies (1). There is a fairly strong agreement in considering the intangible assets associated with human resources, classified as human capital, as one of the best elements in describing the improvement in company performance (2). Human resources can be developed and enhanced through continuous training and learning procedures. (3), literary researchers have endeavoured to explore the relationship between human resources training and human resource development, and the potential impact on performance. This increasing interest is readily apparent in numerous studies that aim to explore various facets of this relationship. Originally, the primary focus of academic research was to examine the effects of a mix of human resource methods, which resulted in substantial and reliable discoveries (4). As time

progressed, new research approaches emerged, which explored a variety of topics, one of which was the impact of human resource training, which has proven to have significant relevance (5). Due to the significance of this matter and the plentiful amount of new literature, it is crucial to analyse the features and the underlying theories that uphold it. The evolution of training approaches has shifted significantly over the past few decades. Early methods were primarily focused on classroom-based, instructor-led training, while more recent approaches have incorporated digital learning, personalized learning paths, and the integration of technology to improve efficiency (6). The progression from traditional training methods to modern, technology-enhanced programs reflects broader trends in organizational behavior and management. This research is based on Resource-Based Theory (RBT), which posits that human resource training is an intangible resource that can provide a sustainable competitive advantage to companies

(7). By developing skills and competencies through training, organizations can enhance their strategic assets. Additionally, the Dynamic Capabilities Theory highlights the importance of an organization's ability to adapt and develop its human resources in response to changing business environments (8). This theoretical foundation is crucial in understanding the trends observed in HR training, as it underscores the strategic role of training in fostering organizational adaptability and long-term success (9). Therefore, the purpose of this study is to expose global trends related to human resource training through bibliometric analysis of publications in leading academic journals. This study aims to explain the annual publication patterns, geographical distribution, and languages used in publications, as well as the productivity of journals and authors who contribute the most in this field. In addition, this study also seeks to explain the relationship and influence between the main papers and authors in the realm of human resource training, as well as examine the key topics that arise in the related literature. The contribution of this study lies in discerning the most pertinent writers, elucidating the fundamental theory, exploring the mentioned themes, and therefore, facilitating the emergence of novel views and future studies. This research also offers an initial, quantifiable foundation for literature evaluations in future studies that examine similar themes and establish a framework for the adoption of meta-analysis. This article's subsequent section elucidates the methods employed to assess intellectual frameworks in research on human resources training, following a thorough examination of the bibliometric literature. Subsequently, the findings of this investigation are presented and deliberated upon. Ultimately, the findings are presented along with suggestions for future investigations. Bibliometrics is a research field that use mathematical and statistical methods to examine patterns of publication and information transmission. It provides researchers with a set of tools to analyse published data (10). The techniques encompass impact indicators, quote analysis, co-citation, and bibliometric mapping. Quotation analysis relies on the premise that authors will cite documents that they deem pertinent to their research objectives. Hence, the

frequency at which certain publications are quoted can be correlated with the influence they exert on the subject matter (11). Joint quotation involves examining articles that together quote the same references, by collecting data from databases and using analytical techniques as well as graphical representations (12). This type of quotation approach can reflect similarities of content and, therefore, help in identifying groups of topics and authors who may have a connection (13). The acquired data and outcomes are utilised to conduct bibliometric mapping using VOS (14), a useful tool for handling sources from diverse transdisciplinary domains (15). Over the years, the application of bibliometric approaches for mapping and evaluating knowledge published in different domains has experienced significant advancement. Several areas of research in the domain of management have been explored using this method, such as management (16), strategic management (17), finance (18), operations management (13), supply chain management (19), and innovation (20). In addition, human resource management and organizational behavior has also been the subject of research in this approach (21). Bibliometric analysis has been employed in several situations to examine specific issues or sub-fields in management, including the investigation of corporate social responsibility (22), family business (23), entrepreneurship (24), social entrepreneur (25), environmental management accounting (26), business innovators (27), creativity (28), the birth of global enterprises (29), female entrepreneurial (30), adoption of innovation (31) and absorbent (32), as well as other topics. Theories and conceptual frameworks, such as resource-based theory (33), perspectives of dynamic capacity (34), theory of transaction costs (35), or institutional theory (36), have also been a major focus in the use of such methods. These theories are used because they provide a solid framework for understanding the dynamics of organizations and their interactions with the external environment. Resource-based theory is used to explain how companies leverage internal resources, such as knowledge and skills, as strategic assets that can create long-term competitive advantage. The dynamic capacity perspective helps to understand how companies adapt and respond to market changes by continuously updating their internal

capacities. Transaction cost theory is employed to explore how organizations minimize economic costs related to contractual relationships, both internal and external, for greater efficiency. Meanwhile, institutional theory explains how external norms, policies, and rules influence the structure and processes of organizations, and how companies can adapt to these demands to achieve legitimacy. By using these theories and conceptual frameworks, research can provide deeper insights into the factors that influence organizational success and offer a comprehensive explanation of the interaction between internal resources and external pressures.

Methodology

Unit of Analysis

The research is descriptive and tends to use an inductive analysis approach (37). Bibliometric analysis involves quantitative evaluation of bibliographic elements (38). The thick and thin line size that connects the node and the size of the nodes indicate the strength and relevance of the relationship, which consists of co-occurrence, co-citation, and co-authorship as well as bibliographic association (39). In this study, articles published in peer-reviewed journals were selected as research materials because they are regarded as sources of validated scholarly knowledge. These articles have undergone a stringent peer-review process, ensuring that the content has been critically assessed by experts in the field, meeting rigorous academic standards, and providing reliable and credible results (40). As a result, proceeding papers, news articles, and other types of documents found in the database were excluded from consideration. Citation analysis and co-occurrence analysis are used (38). The analysis of citations relies on the level of attention researchers allocate to a publication when they use it as a reference source. Based on this analysis, it can be inferred that the frequency of citations for a paper directly correlates with its impact in advancing the research area (41).

Database Sourcing and Management

Data were obtained from papers accessible in the Scopus database. To explore various methodologies and contributions, the initial search was conducted by restricting the criteria to papers that contained the terms "training" and "human resources" in the title, keyword, or abstract. The selection of articles for this bibliometric analysis was based on a predefined set of criteria. Articles were included if they focused on human resource training, were published in peer-reviewed journals, and appeared between 2018 and 2023. Exclusions were made for articles related to medical or non-business disciplines, ensuring a focus on management and organizational studies. The final dataset was restricted to English-language publications to maintain consistency in analysis. After conducting a continuous selection process, the articles were further filtered, removing those that belonged to irrelevant categories, especially those from the medical discipline. Next, a further examination of the remaining articles was conducted to filter out those that were truly relevant to the research topic. To make the results more specific and relevant, the study performed several filters ranging from year, subject, document type, keyword, and language (42). In this way, the main characters and underlying research patterns can be identified before investigating the core intellectual node, sub-topic, or particular publication. The articles taken in this analysis are those published from 2018 to 2023. Selection results are then published in RIS format (43). Each publication is seen as a prospective addition to research on this particular topic. Upon gathering the dataset, tools were employed to analyze it. For bibliometric analysis, the VOS viewer program was utilized to construct and visually represent associations in a graph format. Additionally, network-based analysis was employed to support the study of the issue (14). VOS viewer was used to visualize the co-citation analysis, co-occurrence mapping, and network analysis. Co-citation analysis was employed to identify the relationships between key authors and foundational literature (44), while co-occurrence mapping helped in mapping the keywords that frequently appeared together in the research (45). Network analysis was employed to demonstrate the interaction and collaboration between researchers from different countries. By utilizing these bibliometric methods, key patterns in the literature were clearly visualized, and clusters of active researchers in this field were identified.

Indicators and Results Visualization

In order to conduct the research, descriptive and relational indicators, along with bibliometric techniques, were utilised. Factors such as language, country, and institutions contribute to the sociodemographic setting to some degree. Data on the frequency of the year of publication help visualize and determine the stages of historical development of research on this topic. Keyword analysis aids in understanding how authors view concepts and studies, as well as how they classify and link these concepts in the context of research. It helps to identify concepts that have not yet received adequate analysis. Information about the main contributors and the most active journals reveals who has been the main researcher in this study and where most of the research has been published. The joint appearance of the author forms the structure of the research community, while the joint occurrence in the quotation helps us understand the intellectual framework underlying this research. Ultimately, the mapping offers a more distinct representation of the accomplishments, the community engaged in this study, and also offers understanding into the possibilities for future research.

Data Analysis Process

Figure 1 below describes a series of stages followed during the data analysis process. First, the criteria for the selection of terms, years, target indices, and the database to be used are defined before the required data are collected and cleared. The data are then processed to apply homogeneous criteria that support the achievement of the research objectives. The data cleaning process involves standardization of large/small letters, checking authors' initials, removal of duplication in reference quotes, and ensuring data completeness, among other steps. This process often requires repeated iterations until accurate data are obtained for analysis. With the help of the previously described indicators and maps, analysis was performed to obtain the required results. Finally, comments and conclusions were compiled based on the analysis, along with a list of research constraints and guidance for future research as part of the final analysis process.
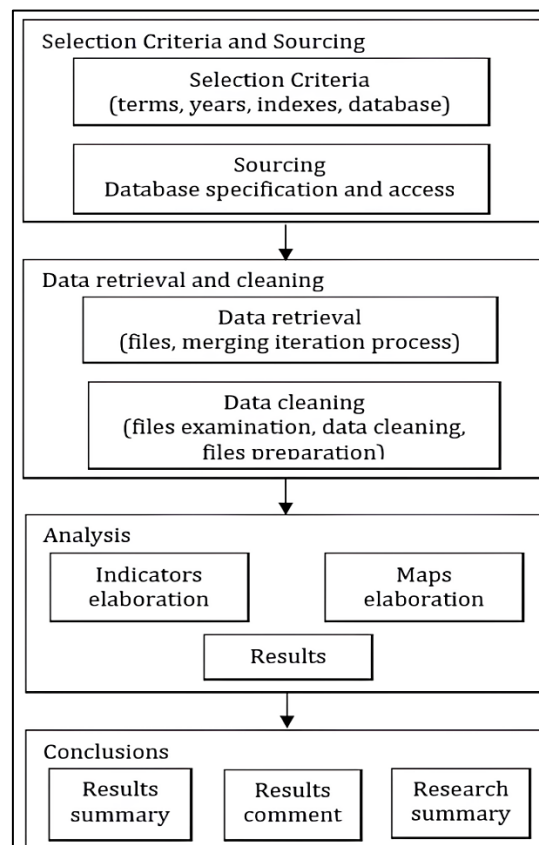

Figure 1: Analysis Methods Overview

Results

The selection criteria were utilised to identify Scopus' main database, and the data preparation was carried out as previously indicated, ultimately resulting in the collection of 396 articles as research samples.

Publications per Year

The articles analyzed were published between 2018 and 2023. As illustrated in Figure 2, different periods were set for further analysis and discussion. Figure 2 shows an increase from 2018 to 2023. The year with the most documents published was 2022, with a total of 74 documents. It clearly indicates that the field of research has reached an important stage of development. During this period, the productivity of research in paper form has experienced a consistent increase, indicating increased interest in these topics. Despite fluctuations year after year, an increase in the number of documents from 53 in 2018 to 72 by 2023 is a positive sign of attention and developments in this field. The above data provides an overview of the trend changes and important developments that have taken place in the field of research over the last few years. As a result, there are several directions of research that might be explored. One is to explore new related topics, undertake more in-depth research in areas that were previously rarely explored, or even attempt to address long-standing problems, which refer to challenges or issues that have been present for a significant period and are widely recognized within the field but may not yet have been fully resolved. By applying an innovative framework, these persistent problems could be approached from a new perspective, potentially leading to novel solutions. Furthermore, efforts to establish new international collaborations may also be beneficial to broaden the scope of research in this field.
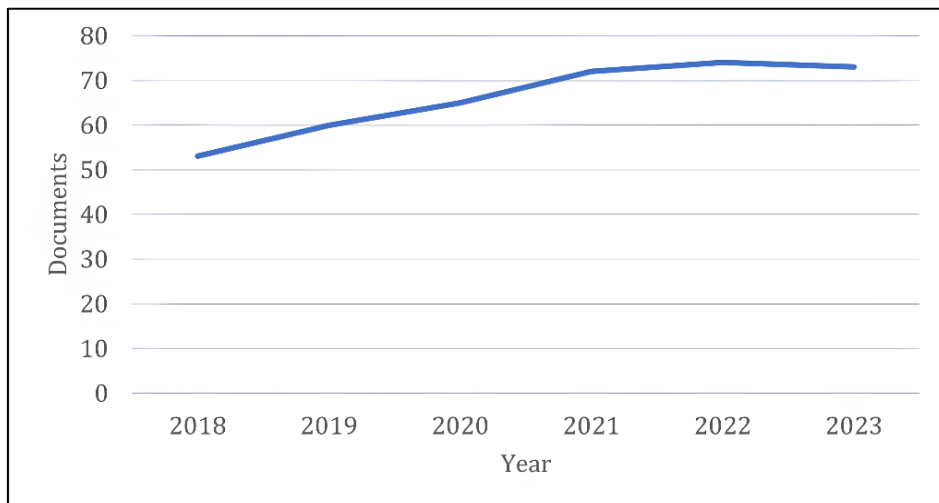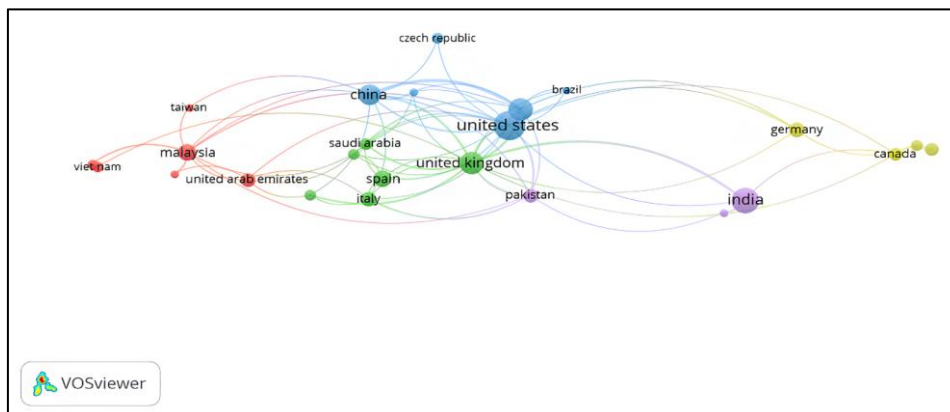

Figure 2: Publication per Year

Figure 3: Authors' Nationalities Map

Countries and Languages of Publications

All the analysed articles were published in English. Figure 3 shows that article contributions come from 25 different countries. Besides, this picture also illustrates collaboration between authors from different countries. The closer the lines that connect the writers, the more often they work together. It reflects active collaboration between researchers from different countries, revealing geographical and cultural aspects of scientific cooperation. There are five clusters emerging. Cluster 1 is Jordan, Malaysia, Nigeria, Taiwan, United Arab Emirates, and Vietnam. Cluster 2 is France, Indonesia, Italy, Saudi Arabia, Spain, and the United Kingdom. Cluster 3 is Australia, Brazil, China, the Czech Republic, Hong Kong, and United States. Clust 4 is Canada, Germany, South Africa, and Sweden. Cluster 5 is India, Pakistan, and Thailand. High levels of article concentration in certain countries result in two noticeable outcomes. Initially, this specialisation might facilitate extensive and targeted investigation on a specific subject. Furthermore, it also presents potential to engage additional nations in scientific cooperation. Put simply, there is a chance to engage authors and institutions from other nations in a collaborative study effort on this subject. It has the ability to produce a wide range of viewpoints and methods, as well as enhance international cooperation in research. High levels of article concentration in certain countries result in two noticeable outcomes. Initially, this specialisation might facilitate extensive and targeted investigation on a specific subject. Furthermore, it also presents potential to engage additional nations in scientific cooperation. For instance, countries from emerging economies such as Malaysia, Nigeria, Pakistan, and Vietnam show increasing participation in HR training research. This indicates that the trends and insights drawn from this research are not limited to developed countries but also capture contributions from developing nations. The inclusion of these countries broadens the understanding of how HR training is approached across different socio-economic contexts, providing a more comprehensive perspective on global trends. Put simply, there is a chance to engage authors and institutions from other nations in a collaborative study effort on this subject. It has the ability to produce a wide range of viewpoints and methods, as well as enhance international cooperation in research.

Journal Productivity

The most influential journal sources for human resource training articles are the Journal of Cleaner Production, TQM Journal, Journal of Construction Engineering and Management, International Journal of Human Resource Management, and Engineering, Construction and Architectural Management. In bibliometrics, the H Index function (Hirsch index) counts the H index of the author or journal and its variants (index g and index m). The H index is the number of articles published (H) by a writer or journal, each of which has been quoted in other papers at least "h" times. The m index is defined as H/n, where H is the index H and n is the amount of years since the first publication of the scientist/journal. The g index, introduced by Egghe in 2006, is an enhancement of the H index to measure the global quotation performance of a series of articles. Table 1 lists the journals with at least two entries in the H index.

Table 1: Journals with Publications on Human Resources Training

Journal	H index	g_index	m_index	TC	NP	PY_start
Journal Of Cleaner Production	17	23	2.429	1707	23	2018
Tqm Journal	9	12	1.286	163	16	2018
Journal Of Construction Engineering And Management	7	11	1	129	11	2018
International Journal Of Human Resource Management	7	9	1	310	9	2018
Engineering, Construction And Architectural Management	5	7	0.833	54	9	2019
Human Systems Management	3	9	0.429	91	9	2018
Management Research Review	4	8	0.667	66	8	2019

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Employee Relations	4	7	0.667	49	7	2019
European Journal Of Training And Development	4	7	0.667	70	7	2019
Problems And Perspectives In Management	3	3	0.429	14	6	2018
Vine Journal Of Information And Knowledge Management Systems	3	6	0.429	54	6	2018
International Journal Of Manpower	2	4	0.286	19	6	2018
Production Planning And Control	5	5	0.714	153	5	2018
IEEE Engineering Management Review	2	4	0.4	16	5	2020
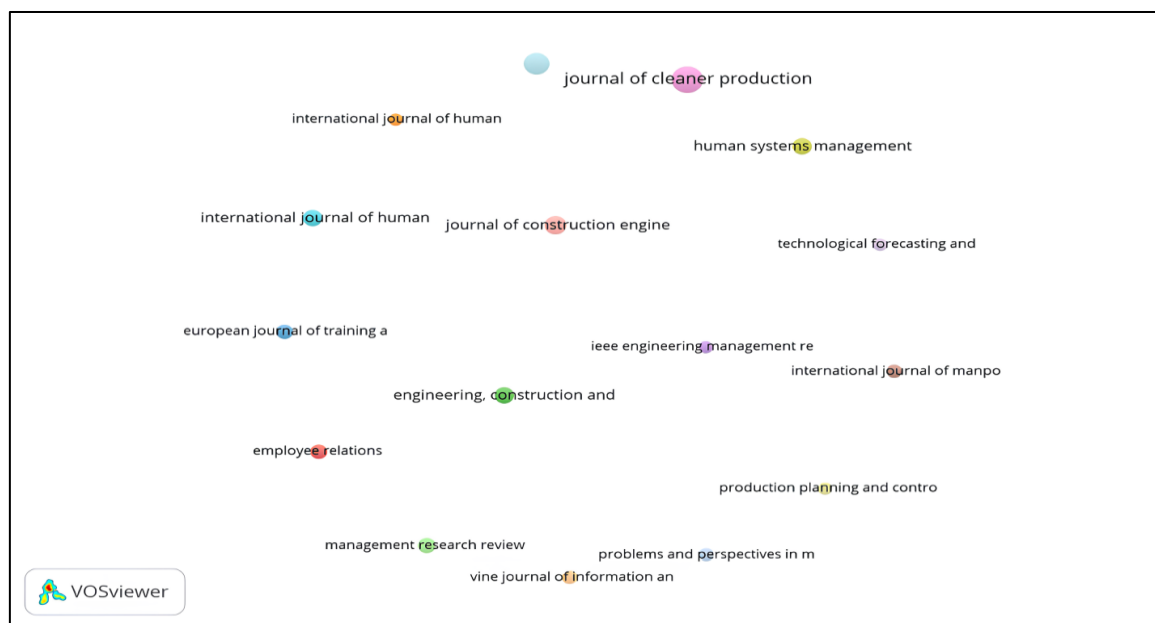
Figure 4: Journals Co-Occurrence Map

The maps shown in Figure 4 help visualize these findings in journals and categorize them. Analysis of joint quotations for the magazines has allowed the creation of maps to understand the proximity and relationship between them. These maps also serve to indicate the geographical distribution of publications that contribute to the understanding of this topic. Due to the large volume of publications and citations, management journals are typically positioned in the central area of the map. Publications from other disciplines, including psychology, pertain to this central group, and numerous journals revolve around it. The proximity in this map reflects the extent to which the journals are often quoted together, showing how these articles are connected with knowledge relevant to their study. This map helps us visualize the core of the sources that deepen this topic more deeply. They serve as a reference point for various perspectives and contributions to research on human resource management.

Authors' Productivity

Table 2 presents information regarding a solitary author within a subset of examined articles. The sample consists of 1922 individual authors. The authors in the table were ranked based on their h-index on the left and the total amount of citations they obtained on the right. The use of these two rankings gives a different insight into the contributions of the authors to this research. The H-index can provide an overview of the impact of their research in this field, while the total number of quotations indicates to what extent their work is quoted by other researchers, which can describe how far their work affects other research and generates collaboration.

Table 2: Most Prolific Authors

Authors	h_index	g_index	m_index	TC	NP	Authors	h_index	g_index	m_index	TC	NP
Agrawal N	2	2	0.4	24	2	Jaaron Aam	1	1	0.143	357	1
Ahmad M	2	2	0.333	22	2	Talib Bon A	1	1	0.143	357	1
Allen Mmc	2	2	0.333	22	2	Zaid Aa	1	2	0.143	357	2
Antony J	2	2	0.5	17	2	Chong T	1	1	0.167	326	1
Berber N	2	2	0.333	11	2	Jabbour Cjc	1	1	0.167	326	1
Cairncross G	2	2	0.5	5	2	Roscoe S	1	1	0.167	326	1
Calderón-Hernández G	2	2	0.286	11	2	Subramanian	1	1	0.167	326	1
Chong Sc	2	2	0.286	24	2	Mousa Sk	1	1	0.2	237	1
Ciarapica Fe	2	2	0.286	30	2	Othman M	1	2	0.2	237	2
Davis P	2	3	0.333	34	3	Vrontis D	1	2	0.2	184	2
Emuze F	2	2	1	4	2	Christofi M	1	1	0.333	183	1
Filimonau V	2	2	0.4	83	2	Makrides A	1	1	0.333	183	1
Jiang X	2	2	0.4	15	2	Pereira V	1	1	0.333	183	1
Kumah P	2	2	0.286	7	2	Tarba S	1	1	0.333	183	1
König Cj	2	2	0.333	74	2	Trichina E	1	1	0.333	183	1
Lamont M	2	2	0.5	5	2	Hwang B-G	1	1	0.143	179	1
Langer M	2	2	0.333	74	2	Looi K-Y	1	1	0.143	179	1
Leigh J	2	2	0.5	5	2	Shan M	1	1	0.143	179	1
Liu J	2	2	0.333	21	2	Kraiger K	1	1	0.167	161	1
Muisyo Pk	2	2	0.5	91	2	Mattingly V	1	1	0.167	161	1
Naranjo-Valencia Jc	2	2	0.286	11	2	Guerci M	1	1	0.167	152	1
Newaz Mt	2	2	0.4	34	2	Huisingh D	1	1	0.167	152	1
Poór J	2	2	0.4	7	2	Lettieri E	1	1	0.167	152	1

Qin S	2	2	0.5	91	2	Pinzone M	1	1	0.167	152	1
Raut Rd	2	2	0.333	70	2	Chavez R	1	1	0.2	139	1

Note: The Left list is ranked by h-index and the right list is ranked by citations.

When assessing the relevance of index-h, prominent authors like Agrawal N, Ahmad M, Allen Mmc, Antony J, and Berber N hold the top positions. Agrawal N, which has strong roots in management, conducted research exploring a wide range of topics, including Impact of Human Resource Management Practice on TQM: an ISM-DEMATEL Approach and A Framework for Crosby's Quality Principles Using ISMA and MICMAC Approaching. Meanwhile, Ahmad M and Allen Mmc focused their attention on topics related to performance and organizational performance in Pakistan. All the research carried out by these authors has made a significant contribution to understanding the different aspects of Human Resource Management and that's what makes them leading in index-h rankings. Jaaron Aam's publications, co-authored with Talib Bon and Zaid Aa, are highly ranked in both classes, indicating the significant relevance of his research in the subject of human resource management. His research, particularly on the Human Resource Management System (HRMS), with a focus on the pivotal function of training, has emerged as a prominent point of reference in this domain. Therefore, these works enhance comprehension of human resource practices that impact the success of organisations. The reasons for the highest ranking in this category may be different from the relevance it acquired in literature. Therefore, it is important to go deeper by looking at the references quoted in these articles to better understand their relevance and impact in research. The quoted references will provide insight into the extent to which these works influence research and what contributions they have made to the development of knowledge in the field of human resource management.

References Analysis

The reference analysis used in the article also provides valuable insights into the intellectual map within the discipline. In the sample, there are 25,101 references and quotes that are most often referenced, which can help identify the most influential works in the human resources management literature. Table 3 will provide a more detailed overview of the most frequently used quotes and contributions of such works to this discipline. By looking at the references that are often referred, the authors can identify core knowledge and major trends in this field.

Table 3: Most Local Cited References

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Based on the references analyzed, it is apparent that two main topics dominate the discussion: the impact of human resources management (HRM) practices on organizational performance, and the effect of training on organization outcomes. The most frequently quoted references stand out for making significant theoretical and methodological contributions to understanding these relationships (46, 47). The analysis also revealed strong connections between several references, highlighting the complex relationship between concepts and theories in the literature of HR Training. Some references tend to be used to support specific arguments, while others provide a strong theoretical foundation for further research. For example, some works are often quoted to discuss methodological bias in behavioral research (48), while others are frequently cited to describe the mediation mechanism between human resource management and organizational performance (49). Although some of the classic references remained relevant and focused in the HR Training literature, the analysis also revealed a growing interest in the latest research. Recent studies on sustainable human resource management show a shift towards a more holistic understanding of HRM practices in a broader context, including sustainability and environmental issues (50). Thus, this in-depth analysis provides a more thorough understanding of the structure, trends, and contributions of the existing HR Training literature. This information is not only useful for designing advanced research, but also to help develop a more sophisticated conceptual framework in understanding the complex dynamics involved in human resource management and training in an organizational context. In order to analyse the co-citation of the quoted references, the authors examined the

articles that have been quoted at least five times to identify the intellectual foundations underlying the research on the subject. The co-citation map for the reference (Figure 5) is used to visualize the result. The analysis of the main component is done to study the co- citation reference network in Figure 5.

Topics on Human Resources Training

The research articles in the sample employed a total of 2532 distinct keywords for categorising their study. Figure 6 displays a visualisation of 104 keywords that are found in research articles,

specifically in samples that occur at least five times. Each keyword is indicated as a node, and the strength of the relationship between keywords is expressed by the proximity and thickness of the lines that connect them. This helps to describe relationships and trends between the major concepts used in research. It is a useful way to gain a visual understanding of the core of the topic and how these concepts relate in the literature. From this figure, the most relevant and important keywords in research can be identified.
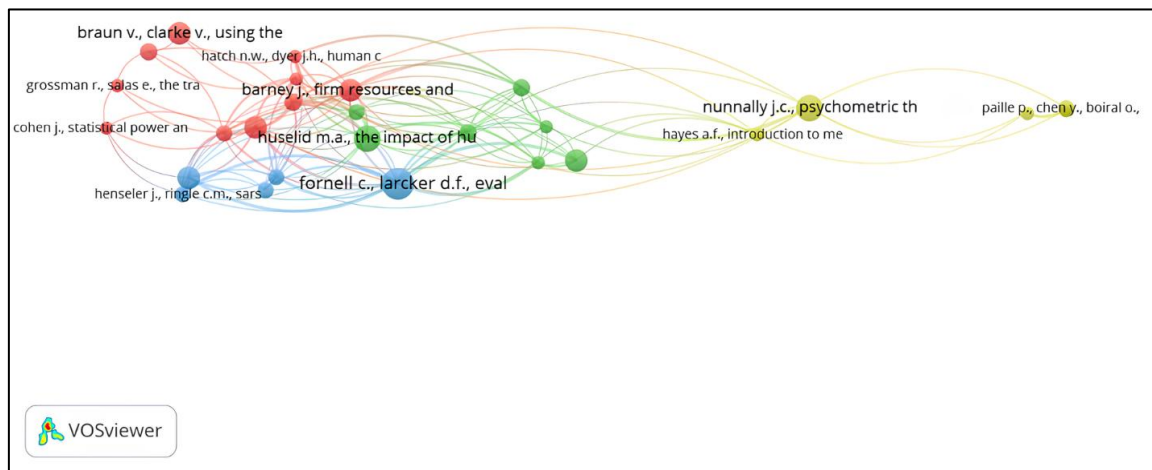

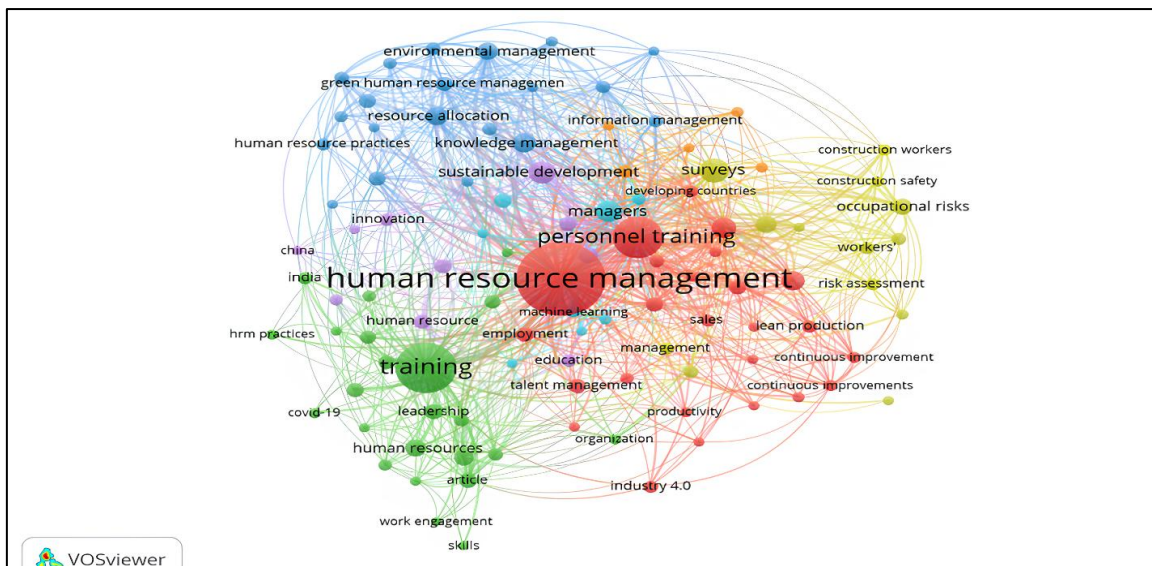**Figure 5**: Co-citation - Map of Cited References

Figure 6: Co-occurrence of keywords - Map

A deeper understanding of the keywords used in this research helps clarify major research topics and trends in the literature. There is a strong correlation between keywords such as "human resource management" and "personal training," reflecting the focus of research on these topics in the academic world. This interpretation aligns

with previous findings, including the cognitive framework, the most pertinent scholars, and the cited sources. Furthermore, the inclusion of data regarding the authors' country of origin and industry, as indicated by keywords, offers supplementary understanding of the research's origin and the industry's most closely linked to

the subject matter. In this context, there is an emphasis on labor-intensive industries. This knowledge is very useful for understanding the context and direction of the research, as well as identifying the underlying theoretical framework. This data can also help in developing a deeper view of research topics and possible future research directions.

Discussion

This study proposes that human resources training are a widely recognised yet complex subject in the field of business and management literature. An examination of publications published from 2018 to 2023 indicates that research on the subject is seeing significant growth and advancement in the years 2022-2023. This pattern frequently occurs when study in a particular subject or field is in a phase of development. Thus, it offers a solid foundation for doing further research and also allows academics to investigate other subjects or connections, including the possibility of utilising a different framework. When a topic reaches a point that can be deemed conclusive, the intellectual groundwork lays the platform for conducting a robust investigation, focusing on related issues that have not yet been investigated. All the articles analyzed in this study were published in English. The results showed that the article's contributions came from 25 different countries, and illustrated collaborations between authors from different countries. The closer the lines that link the authors, the more often they work together, reflecting active collaboration between researchers from different countries. There are five emerging clusters, indicating a high concentration of articles in some countries. These concentrations can lead to more in-depth and focused research on specific topics, but also open up opportunities to involve new countries in scientific collaboration. Thus, there is an opportunity to invite authors and institutions from different countries to collaborate in research on this topic, which can produce diversity of perspectives and approaches, as well as enrich cross-border collaboration in research. In this study, the Journal of Cleaner Production, TQM Journal, Journal of Construction Engineering and Management, International Journal of Human Resource Management, and Engineering, Construction and Architectural Management were identified as the most influential journal sources in articles on Human Resources Training. Bibliometric analysis uses the H Index, g-index, and m-index to measure the impact and performance of authors or journals. A joint quotation map for these journals illustrates the relationship and proximity between them, suggesting that the research is based on key concepts in human resource management. By involving international cooperation and more industries, future research can broaden the understanding of this topic. Human resource training is intrinsically linked with interdisciplinary fields such as organizational behavior and psychology. Training methods often draw on psychological principles of learning, motivation, and behavior modification, while organizational behavior frameworks inform the ways in which training programs are designed and implemented within corporate structures. As such, this study intersects with these fields by analyzing how training approaches are influenced by both psychological and organizational factors. This intersection highlights the multifaceted nature of HR training, making it a vital area of study across different academic disciplines. The results of this study suggest several key sub-topics in the human resource training literature, namely the integration of technology in training, the focus on the development of interpersonal skills, and cross-cultural training to support global collaboration. By categorizing these findings into distinct sub-topics, a clearer structure is provided for analyzing the emerging trends in HR training literature. This also facilitates a deeper understanding of the main focuses that researchers have concentrated on during the period analyzed. The results of this study can assist training managers in developing more effective training programs by utilizing technology integration to increase efficiency and effectiveness. Moreover, focusing on developing interpersonal skills, such as communication and team management, can significantly improve training outcomes, thus creating a more adaptable workforce that meets the dynamic needs of organizations.

Conclusion

Data on individual authors in sample articles, including 1922 authors, are presented. The h-index rating and total number of citations are

given for each author, providing insight into the impact and influence of their work. Prominent authors such as Agrawal N, Ahmad M, Allen Mmc, Antony J, and Berber N have made significant contributions to the understanding of human resource management. Their work strengthens knowledge of HRM practices that influence organizational success. The research conducted by Jaaron Aam, Talib Bon, and Zaid Aa is notable for its relevance and impact in the literature. It underscores the importance of understanding the references cited in research to enhance awareness of their contribution to advancing knowledge in this field. Reference analysis in articles highlighting intellectual maps in human resource management (HRM). The most frequently quoted references help identify influential works in the HRM literature. Two main topics that dominate the discussion are the impact of HRM practices on organizational performance, and the effect of training on organisational outcomes. Classic references remained relevant, while new research on sustainable human resource management showed growing interest (46, 47, 50). The analysis also reveals complex relationships between concepts and theories in HRM literature, which can help design more advanced research and more sophisticated conceptual frameworks. The researchers in the sample employed a diverse range of terms to categorise their research. Figure 6 presents a visualisation of the term, illustrating the interconnection between the essential concepts in literature. This keyword analysis helps identify major research topics and trends, such as focusing on human resource management and personal training. Information about the country of origin of the author and the industry associated with the keyword provides additional insight into the origin and direction of future research.

Limitations and Future Research

There are certain constraints in this investigation. While the contributions were evaluated throughout the research period, conducting a similar analysis for each indicated stage could be advantageous. It may offer an alternative viewpoint on the evolution of indicators and provide a different approach to understanding potential patterns. Regarding the mentioned reference location, the incorporation of precise natural language programming, when it becomes accessible, would be intriguing to enhance the effectiveness of these strategies. Subsequent investigations on human resource training should aim to address the identified deficiencies emphasized by researchers. Gaining more insight into various industries and conducting further analysis from an international perspective would also be valuable. Finally, these contributions provide a strong foundation for developing meta-analysis on this topic.

Abbreviations

RIS: Research Information Systems,
VOS: Visualization of Similarities.

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Author Contributions

Nisa Fauziah wrote the manuscript, provided data, and analysis, Heru Kurnianto Tjahjono provided feedback of article.

Conflict of Interest

The authors declare no conflicts of interest.

Ethics Approval

There are no living subjects in this research, and informed consent is not applicable.

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