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Future Research Directions and Global Research Trends of Applying Artificial Intelligence in Human Resources Using Bibliometric Analysis

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Abstract

The study aims to highlight the future research directions and global research trends of applying artificial intelligence (AI) in Human Resources (AI) Using Bibliometric Analysis in the last three decades (1996–2024). Using performance analysis and scientific mapping, the research uses bibliometric analysis to investigate co-authorship, co-occurrence, citation, bibliographic coupling, and co-citation analysis in 99 articles taken from the Scopus database. The analysis looked at the quantity of scientific publications, the most prolific writers, the most important papers, nations, and organizations. The study used VOSviewer as a science mapping and performance analysis tool. The most productive year was 2023 with 34 publications and the most impactful institute and countries are the Essec Business School in France, and the country is the United States, respectively. Similarly, the most influential journal is “California Management Review”, furthermore, the most cited article is “Artificial intelligence in human resources management: Challenges and A path forward”. The authors

also identified four thematic clusters of Research on Artificial Intelligence in Human Resources, the four theme groupings are Artificial Intelligence, Human Resource Management, Human Capital Complementarity, and AI Capability Framework. It presents academic direction and information about the current state and future study in the field of artificial intelligence literature in human resources. This study enhances the theoretical comprehension of AI's impact on HR by providing a thorough examination of worldwide patterns and real-world implementations. It promotes the use of AI frameworks in line with strategic HR objectives.
Keywords: Artificial Intelligence, Human Resources, Bibliometric Analysis, Performance Analysis, Science Mapping

Introduction

In the era of globalization, technology is a key component and the driving factor behind the growth of contemporary businesses (Alkoud *et al*., 2023a). Technology plays a crucial role in facilitating collaboration and communication across the business environment Alkoud *et al*., 2023b). It is noted that there is a significant growth in international business, especially with the increasing development of information and communication technology due to its great advantages (Ben Sedrine *et al*., 2020; Mysirlaki & Paraskeva, 2020; Alkoud & Qatamin, 2023a,)This eventually led to the emergence of new business models such as virtual work and hybrid work (Nenonen & Sankari, 2022; Aoyama & Silva, 2023, Alkoud & Qatamin, 2023b). In today's workplace, implementing an information and communication technology-based human resource management (HRM) plan has become essential and is spreading more widely. Information and communication technology integration with HRM strategies improves employee and organizational performance (Askenazy *et al*., 2006; Bloom *et al*., 2012).

Artificial Intelligence (AI) is one of the intelligent technologies introduced by the so-called "Fourth Industrial Revolution," or "Industry 4.0", and it is predicted to continue in the future. (Kong *et al*. 2021; Badicu, 2022; Qamar *et al*., 2021). Because businesses must now continuously compete on a worldwide scale rather than just with one another within the nation, the way business is historically conducted is currently under threat (Xin *et al*., 2022). To get a competitive edge in today's global marketplace, organizations must implement technology (Wong *et al*., 2020; Xin *et al*., 2022). The application of artificial intelligence (AI) in corporate organizations is growing by about 25% each year, according to the results of the McKinsey Global Survey (Xin *et al*., 2022). Apart from that, most C-level executives whose organizations have used AI concur that doing so has increased business returns and even decreased expenses (Cam *et al*., 2019; Xin *et al*., 2022). A phenomenal growth expectation of more than 1,100 percent is anticipated for the entire global revenue for AI software, which is predicted to rise from $9.5 billion in 2019 to as much as $118.6 billion in 2025, according to current projections (Seal, 2019; Qamar *et al*., 2021)

Different definitions of artificial intelligence have been discussed by researchers. Numerous research have concentrated on different facets of artificial intelligence (AI), depending on the period and degree of technological advancement attained (Badicu, 2022). For instance, Artificial Intelligence has been defined as " a set of techniques that allow computers to complete tasks that do not require the reasoning skills that human intelligence brings" (Grzonka *et al*., 2018; Xin *et al*., 2022). It supports a variety of applications by functioning as software, robots, or bots (Madakam *et al*., 2019; Xin *et al*., 2022). Moreover,

Paesano (2021) has defined AI as "Systems that exhibit intelligent behavior by analysing their environment and performing actions, with a certain degree of autonomy, to achieve specific objectives". Artificial Intelligence (AI), also known as machine intelligence, was developed to create "thinking machines" that can replace human intelligence by imitating human talents and intellectual activity (Jia *et al*., 2018; Qamar *et al*., 2021).

The integration of Artificial Intelligence (AI) in Human Resource Management (HRM) is a critical area of research as organizations navigate the challenges of the Fourth Industrial Revolution. AI has demonstrated its capacity to enhance HR functions, including recruitment, performance evaluation, and employee engagement, by increasing efficiency, reducing operational costs, and improving decision-making accuracy (Tambe et al., 2019; Strohmeier & Piazza, 2015; Chowdhury et al., 2023). Despite its rapid growth, the adoption of AI in HRM remains limited, and many organizations struggle to implement AI-driven solutions effectively (Vrontis et al., 2022; Kshetri, 2021).

This study addresses these gaps by providing a comprehensive bibliometric analysis of AI in HRM research over the past three decades. It maps global research trends, identifies prominent authors, institutions, and countries, and highlights critical thematic clusters in the literature. By doing so, this study serves as a valuable resource for researchers, HR practitioners, and policymakers seeking to align HR practices with AI technologies (Tambe et al., 2019; Popkova & Sergi, 2020; Pan et al., 2023). Ultimately, the findings contribute to both theory and practice by shedding light on the utility of AI in HRM, offering practical insights to improve organizational performance and guide future research directions.

Background of Artificial Intelligence (AI) in Human Resource

The human resources manager began using artificial intelligence to facilitate the performance of human resources management tasks. Human Resource Management (HRM) is one field of management that has started to use AI applications and has shown a wide range of consequences for AI utilization (Strohmeier and Piazza, 2015; Qamar *et al*., 2021). Artificial intelligence (AI) has proven to be effective in a number of human resource management (HRM) tasks, including staff assignment, employee selection, employee turnover, and emotional engagement prediction (Zhang *et al*., 2012; Oswald *et al*., 2020; Sexton *et al*., 2005; Lucia-Casademunt *et al*., 2013; Karatop *et al*., 2015; Qamar *et al*., 2021; Kshetri, 2020) For instance, A 2019 poll found that 61% of businesses were utilizing AI to enhance HRM in crucial areas where AI had changed HRM (Badicu, 2022; Kshetri, 2020). AI increases efficacy and efficiency in organization by streamlining management procedures and lowering related expenses (Nankervis *et al*. 2021). Greater candidate outreach is made possible by it since it targets passive candidates who may become interested in the role even though they are not actively seeking a job (Black and van Esch 2021).

AI has advantages like any other technical advancement, and its use in HRM is no exception (Vrontis *et al*. 2022). According to Badicu (2022), AI has advantages for companies, society, and employees. AI HR managers can concentrate on jobs that provide value and call for specialized knowledge and skills by having repetitive and time-consuming duties automated (Pillai and Sivathanu 2020). By supplying more information and facilitating better processing, applying AI to avoid or reduce machine learning errors enhances decision-making (Michailidis 2018). Time-consuming and labor-intensive recruitment procedures, such as

reviewing and organizing a large number of resumes, selecting the most qualified applicants, and identifying employees who need training, will be tasks that AI helps perform (Rykun , 2019; Kshetri, 2020).

Research Contribution

Human Resources (HR) department is still unable to implement AI-based tools, despite the fact that some departments of various firms have accepted or integrated them (Vrontis *et al*. 2022; Badicu, 2022). While many HR departments of companies acknowledge the value of deploying AI, they also point out that they have not made any concrete steps in this respect (Badicu, 2022). According to the earlier study, the area of AI in HRM is still in its infancy and underdeveloped as compared to other disciplines (Strohmeier and Piazza, 2013; Tambe *et al*., 2019; Qamar *et al*., 2021). Moreover, despite being touted as a potent tool in HRM, AI has not received much scholarly attention (Pan *et al*., 2022), Hence, the present study offers additional scientific contributions toward the conceptualization of worldwide research patterns and forthcoming research avenues concerning artificial intelligence (AI) within the domain of human resources by employing bibliometric evaluation. This research fills in a major knowledge gap on the use of AI in human resources. In line with the strategic goals of academics and industry professionals, it seeks to offer concise insights into the worldwide trends and potential paths for AI in HR. The study highlights how AI is becoming more and more significant in changing HR procedures.

Research Questions

The present study employs a thorough bibliometric analysis to address several research questions (RQs) related to artificial intelligence (AI) in human resources. This will help to bridge the gaps in earlier research that did not fully address this issue. The following research aims to answer the following questions.

- ***RQ1.*** *What is the current trend of research in artificial intelligence (AI) in human resources?*
- ***RQ2.*** *Which are prominent authors, organisations, and countries of artificial intelligence (AI) in human resources?*
- ***RQ3.*** *Which are the Most Influential Journals (MIJ) on artificial intelligence (AI) in human resources?*
- ***RQ4.*** *Which are the Most Influential Articles (MIA) on artificial intelligence (AI) in human resources?*
- ***RQ5.*** *What are the Knowledge foundations of artificial intelligence (AI) in human resources?*
- ***RQ6.*** *What are the thematic clusters of artificial intelligence (AI) in human resources?*
- ***RQ7****. What are the Influential topics in the "period of 1996–2024" on artificial intelligence (AI) in human resources?*

Bibliometric Research Method

Using VOSviewer, the technique comprised a step-by-step bibliometric study that included data extraction from the Scopus database, data cleaning, and co-authorship, co-occurrence, and citation analysis. To guarantee openness and repeatability of the study procedure, a graphic depiction of the analytical phases has been incorporated. Here we explain the steps for collecting and analyzing data.

Defining the Appropriate Search Terms

For a study on the use of artificial intelligence (AI) in human resource management (HRM), papers from the Scopus database were chosen based on inclusion and exclusion criteria that are shown in table 1. The search for the study was done on June 20, 2024, using only the Scopus database. Papers released in the years 1996–2024 were taken into account. With an emphasis on AI-related terms like "AI," "Artificial Intelligence," "Machine Learning," "Deep Learning," and others, along with HR-related terms like "Human Resource," "Personnel Management," "Talent Management," and more, specific search terms were selected to find pertinent publications. 513 articles matched the first search query.

Subject areas such as Business, Management and Accounting, Economics, Econometrics and Finance, Social Sciences, and Arts and Humanities were then used to filter the articles. Consequently, 228 articles remained after 285 items were eliminated for not fitting into these categories. Only publications categorized as "Article" were taken into consideration after additional filtering based on the type of publication was completed. As a consequence, 126 articles were eliminated, leaving 102 included. Furthermore, only publications published in English were included; this resulted in 99 items remaining after 3 articles were eliminated. To sum up, a stringent set of criteria was utilized during the selection process to guarantee that the research comprised just of the most pertinent and superior quality articles, hence furnishing a strong basis for the investigation of AI applications in HRM.

Table 1
Article Inclusion and Exclusion Criteria

Selection criteria		**Exclude**	**Include**
Database	"Scopus"		
Date of Search	20 June 2024		
Period of Publications	1996-2024		
Search term	(TITLE ("AI" OR "Artificial Intelligence" OR "Machine Intelligence" OR " Computational Intelligence" OR " Cognitive Computing" OR " Automated Reasoning" OR "Machine Learning" OR " Intelligent Systems" OR " Neural Networks" OR " Deep Learning" OR " Robotic Process Automation" OR "Robotic Process Automation") AND TITLE ("Human Resource" OR "Personnel Management" OR " Human Capital" OR "Workforce Management" OR " Staffing" OR " Talent Management" OR " Employee Relations" OR "Labor Relations" OR " People Operations" OR " HRM " OR " Manpower" OR "Human Resource Management"))	-	513
Subject area	"Business, management and accounting, Economics, Econometrics and Finance, Social sciences and Arts and Humanities"	285	228
Publication type	" Article"	126	102
Language screening	"Include documents published in English only"	3	99

Data Collection

Scopus was utilized to gather the data since it has a significant amount of double-blind, peer-reviewed articles published in journals with high impact factors (Groff *et al*., 2020). To arrive at the final total of 99 articles in Table 1, we used a thorough procedure. The Keywords are

"AI", "Artificial Intelligence", "Machine Intelligence", " Computational Intelligence", " Cognitive Computing", " Automated Reasoning", "Machine Learning", " Intelligent Systems", " Neural Networks", " Deep Learning", " Robotic Process Automation", "Robotic Process Automation". And "Human Resource", "Personnel Management", " Human Capital", "Workforce Management", " Staffing", " Talent Management", " Employee Relations", "Labor Relations", " People Operations", " HRM ", " Manpower", "And Human Resource Management".

Data extracted/downloaded from Scopus or any other online database is prone to inaccuracies due to erroneous bibliographical and bibliometric information resulting from the inclusion of the original article in subsequent studies (Donthu *et al*., 2021). Therefore, there is a chance that using this extracted data without further refinement could result in a dangerously incorrect diagnosis. As such, there were several processes we needed to do in order to clean and arrange the data. This prompted us to heed the advice of Zupic and Cater (2015) and Donthu *et al*. (2021) about the visualization and interpretation of the data, as well as the search for bibliographic and bibliometric information.

Using the VOSviewer software's "natural language processing" capability, the researchers eliminated a number of terms that were present in the article's "titles, abstracts, and keywords" in order to enhance their analysis and findings. For example, we made many plural nouns—such as resources to resource—singular. Other combinations of similar concepts are also made; for example, "organization" is formed by combining the terms "organization" and "organization." Finally, several of these cleaning methods contribute to the homogeneity of topic evaluation.

Selecting the Techniques for Analysis

Text and data are analysed and quantified using quantitative methods by a set of instruments known as bibliometric analysis (Mishra *et al*., 2018; Goyal and Kumar, 2021). This method allows for the extraction of fresh data from literature studies to be included in future research projects (Suominen *et al*., 2016; Groff *et al*., 2020). To accomplish this, it is required to write and publish biographies on themes, spot trends within a field of study, and evaluate research publications that act as a roadmap for comprehending the current status of the field (Gao *et al*., 2021; Hossain *et al*., 2022). Authorship, citation, bibliographic coupling, co-citation, and co-word analysis are bibliometric analysis techniques used by scholars to analyse the biographic data by Donthu *et al*. (2021).

Findings

There are two types of bibliometric analytic techniques used in this work: (1) science mapping and (2) performance analysis. Science mapping focuses on the relationships between research parts, whereas performance analysis primarily considers the contributions produced by research components (Donthu *et al*., 2021). The ensuing subsections will provide clarification on the available techniques for performance analysis and science mapping.

Performance Analysis

Performance analysis looks at the contributions that various research components have made to a certain topic. The distinctive feature of bibliometric studies is the analysis, which is descriptive in nature (Donthu *et al.* 2020; Donthu *et al.*, 2021). This study will analyse these

types of performance since performance analysis is a regular method in reviews to provide the performance of many research constituents (e.g., authors, institutions, nations, and journals).

Publication Trend

Figure 1 illustrates the publication trends in the area of artificial intelligence in human resources. Preliminary research trends indicate that the use of artificial intelligence was not previously common in human resources research (1996 to 2019), where, the journey of research in this area was begun by John J. Lawler and Robin Elliott (1996) with an article titled" Artificial Intelligence in HRM: An Experimental Study of an Expert System". but it began to be increasingly discussed at the beginning of 2020, starting in 2024 and continuing until the present. Notably, 2023 was the most productive year (34 publications).

Since 1996, there have been a few fluctuating publications until 2019, such as Lawler and Elliott (1996); Andreoua and Zombanakisb (2000); Huang *et al*. (2001); Andreou and Zombanakis (2011); Strohmeier and Piazza (2015); Melancon (2018); Tambe *et al*. (2019); Vinichenko *et al* (2019). The popularity of artificial intelligence in human resources began to increase starting from the beginning of 2020, with the study by Joamets and Chochia (2020); Wang and Lei (2020), and continued to increase continuously until the present time (2024). Generally speaking, research in this area will rise in the upcoming years based on the current year's pattern. It is important to note that, in contrast to previous years, there was not an anticipated rise in publications (17 publications) in 2024. This is due to the fact that the study's Scopus search was conducted on June 20, 2024, and as a result, there is still time to increase the number of publications in other months.

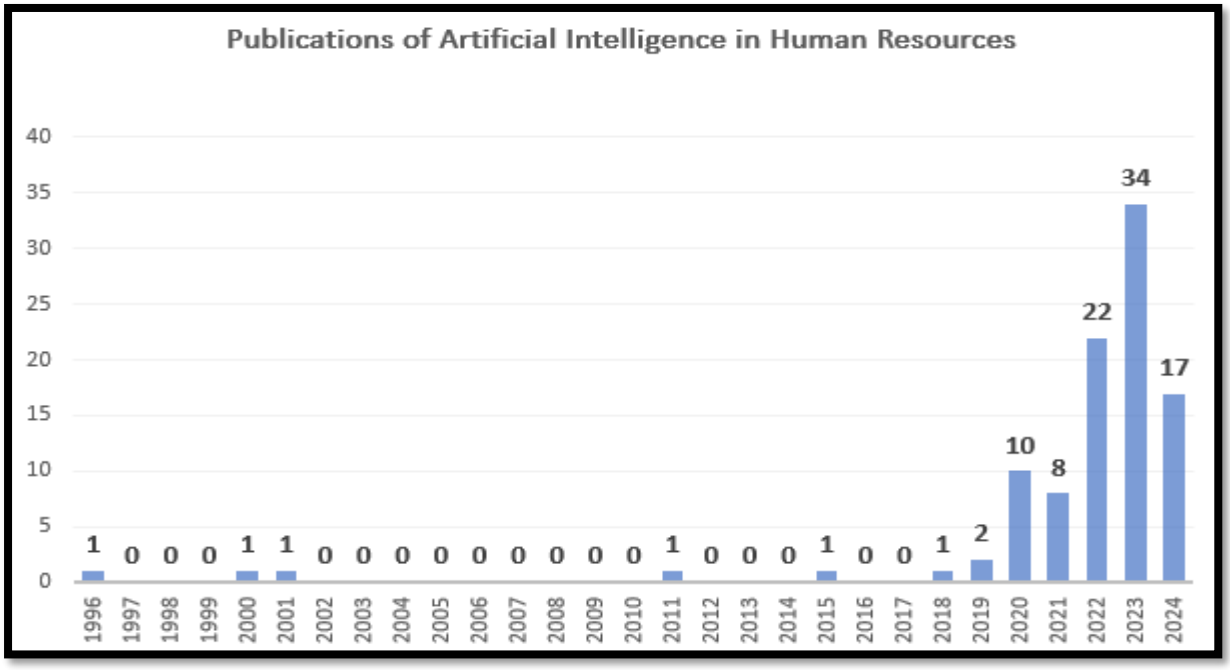

Figure 1: Publication of Artificial Intelligence in Human Resources from 1996 to 2024

Prominent Authors, Organisations, and Countries of Artificial Intelligence in Human Resources

Prominent authors in the Artificial Intelligence in Human Resources field are listed in the table along with their total 2 publications (TP) and total citations (TC). With 430 citations, each of Valery Yakubovich, Prasanna Tambe, and Peter Cappelli has one highly referenced

publication. With two publications accumulating 346 citations, Vijay Pereira stands out. Each of the authors—Demetris Vrontis, Michael Christofi, Anna Makrides, Shlomo Tarba, and Eleni Trichina—has one publication with 335 citations. Bruno S. Sergi and Elena G. Popkova both have one publication with 247 citations. With two articles, Soumyadeb Chowdhury has received 157 citations in total. Amelie Abadie, Sudeshna Bhattacharya, Prasanta Dey, Sian Joel-Edgar, Oscar Rodriguez-Espindola, and Linh Truong are other renowned authors with just one article apiece; they have together received about 156 citations. Each of Stefan Strohmeier and Franca Piazza has one publication with 105 citations. This information demonstrates the authors' significant contributions to the study and advancement of artificial intelligence in human resources.

Moreover, table 2 highlights key organizations in AI for Human Resources, listing their total publications (TP) and citations (TC). Essec Business School (France), the National Bureau of Economic Research (USA), and Wharton School (USA) each have one highly cited publication (430 citations). The University of Birmingham (UK), Neoma Business School (France), and the University of Nicosia (Cyprus) each have one publication with 335 citations. Other notable institutions include Harvard University (USA), the Moscow State Institute of International Relations (Russia), and the University of Messina (Italy), each with one publication and 247 citations. TBS Business School has significant contributions from its campuses in France and Morocco. Universities in the UK, Germany, Bahrain, and the USA are among the other contributors; their influential articles highlight their contributions to the advancement of AI in HR.

The table, which includes information on total publications (TP) and total citations (TC), highlights notable nations on the subject of artificial intelligence in human resources. With 19 publications and 971 citations, the United States leads the pack. France comes in second with 7 publications and 966 citations, and the UK is third with 12 publications and 807 citations. Three papers from Cyprus have 374 citations, while five publications from the Russian Federation have 292 citations. With 3 articles and 290 citations, Italy makes a substantial additional contribution. Germany (4 publications, 170 citations), India (14 publications, 184 citations), and Australia (9 publications, 233 citations) are a few other noteworthy nations. With one paper (156 citations) and twelve publications (150 citations), respectively, Morocco and China have made significant contributions. With several papers and more than 100 citations between them, Finland, Bahrain, and Turkey have also made contributions. Denmark, the United Arab Emirates, Malaysia, the Czech Republic, and Canada are among the other contributors, all of whom have produced significant research in the area.

Table 2
Prominent Authors, Organisations, and Countries of Artificial Intelligence in Human Resources

Author	**TP**	**TC**	**Institution**	**TP**	**TC**	**Country**	**TP**	**TC**
Cappelli, Peter	1	430	Essec Business School. France	1	430	United States	19	971
Tambe, Prasanna	1	430	National Bureau of Economic Research. USA	1	430	France	7	966
Yakubovich, Valery	1	430	Wharton School. USA	1	430	United Kingdom	12	807
Pereira, Vijay	2	346	University of Birmingham. UK	1	335	Cyprus	3	374
Christofi, Michael	1	335	Neoma Business School. France	1	335	Russian Federation	5	292
Makrides, Anna	1	335	University of Nicosia. Cyprus	1	335	Italy	3	290
Tarba, Shlomo	1	335	Harvard University. USA	1	247	Australia	9	233
Trichina, Eleni	1	335	Moscow State Institute of International Relations. Russian Federation	1	247	India	14	184
Vrontis, Demetris	1	335	University of Messina. Italy	1	247	Germany	4	170
Popkova, Elena G.	1	247	Tbs Business School. France	2	157	Morocco	1	156
Sergi, Bruno S.	1	247	tbs Business School. Morocco	1	156	China	12	150
Chowdhury, Soumyadeb	2	157	Humanities Northeastern University. UK	1	156	Finland	2	128
Abadie, Amelie	1	156	Aston University. UK	1	156	Bahrain	3	111
Bhattacharya, Sudeshna	1	156	Saarland University. Germany	1	105	Antonio	1	101
Dey, Prasanta	1	156	University of Texas at San Antonio. USA	1	101	Turkey	7	97
Joel-Edgar, Sian	1	156	Applied Science University. Bahrain	1	89	Denmark	1	78
Rodriguez-Espindola, Oscar	1	156	Harvard Business School. USA	1	85	United Arab Emirates	5	56
Truong, Linh	1	156	University of Maryland. USA	1	85	Malaysia	7	50
Piazza, Franca	1	105	University of Manchester. UK	1	78	Czech Republic	1	40
Strohmeier, Stefan	1	105	University of Aberdeen. UK	1	78	Canada	4	39

Note(s): TC = total citations, **TP** = total number of article(s) publications

Most Influential Journals (MIJ) on Artificial Intelligence in Human Resources

The most important journals in Artificial Intelligence in Human Resources are listed in table 3, together with information on their total publications (TP), total citations (TC), and distribution of publications across different periods. One item from the California Management Review stands out, receiving 430 citations between 2011 and 2020. Two articles from 2021–2024 in the International Journal of Human Resource Management have 375 citations between them. Leading the pack with five articles and 321 citations from 2021–2024 is the Human Resource Management Review. From 2011 to 2020, there is a single highly cited publication from both the Intelligent Systems Reference Library and the Journal of Intellectual Capital (247 and 105 citations, respectively).

Between 2021 and 2024, the International Journal of Information Management Data Insights had four publications with 105 citations while the International Journal of Manpower had four with 133 citations. Between 2011 and 2020, the International Journal of Scientific and Technology Research published two articles that received 103 citations. A few more noteworthy journals are the Journal of Enterprise Information Management (one publication, 58 citations), Sustainability (Switzerland) (five publications, 71 citations), and Strategic Management Journal (one publication, 85 citations). There is only one article from 1996–2000 in the Journal of Management, and it has 43 citations. Notable contributions have come from Defense and Peace Economics, Production Planning and Control, Ethics and Information Technology, Journal of Knowledge Management, Management Review Quarterly, and Management Research Review. There is only one publication in the International Journal of Human Resources Development and Management from 2001 to 2010 that has eighteen citations. The aforementioned data demonstrates the varied and significant contributions made by these journals to the field of AI research in human resources.

Table 3
Most influential journals (MIJ) on Artificial Intelligence in Human Resources

Journal	TP	TC	1996-2000	2001-2010	2011-2020	2021-2024
California Management Review	1	430	-	-	1	-
International Journal of Human Resource Management	2	375	-	-	-	2
Human Resource Management Review	5	321	-	-		5
Journal of Intellectual Capital	1	247	-	-	1	
International Journal of Manpower	4	133	-	-		4
Intelligent Systems Reference Library	1	105	-	-	1	
International Journal of Information Management Data Insights	2	105	-	-	-	4
International Journal of Scientific and Technology Research	2	103	-	-	2	-
Strategic Management Journal	1	85	-	-	1	
Sustainability (Switzerland)	5	71	-	-		5
Journal of Enterprise Information Management	1	58	-	-	-	1
Journal of Management	1	43	1	-	-	-
Management Research Review	1	39	-	-	1	-
Journal of Knowledge Management	1	32	-	-	-	1
Management Review Quarterly	1	30	-	-	-	1
Production Planning and Control	1	26	-	-	-	1
Ethics And Information Technology	1	24	-	-	-	1
Defence and Peace Economics	2	19	1	-	1	
Information Sciences Letters	1	18	-	-	-	1
International Journal of Human Resources Development and Management	1	18	-	1	-	-
Note(s): TC = total citations, **TP** = total number of article(s) publications						

Most Influential Articles (MIA) on Artificial Intelligence in Human Resources

Human resources (HR) have been greatly impacted by artificial intelligence (AI) in recent years, as shown by a number of noteworthy papers that have affected the conversation in this area. First off, with 430 citations, Tambe's groundbreaking 2019 paper "Artificial intelligence in human resources management: Challenges and A path forward" is notable for its significant influence. The changing field of AI applications in HR is discussed in this essay, with an emphasis on the difficulties encountered and possible solutions. "Artificial intelligence, robotics, advanced technologies, and human resource management: a systematic review," written by Vrontis (2022), synthesizes the body of research on these topics and has 335 citations. This systematic review offers a thorough summary, emphasizing the field's accomplishments and consequences.

Popkova (2020) investigated "Industrial 4.0: Human capital and AI." Divergence and convergence in Russian social entrepreneurship," garnered 247 citations. This study looks at

the effects of AI on the development of human capital in the context of industry 4.0, with a focus on social entrepreneurship environments in Russia. With 156 citations, Chowdhury's (2023) paper "Unlocking the value of artificial intelligence in human resource management through AI capability framework" made a substantial contribution. This paper presents an AI capacity framework designed with HRM in mind, with the goal of maximizing the use of AI in organizational strategy.

"Artificial intelligence techniques in human resource management," Strohmeier's conceptual inquiry from 2015, has received 105 citations. This article explores the theoretical foundations and possible uses of AI methods, particularly in HR settings. Together, these articles shed light on a variety of aspects of AI integration in HR, from theoretical investigations and systematic reviews to useful frameworks and empirical research. They stress the revolutionary potential of AI in improving productivity, reducing prejudices, and encouraging creativity in HR procedures, but they also draw attention to the opportunities and continuing obstacles in this quickly developing subject.

Other studies have significantly contributed to highlighting the use of artificial intelligence in human resources, such as; Votto (2021); Abdeldayem (2020); Choudhury (2020); Arslan (2022); Qamar (2021); Rodgers (2023); Prikshat (2023); Lawler (1996); Pan (2023); Suseno (2022); Kshetri (2021); Odugbesan (2023); Mohamed (2022); Kaushal (2023); and Basu (2023). Table 4 shows the twenty most influential articles in the field of using artificial intelligence in the field of human resources.

Table 4
The most influential articles (MIA) on Artificial Intelligence in Human Resources

Author(s)	**Title**	**TC**
Tambe (2019)	"Artificial intelligence in human resources management: Challenges and A path forward"	430
Vrontis (2022)	"Artificial intelligence, robotics, advanced technologies and human resource management: a systematic review"	335
Popkova (2020)	"Human capital and AI in industry 4.0. Convergence and divergence in social entrepreneurship in Russia"	247
Chowdhury (2023)	"Unlocking the value of artificial intelligence in human resource management through AI capability framework"	156
Strohmeier (2015)	"Artificial intelligence techniques in human resource management—A conceptual exploration"	105
Votto (2021)	"Artificial Intelligence in Tactical Human Resource Management: A Systematic Literature Review"	101
Abdeldayem (2020)	"Trends and opportunities of artificial intelligence in human resource management: Aspirations for public sector in Bahrain"	89
Choudhury (2020)	"Machine learning and human capital complementarities: Experimental evidence on bias mitigation"	85

Arslan (2022)	"Artificial intelligence and human workers interaction at team level: a conceptual assessment of the challenges and potential HRM strategies"	78
Qamar (2021)	"When technology meets people: the interplay of artificial intelligence and human resource management"	58
Rodgers (2023)	"An artificial intelligence algorithmic approach to ethical decision-making in human resource management processes"	50
Prikshat (2023)	"AI-Augmented HRM: Literature review and a proposed multilevel framework for future research"	45
Lawler (1996)	"Artificial intelligence in HRM: An experimental study of an expert system"	43
Pan (2023)	"An interdisciplinary review of AI and HRM: Challenges and future directions"	41
Suseno (2022)	"Beliefs, anxiety and change readiness for artificial intelligence adoption among human resource managers: the moderating role of high-performance work systems"	40
Kshetri (2021)	"Evolving uses of artificial intelligence in human resource management in emerging economies in the global South: some preliminary evidence"	39
Odugbesan (2023)	"Green talent management and employees' innovative work behavior: the roles of artificial intelligence and transformational leadership"	32
Mohamed (2022)	"Improving Efficiency and Effectiveness of Robotic Process Automation in Human Resource Management"	30
Kaushal (2023)	"Research perspective of artificial intelligence and HRM: a bibliometric study"	30
Basu (2023)	"Artificial Intelligence–HRM Interactions and Outcomes: A Systematic Review and Causal Configurational Explanation"	29
Note(s): TC = total citations		

Science Mapping

Science mapping examines the relationships between the many research components. The examination centers on the conceptual and structural interactions among research participants (Baker *et al*., 2021; Donthu *et al*., 2021). Among the techniques employed in science mapping are citation analysis, co-citation analysis, bibliographic coupling, co-word analysis, and co-authorship analysis. When combined with network analysis, these techniques are crucial for illuminating the intellectual and bibliometric structures of the research area (Tunger & Eulerich, 2018; Baker *et al*., 2020; Donthu *et al*., 2021). Co-citation analysis, co-occurrence bibliometrics, and bibliographic coupling will all be used in this study.

Knowledge Foundations of Artificial Intelligence in Human Resources through Co-Citation Analysis

The semantic linkages of co-cited references are revealed by co-citation analysis, demonstrating the fundamental understanding of a subject (Donthu *et al*., 2021). Figure 2 displays the co-citation map of references that the papers in the review corpus cited at least 5 times.

Figure 2 shows 3 main Clusters including 26 research as the following: Cluster 1 includes 11 research represented in red nodes, and they have highly cited the works of a particular area of artificial intelligence in human resources, this research was done by Behil, Bondarouk, Chowdhury, Hooper, Huang, Jia, Lawler, Rodney, Strohmeier, Tambe, and Vrontis. Cluster 2 includes 9 research represented in green nodes, and they have highly cited the works of a particular area of artificial intelligence in human resources, this research was done by Ahmed, Albert, Braganza, Frey, Jarrahi, Maity, Pillai, Van, and Wilson. Cluster 3 includes 6 research represented in blue nodes and they have highly cited the works of a particular area of artificial intelligence in human resources, this research was done by Angrave, Bankins, Barro, Haenlein, Leicht, and Upadhyay.

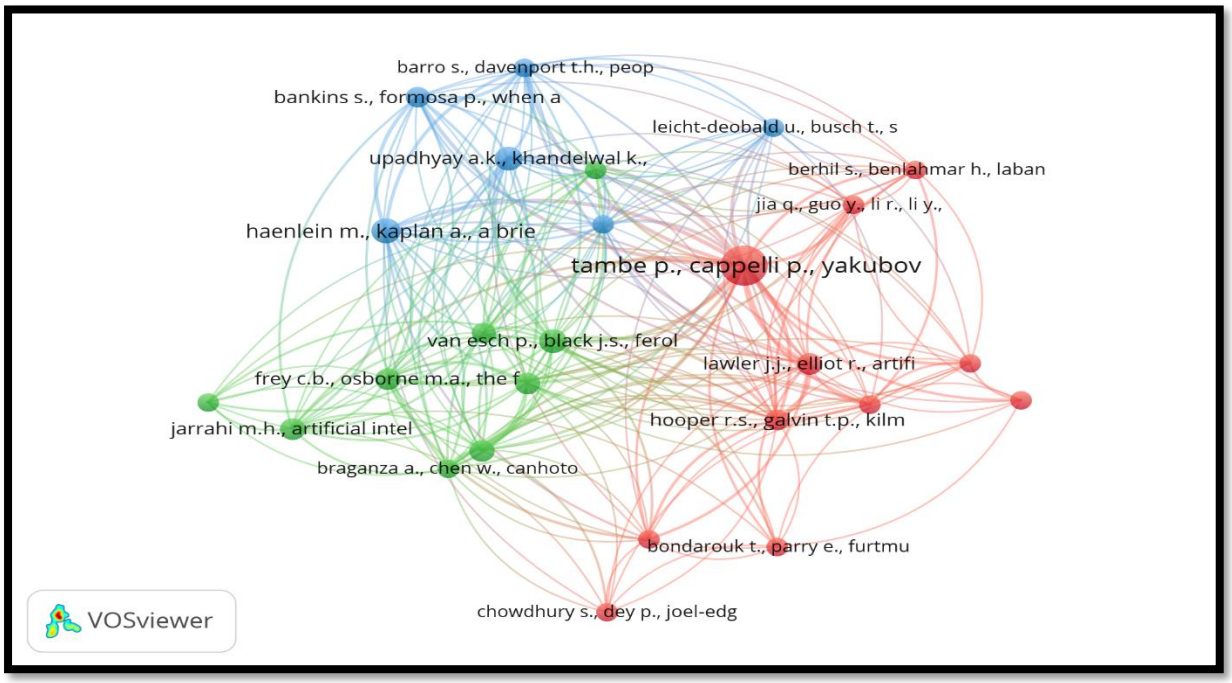

Figure 2: Co-citation of references cited by articles on Artificial Intelligence in Human Resources

Note(s): The degree of local citations is indicated by the size of the nodes; larger nodes show a higher intensity of local citations. Co-citations are represented by the link between nodes. The degree of co-citations between nodes is indicated by the connection size; larger links denote higher intensities of co-citations.

Thematic and Influence Structure Analysis through Bibliographic Coupling

Table 5 uses bibliographic coupling to present the artificial intelligence subject clusters in human resources research. Artificial intelligence (AI), human resource management (HRM), complementarity between HRM and human capital, and AI competency framework are the

four theme groupings. Table 5 also displays the articles that have the biggest impact on each cluster.

- **Cluster 1: Artificial Intelligence**

The extensive application and interplay of AI in HR contexts is the main emphasis of this cluster. With 78 citations, Arslan (2022) explores the relationship between AI and human workers at the team level, emphasizing promising HRM solutions and highlighting problems. With 45 citations, Prikshat (2023) provides an overview of the literature on AI-augmented HRM and suggests a multilevel structure for further study. Rodgers (2023) investigates, with 50 citations, how AI algorithms might be used to make ethical decisions in HRM procedures. With 430 citations, Tambe's (2019) work—which discusses the difficulties and potential applications of AI for HRM—is the most cited in this cluster.

- **Cluster 2: Human Resource Management**

The integration of AI into HRM processes and its wider consequences are examined in this cluster. With 89 citations, Abdeldayem (2020) examines AI trends and potential in HRM within Bahrain's governmental sector. A bibliometric analysis with thirty citations on the views of AI and HRM research is given by Kaushal (2023). With 32 citations, Odugbesan (2023) explores the functions of AI and transformational leadership in green talent management and creative work practices. Qamar (2021) collects 58 citations for his discussion on the relationship between AI technology and HRM practices.

- **Cluster 3: Human Capital Complementarity**

The convergence of AI and human capital is the main topic of this cluster. Reviewing AI-HRM interactions and results, Basu (2023) receives 29 citations while offering a causal configurational explanation. With 85 citations, Choudhury (2020) provides experimental proof on how machine learning can reduce biases in human resource management. With 41 citations, Pan (2023) provides an interdisciplinary overview of AI and HRM, addressing issues and potential paths forward.

- **Cluster 4: AI Capability Framework**

The frameworks for improving AI capabilities in HRM are the main focus of this cluster. Chowdhury (2023) presents a framework of AI capabilities for HRM value unlocking, which has 156 citations. Kshetri (2021) looks at how AI is being used in HRM in emerging nations in the global South. She gathers preliminary data and gets 39 citations for her research.

These thematic groupings illustrate the various and noteworthy contributions—from interaction and ethical issues to strategic frameworks and human capital integration—to the study and application of AI in HR.

Table 5
Thematic Clusters of Artificial Intelligence in Human Resources

Theme	Author(s)	Title	TC
Cluster-1 (4items) Artificial Intelligence	Arslan (2022)	"Artificial intelligence and human workers interaction at team level: a conceptual assessment of the challenges and potential HRM strategies"	78
	Prikshat (2023)	"AI-Augmented HRM: Literature review and a proposed multilevel framework for future research"	45
	Rodgers (2023)	"An artificial intelligence algorithmic approach to ethical decision-making in human resource management processes"	50
	Tambe (2019)	"Artificial intelligence in human resources management: Challenges and A path forward"	430
Cluster-2 (4 items) Human Resource Management	Abdeldayem (2020)	"Trends and opportunities of artificial intelligence in human resource management: Aspirations for public sector in Bahrain"	89
	Kaushal (2023)	"Research perspective of artificial intelligence and HRM: a bibliometric study"	30
	Odugbesan (2023)	"Green talent management and employees' innovative work behavior: the roles of artificial intelligence and transformational leadership"	32
	Qamar (2021)	"When technology meets people: the interplay of artificial intelligence and human resource management"	58
Cluster-3 (3items) Human Capital Complementarity	Basu (2023)	"Artificial Intelligence–HRM Interactions and Outcomes: A Systematic Review and Causal Configurational Explanation"	29
	Choudhury (2020)	"Machine learning and human capital complementarities: Experimental evidence on bias mitigation"	85
	Pan (2023)	"An interdisciplinary review of AI and HRM: Challenges and future directions"	41
Cluster-4 (2items) AI Capability Framework	Chowdhury (2023)	"Unlocking the value of artificial intelligence in human resource management through AI capability framework"	156
	Kshetri (2021)	"Evolving uses of artificial intelligence in human resource management in emerging economies in the global South: some preliminary evidence"	39
Note(s): TC = total citations			

Thematic trends of Artificial Intelligence in Human Resources through co-occurrence Analysis by Authors' keywords

Building upon the foundations and subjects offered by co-citation analysis and bibliographic coupling, we use co-occurrence analysis to examine theme trends in artificial intelligence in

studies conducted in human resources. Co-occurrence analysis makes use of the authors' keywords. To determine the thematic evolution of artificial intelligence research topics in human resources concerns that appear in at least three papers in our review corpus, those keywords are put through a chronological filter.

Figure 3 shows the trend of artificial intelligence research topics in human resources between 1996 and 2024. Figure 3 shows the main topics most common during the period from 1996 to 2024 that were discussed in previous studies about artificial intelligence in human resources such as artificial intelligence, human resources management, employee engagement, talent management, and machine learning.

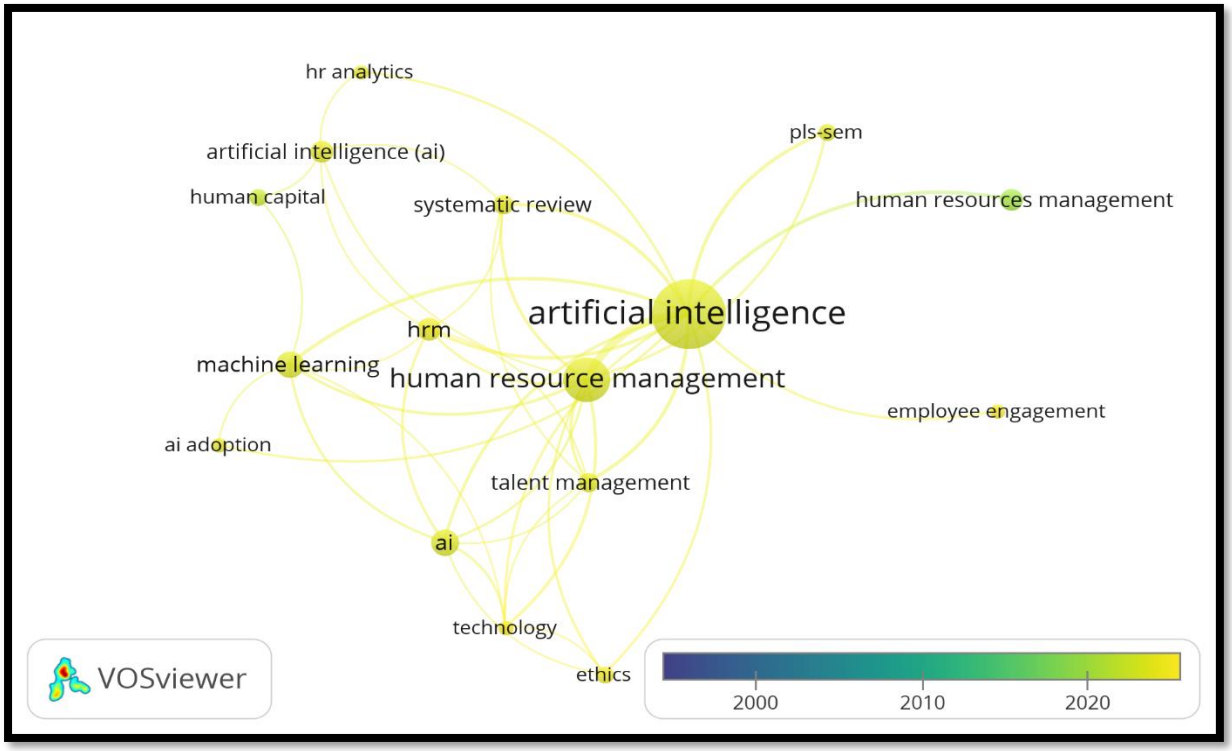

Figure 3: Influential topics in the “period of 1996–2024”

Future Research Directions

Based on the current analysis, future research directions for researchers interested in artificial intelligence (AI) applications in human resources (HR) can be suggested, such as: Improving AI Integration in HR Practices. Future studies should examine in-depth how AI technology might be practically integrated into a range of HR tasks, including hiring, performance reviews, and employee engagement. Creating increasingly complex algorithms that can comprehend the subtleties of human behavior and produce forecasts and insights that are more accurate is one way to do this. A second topic that might be considered is fair and ethical AI in HR. E Future study should focus on the justice and ethical implications of AI applications in HR. Researchers need to look for ways to reduce prejudice in AI algorithms so that all workers and job applicants are treated fairly. Examining the moral issues pertaining to data protection, responsibility, and transparency in AI-driven HR procedures is part of this.

Third, the development of AI capability frameworks is a crucial field. Future research must focus on creating thorough AI capabilities frameworks tailored to HR functions. The

competencies needed to manage and apply AI technology in HR departments should be outlined in these frameworks. Researchers should concentrate on determining the abilities and know-how HR experts require to fully utilize AI, as well as methods for ongoing education and training in this field. Scholars may help build more ethical, significant, and effective AI applications in HR by concentrating on these future study paths. This will ultimately improve employee well-being and organizational performance.

Theoretical Contributions

The study shows that AI has an impact on HR that goes beyond automation, affecting personnel management and strategic decision-making. Scholars and researchers in this sector will find great value in the theoretical contributions of the present study on the application of artificial intelligence (AI) in human resources (HR). The following can be used to summarize these contributions: first, a thorough mapping of the field of AI-HR research, this study offers a comprehensive bibliometric analysis of AI in HR, encompassing works published between 1996 and 2024. The study provides a comprehensive academic landscape map by examining 99 papers from the Scopus database, emphasizing important authors, significant papers, well-known countries, and preeminent institutions. Researchers can pinpoint important areas of study, comprehend the development of research themes, and detect gaps in the body of literature thanks to this thorough mapping.

Secondly, this study offers recommendations for additional research. By focusing on topics including the useful integration of AI in HR practices, ethical issues, enhancing employee experience through AI, creating AI capacity frameworks, and doing cross-cultural comparisons, the study provides strategic guidance for future research initiatives. By laying out these paths, the study not only recognizes existing patterns but also foresees upcoming advancements and difficulties, giving academics a path to pursue and grow. To sum up, this research's theoretical contributions provide a solid framework, methodological recommendations, and a forward-looking viewpoint that, taken together, encourages and promotes further academic investigation into the application of AI in HR.

Limitations

Future studies should take into account a number of limitations with the current study on the application of artificial intelligence (AI) in human resources (HR), including the Limited Scope of Data. The study's data is limited to 99 papers that were obtained from the Scopus database. Although the database is extensive, it might not include all pertinent studies on AI in HR. There may be more information and conclusions in other databases and literary sources that were missed in this investigation. This constraint implies that future research should incorporate a wider range of literature. Future researchers can create studies that fill up these gaps and provide a more inclusive and thorough knowledge of AI's function in human resources by acknowledging these limitations.

Conclusion

An investigation into Artificial Intelligence (AI) in Human Resources (HR) is the aim of this study. The study conducted a bibliometric analysis of research works published between 1996 and 2024. Studying 99 papers taken from the Scopus database, the research uses bibliometric analysis with performance analysis and scientific mapping to look at co-authorship, co-occurrence, citation, bibliographic coupling, and co-citation analysis. Numerous scientific

publications, prolific writers, the most important papers, nations, and organizations were all analysed in the study. The performance analysis and science mapping of the study were conducted using VOSviewer. Numerous findings are presented by the studies. In specifics, 2023 was the most productive year with 34 articles, while the United States and France's Essec Business School are the two most influential countries and institutes, respectively. In a similar vein, the most cited article is "Artificial Intelligence in human resources management: Challenges and A path forward," and the most influential publication is "California Management Review." The four theme groupings that the authors identified are Artificial Intelligence, Human Resource Management, Human Capital Complementarity, and AI Capability Framework. These thematic clusters represent research on artificial intelligence in human resources. The study has significant implications since it provides guidance for future research and details the current status of artificial intelligence literature in human resources. It also suggests future paths of inquiry for this field of study. This research advances our knowledge of artificial intelligence in human resources literature mapping and performance analysis.

References

Abdeldayem, M. M., & Aldulaimi, S. H. (2020). Trends and opportunities of artificial intelligence in human resource management: Aspirations for public sector in Bahrain. *International Journal of Scientific and Technology Research*, *9*(1), 3867-3871.

Alkoud, S., & Qatamin, L. (2023a). The Benefits of Employing Global Virtual Teams in International Business. *International Business*, *13*(6), 2088-2101. Available at: http://dx.doi.org/10.6007/IJARBSS/v13-i6/17169

Alkoud, S., & Qatamin, L. (2023b). Hybrid Work in International Business: Challenges and Opportunities in light of Dual Factor Theory. *Social Sciences*, *13*(7), 1354-1371. Available at: http://dx.doi.org/10.6007/IJARBSS/v13-i7/17314

Alkoud, S., Zainudin, D., & Sarif, S. M. (2023a). Challenges, Barriers, and Obstacles Facing Virtual Teams: a Conceptual Study. Sciences, 13(4), 1473-1487. Available at: http://dx.doi.org/10.6007/IJARBSS/v13-i4/16723

Alkoud, S., Zainudin, D., & Sarif, S. M. (2023b). Exploring the Roles of Social Presence Practices in Enhancing Virtual Teams Performance in the Higher Education Sector in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, *13*(4), 1462-1473. Available at: http://dx.doi.org/10.6007/IJARBSS/v13-i4/16722

Andreou, A. S., & Zombanakis, G. A. (2011). Financial versus human resources in the Greek–Turkish arms race 10 years on: A forecasting investigation using artificial neural networks. *Defence and Peace Economics*, *22*(4), 459-469. Available at: https://doi.org/10.1080/10242694.2010.539858

Andreoua, A. S., & Zombanakisb, G. A. (2000). Financial versus human resources in the Greek-Turkish arms race: A forecasting investigation using artificial neural networks. *Defence and Peace Economics*, *11*(2), 403–426. Available at: https://doi-org.ezlib.iium.edu.my/10.1080/10430710008404956

Arslan, A., Cooper, C., Khan, Z., Golgeci, I., & Ali, I. (2022). Artificial intelligence and human workers interaction at team level: a conceptual assessment of the challenges and potential HRM strategies. *International Journal of Manpower*, *43*(1), 75-88. Available at: https://doi.org/10.1108/IJM-01-2021-0052

Askenazy, P., Thesmar, D., and Thoenig, M. (2006). On the relation between organizational practices and new technologies: The role of (time based) competition. The Economic Journal 116(508): 128–154. Available at: https://doi.org/10.1111/j.1468-0297.2006.01050.x

Badicu, A. (2022). Artificial Intelligence and Human Resources Management : A Bibliometric Analysis Artificial Intelligence and Human Resources Management : A Bibliometric Analysis. *Applied Artificial Intelligence*, *36*(01). Available at: https://doi.org/10.1080/08839514.2022.2145631

Baker, H. K., Kumar, S., & Pandey, N. (2020). A bibliometric analysis of Managerial Finance: A retrospective. Managerial Finance, 46(11), 1495–1517. Available at: https://doi.org/10.1108/MF-06-2019-0277

Baker, H. K., Kumar, S., & Pandey, N. (2021). Forty years of the Journal of Futures Markets: A bibliometric overview. Journal of Futures Markets. Available at: doi: 10.1002/fut.22211 (in press).

Basu, S., Majumdar, B., Mukherjee, K., Munjal, S., & Palaksha, C. (2023). Artificial intelligence–HRM interactions and outcomes: A systematic review and causal configurational explanation. *Human Resource Management Review*, *33*(1), 100893. Available at: https://doi.org/10.1016/j.hrmr.2022.100893

Ben Sedrine, S., Bouderbala, A., & Nasraoui, H. (2020). Leadership style effect on virtual team efficiency: trust, operational cohesion and media richness roles. Journal of Management Development, 40(5), 365–388. Available at: https://doi.org/10.1108/JMD-10-2018-0289

Bloom, N., Sadun, R., and Reenen, J. (2012). Americans do IT better: US multinational and the productivity miracle. The American Economic Review 102(1): 167–201. Available at: DOI: 10.1257/aer.102.1.167

Cam, A., Chui, M., & Hall, B. (2019). Global AI survey: AI proves its worth, but few scale impact. McKinsey & Co. Available at: https://www.mckinsey.com/featured-insights/ artificial-intelligence/global-ai-survey-ai-proves-itsworth- butfew-scale-impact

Choudhury, P., Starr, E., & Agarwal, R. (2020). Machine learning and human capital complementarities: Experimental evidence on bias mitigation. *Strategic Management Journal*, *41*(8), 1381-1411. Available at: https://doi.org/10.1002/smj.3152

Chowdhury, S., Dey, P., Joel-Edgar, S., Bhattacharya, S., Rodriguez-Espindola, O., Abadie, A., & Truong, L. (2023). Unlocking the value of artificial intelligence in human resource management through AI capability framework. *Human Resource Management Review*, *33*(1), 100899. Available at: https://doi.org/10.1016/j.hrmr.2022.100899

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of Business Research, 133(March), 285–296. Available at: https://doi.org/10.1016/j.jbusres.2021.04.070

Gao, P., Meng, F., Mata, M.N., Martins, J.M., Iqbal, S., Correia, A.B., Dantas, R.M., Waheed, A., Rita, X. and Farrukh, M. (2021). Trends and future research in electronic marketing: a bibliometric analysis of twenty years. Journal of Theoretical and Applied Electronic Commerce Research, Vol. 16 No. 5, pp. 1667-1679. Available at: https://doi.org/10.3390/jtaer16050094

Goyal, K. and Kumar, S. (2021). Financial literacy: a systematic review and bibliometric analysis. International Journal of Consumer Studies, Vol. 45 No. 1, pp. 80-105. Available at: https://doi.org/10.1111/ijcs.12605

Groff, M. L., Offringa, M., Emdin, A., Mahood, Q., Parkin, P.C. and Cohen, E. (2020), "Publication trends of pediatric and adult randomized controlled trials in general medical journals, 2005-2018: a citation analysis", Children, Vol. 7 No. 12, p. 293. Available at: https://doi.org/10.1111/ijcs.12605

Grzonka, D., Jakobik, A., Kołodziej, J., & Pllana, S. (2018). Using a multi-agent system and artificial intelligence for monitoring and improving the cloud performance and security. Future Generation Computer Systems, 86, 1106–1117. Available at: https://doi.org/10.1016/j.future.2017.05.046.

Hossain, M. R., Akhter, F., and Sultana, M. M. (2022), "SMEs in covid-19 crisis and combating strategies: a systematic literature review (SLR) and A case from emerging economy", Operations Research Perspectives, Vol. 9, 100222. Available at: doi:10.1016/j.orp.2022.100222.

Huang, L. C., Wu, P., Kuo, R. J., & Huang, H. C. (2001). A neural network modelling on human resource talent selection. International Journal of Human Resources Development and Management, 1(2-4), 206-219. Available at: https://doi.org/10.1504/IJHRDM.2001.001006

Jia, Q., Guo, Y., Li, R., Li, Y. and Chen, Y. (2018). A conceptual artificial intelligence application framework in human resource management", International Consortium for Electronic Business, Scopus, in Chang, F.-K., Li, E.Y. and Li, E.Y. (Eds), Proceedings of the International Conference on Electronic Business (ICEB), Vol. 2018, pp. 106-114. Available at: https://www.scopus.com/inward/record.uri?eid52-s2.0-85061925662&partnerID540&md555b8c7463a6202415e7d4c010ecee3ef0.

Joamets, K., & Chochia, A. (2020). Artificial intelligence and its impact on labour relations in Estonia. *Slovak Journal of Political Sciences*, *20*(2), 255-277. Available at: https://sjps.fsvucm.sk/index.php/sjps/article/view/136

Karatop, B., Kubat, C. and Uygun, €O. (2015), "Talent management in manufacturing system using fuzzy logic approach", Computers and Industrial Engineering, Vol. 86, pp. 127-136. Available at: doi: 10.1016/j. cie.2014.09.015.

Kaushal, N., & Ghalawat, S. (2023). Research perspective of artificial intelligence and HRM: a bibliometric study. *International Journal of Business Innovation and Research*, *31*(2), 168-196. Available at: https://doi.org/10.1504/IJBIR.2023.131432

Kong, H., Y. Yuan, Y. Baruch, N. Bu, X. Jiang, and K. Wang. 2021. Influences of Artificial Intelligence (AI) awareness on career competency and job burnout. International Journal of Contemporary Hospitality Management 33 (2):717–34. Available at: doi:10.1108/IJCHM-07-2020-0789.

Kshetri, N. (2020). Evolving uses of artificial intelligence in human resource management in emerging economies in the global South: some preliminary evidence. Management Research Review, 44(7), 970–990. Available at: https://doi.org/10.1108/MRR-03-2020-0168

Lawler, J. J., & Elliot, R. (1996). Artificial Intelligence in HRM: An Experimental Study of an Expert System. Journal of Management, 22(1), 85-111. Available at: https://doi-org.ezlib.iium.edu.my/10.1177/014920639602200104.

Lucia-Casademunt, A. M., Ariza-Montes, A., and Becerra-Alonso, D. (2013). Exploring emotional involvement in workplace by applying artificial neural networks: European study. Actual Problems of Economics, Scopus, Vol. 143 No. 5, pp. 376-385.

Madakam, S., Holmukhe, M., & Jaiswal, D. K. (2019). The future digital workforce: Robotic process automation (RPA). Journal of Information Systems and Technology Management, 16(1), 1–17. Available at: https://doi.org/10.4301/ S1807-1775201916001.

Melancon, M. (2018). The USPTO's Sisyphean Plan: Increasing Manpower Will Not Match Artificial Intelligence's Inventive Capabilities. Tex. L. Rev. 96, (4), 873 – 889.

Michailidis, M. P. 2018. The challenges of AI and blockchain on HR recruiting practices. Cyprus Review 30 (2):169–80.

Mishra, D., Gunasekaran, A., Papadopoulos, T. and Dubey, R. (2018). Supply chain performance measures and metrics: a bibliometric study. Benchmarking: An International Journal, Vol. 25 No. 3, pp. 932-967. Available at: https://doi.org/10.1108/BIJ-08-2017-0224

Mohamed, S. A., Mahmoud, M. A., Mahdi, M. N., & Mostafa, S. A. (2022). Improving efficiency and effectiveness of robotic process automation in human resource management. *Sustainability*, *14*(7), 3920. Available at: https://doi.org/10.3390/su14073920

Mysirlaki, S., & Paraskeva, F. (2020). Emotional intelligence and transformational leadership in virtual teams: lessons from MMOGs. Leadership and Organization Development Journal, 41(4), 551–566. Available at: https://doi.org/10.1108/LODJ-01-2019-0035

Odugbesan, J. A., Aghazadeh, S., Al Qaralleh, R. E., & Sogeke, O. S. (2023). Green talent management and employees' innovative work behavior: the roles of artificial intelligence and transformational leadership. *Journal of knowledge management*, *27*(3), 696-716. Available at: https://doi.org/10.1108/JKM-08-2021-0601

Oswald, F.L., Behrend, T.S., Putka, D.J. and Sinar, E. (2020), "Big data in industrial-organizational Psychology and human resource management: forward progress for organizational research and practice", Annual Review of Organizational Psychology and Organizational Behavior,Scopus, Vol. 7, pp. 505-533. Available at: doi: 10.1146/annurev-orgpsych-032117-104553.

Paesano, A. (2021). Artificial Intelligence and creative activities inside organizational behavior. International Journal of Organizational Analysis. ahead-of-p(ahead-of-print. Available at: doi: 10.1108/ IJOA-09-2020-2421.

Pan, Y., & Froese, F. J. (2023). An interdisciplinary review of AI and HRM: Challenges and future directions. *Human Resource Management Review*, *33*(1), 100924. Available at: https://doi.org/10.1016/j.hrmr.2022.100924

Pan, Y., F. Froese, N. Liu, Y. Hu, and M. Ye. (2022). The adoption of artificial intelligence in employee recruitment: The influence of contextual factors. International Journal of Human Resource Management 33 (6):1125–47. Available at: doi:10.1080/09585192.2021.1879206.

Pillai, R. (2020). Adoption of Artificial Intelligence (AI) for talent acquisition in IT/ITeS organizations. Benchmarking: An International Journal 27 (9):2599–629. Available at: doi:10. 1108/BIJ-04-2020-0186.

Popkova, E. G., & Sergi, B. S. (2020). Human capital and AI in industry 4.0. Convergence and divergence in social entrepreneurship in Russia. *Journal of Intellectual Capital*, *21*(4), 565-581. Available at: https://doi.org/10.1108/JIC-09-2019-0224

Prikshat, V., Islam, M., Patel, P., Malik, A., Budhwar, P., & Gupta, S. (2023). AI-Augmented HRM: Literature review and a proposed multilevel framework for future

research. *Technological Forecasting and Social Change*, *193*, 122645. Available at: https://doi.org/10.1016/j.techfore.2023.122645

Qamar, Y., Agrawal, R. K., Samad, T. A., & Chiappetta Jabbour, C. J. (2021). When technology meets people: the interplay of artificial intelligence and human resource management. Journal of Enterprise Information Management, 34(5), 1339–1370. Available at: https://doi.org/10.1108/JEIM-11-2020-0436

Qatamin, L., & Alkoud, S. (2023b). Concept, Theory, and Classification of Electronic-HRM: A Conceptual Study. Available at: http://dx.doi.org/10.6007/IJARBSS/v13-i7/17173

Rodgers, W., Murray, J. M., Stefanidis, A., Degbey, W. Y., & Tarba, S. Y. (2023). An artificial intelligence algorithmic approach to ethical decision-making in human resource management processes. *Human Resource Management Review*, *33*(1), 100925. Available at: https://doi.org/10.1016/j.hrmr.2022.100925

Rykun, E. (2019). Artificial Intelligence in HR Management–What Can We Expect? The Boss Magazine. Available at: https://thebossmagazine.com/ai-hr-management/ .

Seal, A. (2019). The most interesting AI statistics of 2019. Available at: https://www.vxchnge.com/blog/ai-statistics.

Sexton, R. S., McMurtrey, S., Michalopoulos, J. O., and Smith, A. M. (2005). Employee turnover: a neural network solution. Computers and Operations Research, Vol. 32 No. 10, pp. 2635-2651. Available at: https://doi.org/10.1016/j.cor.2004.06.022

Strohmeier, S. and Piazza, F. (2013), "Domain driven data mining in human resource management: a review of current research", Expert Systems with Applications, Vol. 40 No. 7, pp. 2410-2420. Available at: doi: 10.1016/j.eswa.2012.10.059.

Strohmeier, S., and Piazza, F. (2015). Artificial intelligence techniques in human resource management—a conceptual exploration. Intelligent Systems Reference Library, Springer Science and Business Media Deutschland GmbH, Scopus, Vol. 87, p. 172. Available at: doi: 10.1007/978-3-319- 17906-3_7.

Suominen, A., Li, Y., Youtie, J., and Shapira, P. (2016). A bibliometric analysis of the development of next generation active nanotechnologies. Journal of Nanoparticle Research, Vol. 18 No. 9, pp. 1-18.

Suseno, Y., Chang, C., Hudik, M., & Fang, E. S. (2022). Beliefs, anxiety and change readiness for artificial intelligence adoption among human resource managers: the moderating role of high-performance work systems. *The International Journal of human resource management*, *33*(6), 1209-1236.

Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial intelligence in human resources management: Challenges and a path forward. *California Management Review*, *61*(4), 15-42. Available at: https://doi.org/10.1177/0008125619867910

Tunger, D., & Eulerich, M. (2018). Bibliometric analysis of corporate governance research in German-speaking countries: Applying bibliometrics to business research using a custom-made database. Scientometrics, 117(3), 2041–2059.

Vinichenko, M. V., Makushkin, S. A., Rybakova, M. V., Chulanova, O. L., Kuznetsova, I. V., & Lobacheva, A. S. (2019). Using natural and artificial intelligence in the talent management system. *International Journal of Recent Technology and Engineering*, *8*(3), 7417-7423.

Votto, A. M., Valecha, R., Najafirad, P., & Rao, H. R. (2021). Artificial intelligence in tactical human resource management: A systematic literature review. *International Journal of Information Management Data Insights*, *1*(2), 100047. Available at: https://doi.org/10.1016/j.jjimei.2021.100047

Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A., & Trichina, E. (2022). Artificial intelligence, robotics, advanced technologies and human resource management: a systematic review. *The international journal of human resource management*, *33*(6), 1237-1266.

Wang, X. L., Lei, N., & Hou, Y. Z. (2020). How does human resource department's client relationship management affect sustainable enterprise performance-in the context of artificial intelligence?. *International Journal of Technology Management*, *84*(1-2), 50-69. Available at: https://doi.org/10.1504/IJTM.2020.112139

Wong, L. W., Leong, L. Y., Hew, J. J., Tan, G. W. H., & Ooi, K. B. (2020). Time to seize the digital evolution: Adoption of blockchain in operations and supply chain management among Malaysian SMEs. International Journal of Information Management, 52, Article No. 101997. Available at: https://doi.org/10.1016/j.ijinfomgt.2019.08.005.

Xin, O. K., Wider, W., & Ling, L. K. (2022). Human Resource Artificial Intelligence Implementation and Organizational Performance in Malaysia. *Asia-Pacific Social Science Review*, *22*(3), 18–37.

Xin, O. K., Wider, W., & Ling, L. K. (2022). Human Resource Artificial Intelligence Implementation and Organizational Performance in Malaysia. Asia-Pacific Social Science Review, 22(3), 18–37.

Zhang, H., Yuan, W., and Jiang, H. (2012), “Performance evaluation on human resource management of China’s commercial banks based on improved Bp neural networks”, International Journal of Advancements in Computing Technology, Vol. 4 No. 11, pp. 304-310. Available at: doi: 10.4156/ijact.vol4. issue11.32.

Zupic, I., and Cater, T. (2015). Bibliometric methods in management and organization. Organizational Research Methods, Vol. 18 No. 3, pp. 429-472. Available at: https://doi.org/10.1177/1094428114562629