

Artificial Intelligence in Human Resource Recruitment: A Bibliometric Analysis of Global Research Trends (2015–2025)

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Received: 14/04/2026

Accepted: 22/04/2026

Published: 05/06/2026

Abstract:

This study provides a comprehensive bibliometric analysis of global research trends in the application of artificial intelligence in human resource recruitment over the period (2015–2025). Data were retrieved from the Scopus database, yielding a total of 1,345 scientific publications, which were analyzed using VOSviewer and Bibliometrix tools, while Zotero was employed for reference management, the findings reveal a rapid growth in scientific output, reaching 352 publications in 2025, reflecting the increasing interest of researchers and institutions in this field. The journal *International Journal of Organizational Analysis* recorded the highest number of publications (15 articles). In terms of authorship, Mizouni, Rabeb; Otrok, Hadi; and Singh, Shakti emerged as the most prolific contributors. Additionally, developed countries—particularly China and the United States—dominate both scientific production and research impact in this domain. the findings reveal a rapid growth in scientific output, reaching 352 publications in 2025, reflecting the increasing interest of researchers and institutions in this field. The journal *International Journal of Organizational Analysis* recorded the highest number of publications (15 articles). In terms of authorship, Mizouni, Rabeb; Otrok, Hadi; and Singh, Shakti emerged as the most prolific contributors. Additionally, developed countries—particularly China and the United States—dominate both scientific production and research impact in this domain. The most highly cited study, “Artificial Intelligence in Human Resources Management: Challenges and A Path Forward” (2019), received 948 citations. Moreover, the most influential publications are predominantly conceptual papers and systematic reviews, indicating that the field is still in the stage of theoretical development. This study contributes to the literature by offering a comprehensive mapping of the knowledge structure in this field, identifying key research gaps, and proposing future research directions to support both scholars and policymakers.

Key Words: artificial intelligence; human resources; recruitment; bibliometric analysis.

JEL Classification: M51, O33, C80, M15

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Introduction:

Over recent decades, the business environment has undergone radical transformations across all sectors as a result of significant and rapid advancements in artificial intelligence technologies. This has led to a re-evaluation of many administrative functions, including human resources management. Recruitment has become one of the areas most affected by these changes, with organisations moving away from traditional methods based on human judgement in selecting candidates for vacant roles, towards intelligent systems that rely on algorithms and predictive analytics to make recruitment decisions. Artificial intelligence has emerged as a strategic tool that contributes to improving the efficiency and effectiveness of recruitment processes, through the use of technologies such as machine learning and natural language processing to analyse CVs, assess candidates, and predict their suitability for job requirements. These technologies have also helped to reduce the time and cost associated with recruitment processes, whilst enhancing the accuracy of decisions and minimising human bias, despite ongoing debate regarding algorithmic bias and the ethical implications of using such systems.

In parallel with this practical shift, academic output in the field of artificial intelligence in human resources recruitment has seen significant growth, particularly following the COVID-19 pandemic, which accelerated the adoption of digital solutions and remote working. This expansion has led to increased academic interest in studying AI applications in recruitment, resulting in a diverse and rapidly accumulating body of knowledge that is difficult to track and analyse using traditional methods.

Hence the importance of bibliometric analysis as an effective methodological tool that allows for the quantitative and qualitative evaluation of scientific output through the analysis of publication patterns, collaboration networks, and the evolution of research topics. This type of analysis also provides a comprehensive overview of the knowledge structure within the field, helping to identify prevailing research trends, uncover scientific gaps, and anticipate future trajectories.

Although there has been an increase in studies addressing the applications of artificial intelligence in recruitment, there is a clear gap in comprehensive bibliometric studies that provide an integrated analysis of scientific output in this field over a specific period of time. This study therefore aims to fill this gap by conducting a bibliometric analysis of research published between 2015 and 2025, with the aim of exploring research trends and developments and identifying the most prominent contributors to this scientific field.

Research Question: Based on the above, this study seeks to address the following research question and sub-questions: **What are the key trends and research developments in the use of artificial intelligence in human resources recruitment between 2015 and 2025 ?**

Sub-questions:

- What is the trend in the annual volume of scientific publications in the field of artificial intelligence in human resource recruitment during the period 2015–2025?

- Which countries, research institutions and universities are the most productive in AI research in human resource recruitment during the period 2015–2025?
- Who are the most productive and influential researchers in AI research in human resource recruitment during the period 2015–2025?
- Which are the most widely published scientific journals and the most cited articles on the topic of artificial intelligence in recruitment during the period (2015–2025)?
- What are the most common research topics and emerging research trends in the field of artificial intelligence in recruitment during the period (2015–2025)?.

I. Literature Review:

Recent literature has seen growing interest in the study of artificial intelligence in human resources recruitment, which is defined as the use of technologies such as machine learning and natural language processing to support or automate recruitment and selection decisions. In this context, numerous studies have focused on highlighting the functional role of this variable in improving recruitment efficiency. Studies have shown that artificial intelligence contributes to improving the quality of candidate selection, reduces time and cost, and supports decision-making ((**Khan, Faisal, and Thomas 2024**) ,(Nain and Shankar Shyam 2024)).

Other studies have also shown that intelligent systems, such as decision support systems and matching algorithms, are capable of analysing big data and predicting the best candidates for recruitment with greater accuracy than traditional methods (**Strang and Sun 2022**), (**Aydin and Turan 2023**) In this context, the recruitment efficiency variable is understood as the organisation's ability to achieve the best match between job requirements and candidate characteristics at the lowest cost and in the shortest time, a finding confirmed by empirical studies using machine learning models that significantly improved recruitment accuracy (**Al-Quhfa et al. 2024**), (**Aydin and Turan 2023**).

Other studies have also shown that artificial intelligence enhances the candidate experience through real-time interaction (chatbots) and continuous assessment (**Elmohandes and Marghany 2024**) ,(Horodyski 2023), which indicates that its impact extends to include behavioural and psychological dimensions in recruitment. On the other hand, the literature has addressed important variables such as fairness and transparency in recruitment, which aims to ensure the absence of bias and equal opportunities among candidates. Studies have shown that the use of artificial intelligence may help reduce human bias, but at the same time may result in algorithmic bias if the data used is insufficient and unbalanced (**Capasso et al. 2025**) ,(Rigotti and Fosch-Villaronga 2024), Furthermore, polarising algorithms may negatively impact organisational diversity by indirectly excluding certain groups (**Alexander III et al. 2025**).

In this context, research has emphasised the importance of combining artificial intelligence with human judgement to ensure a balance between efficiency and fairness(**Zheng et al. 2024**), (**Soleimani et al. 2025**) ,(Tambe, Cappelli, and Yakubovich 2019)

In addition to the emergence of technical and regulatory risks associated with the application of AI, which include issues such as privacy, data security, and over-reliance on digital systems, studies have confirmed that the successful application of AI in recruitment requires a strategic framework that takes ethical and regulatory aspects into account **(Gupta, Mishra, and NULL 2022), (Paramita, Okwir, and Nuur 2024)** In the same vein, some studies have focused on developing intelligent models to detect fraud in online recruitment, demonstrating high accuracy using machine learning techniques **(Sofy, Khafagy, and Badry 2023), (Ullah and Jamjoom 2023)** , **(Nanath and Olney 2023)**, thereby enhancing the reliability of the digital recruitment environment.

As for the variable of artificial intelligence adoption in human resources (AI Adoption), studies have shown that the adoption of these technologies is linked to achieving competitive advantages and improving the organisation's reputation, particularly when integrated with strategic HRM practices **(Kot et al. 2021), (Chen 2023)**

Studies have also shown that user perception—whether among HR staff or candidates—plays a decisive role in the successful implementation of these technologies, as acceptance is influenced by factors such as ease of use, trust, and transparency Horodyski 2023)

At the methodological level, scientometric analysis has emerged as a tool for understanding developments in this field; it is defined as the use of quantitative methods to analyse scientific output and identify research trends. Studies have shown that the use of tools such as VOSviewer enables researchers to identify key themes such as intelligent decision-making, organisational performance, and innovation, as well as to analyse scientific collaboration networks **(Malik et al. 2025)**, Based on the above, it is clear that previous studies have addressed multiple variables, including: artificial intelligence in recruitment, recruitment efficiency, fairness, risk, technology adoption, and bibliometric analysis; however, most of them have addressed these variables separately, thereby revealing a research gap: the need for an integrative bibliometric study linking these variables within a comprehensive analytical framework covering the period 2015–2025, whilst addressing the limited analysis of temporal development, applied ethical dimensions, and the contexts of developing countries. This is what the present study seeks to achieve.

II. Research Methodology

This study aims to analyse academic output in the field of artificial intelligence applications in human resource management during the period 2015–2025, by identifying research trends, analysing scientific collaboration networks, extracting key themes and keywords, as well as identifying research gaps and proposing future directions.

1.Data Sources and Screening:

The Scopus database was used as the primary source for collecting data relating to the topic of artificial intelligence in human resource recruitment between 2015 and 2025. This database was selected due to its size and global recognition, as well as its

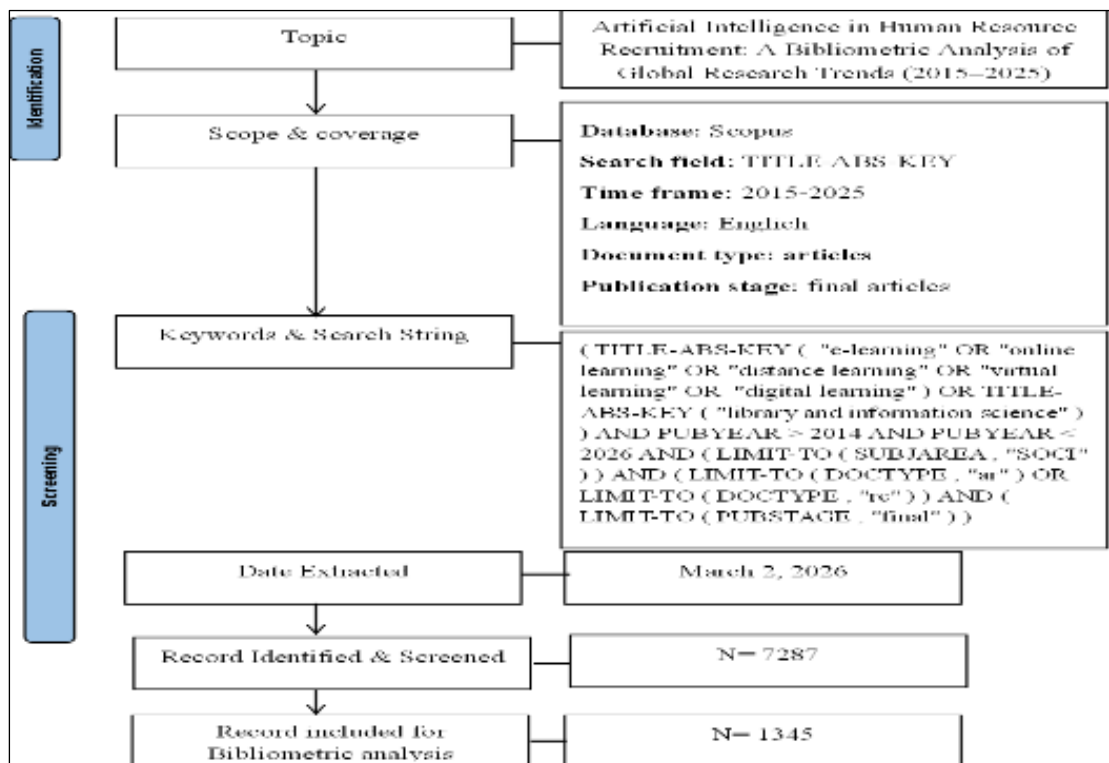
comprehensive coverage and the accurate data it provides to organisations, countries and researchers.

The Scopus database was searched using the title, abstract and keywords, applying the following search query:

TITLE-ABS-KEY (('artificial intelligence' OR 'machine learning') AND ('human resource management' OR 'HRM' OR 'HR analytics' OR "recruitment")) AND PUBYEAR > 2014 AND PUBYEAR < 2026 AND (LIMIT-TO (SRCTYPE , 'j')) AND (LIMIT-TO (PUBSTAGE , 'final')) AND (LIMIT-TO (SUBJAREA , 'BUSI') OR LIMIT-TO (SUBJAREA , 'COMP') OR LIMIT-TO (SUBJAREA , "SOCI")) AND (LIMIT-TO (DOCTYPE , 'ar')) AND (LIMIT-TO (LANGUAGE , 'English'))

After running this search query in the Scopus database, 7,287 publications were retrieved (articles, reviews, books, conference proceedings, etc. etc.), and following a multi-stage filtering process, 1,345 articles published between 2015 and 2025 were retrieved, in the field of (Computer Science – Business Administration and Accounting), with English as the sole language, where the data was collected on 2 March 2026, as illustrated in the following figure.

Figure 1: «PRISM diagram for selecting study data»



source: Kavitha, K and others, Artificial Intelligence in Higher Education: A Bibliometric Approach, European Journal of Educational Research, V 13, N1, 2024

1.1. Research tools:

To analyse the data obtained from the Scopus database, several programmes were utilised, such as VOSviewer, to analyse indicators such as the number of publications, citations, and annual growth rate to identify the most studied topics, as well as collaboration relationships between authors, keywords, and patterns of international collaboration; and the R Studio-based Biblioshiny programme, which provides highly detailed information. Excel was also used to organise the data and prepare graphs, in addition to using Zotero for reference management.

III. Bibliometric analysis of the data:

The use of artificial intelligence has emerged in many fields, one of the most significant being human resources recruitment in a new way that differs entirely from the traditional method, where judgement and decision-making rest solely with humans.

1. Background information:

The table below presents basic information regarding the topic of artificial intelligence in human resource management, obtained using the Biblioshiny programme, based on the Scopus database.

Table 1: « Descriptive statistics »

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2015:2025
Sources (Journals, Books, etc)	549
Documents	1198
Annual Growth Rate %	42.78
Document Average Age	3.09
Average citations per doc	30.2
References	137444
DOCUMENT CONTENTS	
Keywords Plus (ID)	5988
Author's Keywords (DE)	3708
AUTHORS	
Authors	3909
Authors of single-authored docs	112
AUTHORS COLLABORATION	
Single-authored docs	122
Co-Authors per Doc	3.81
International co-authorships %	31.89
DOCUMENT TYPES	
article	1198

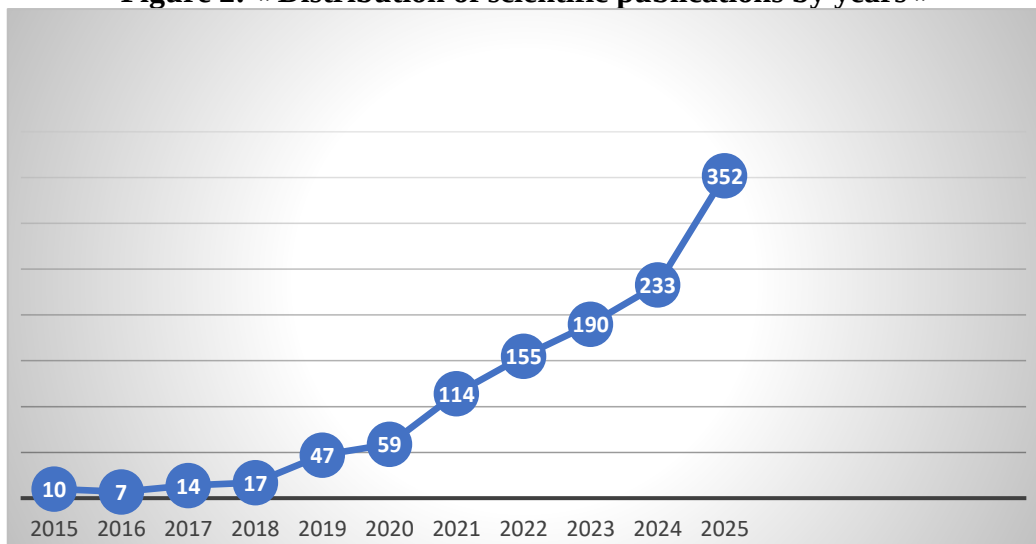
Source: Compiled by a researcher using Scopus and data from the Biblioshiny programme

A descriptive analysis of the Scopus database over the period (2015–2025) an accelerating scientific dynamic in the field of artificial intelligence in human resource management, as the sample comprises 1,198 articles published in 549 scientific sources, which indicates the widespread coverage of this topic in multidisciplinary journals, and also shows a high annual growth rate (42.78%) indicates that this field is undergoing rapid expansion and a transition towards research maturity. Furthermore, the average age of the documents is 3.09 years, which indicates the recency of the knowledge and the growing contemporary interest in the subject, whilst the average number of citations per document (30.2) points to significant scientific impact. In terms of content, 5,988 keywords (Keywords Plus) and 3,708 author keywords were recorded, indicating the diversity and richness of research topics. As for scientific output, 3,909 researchers contributed to this field, with a limited number of individual studies (only 122 documents), compared to a high average number of authors per study (3.81), which reflects the predominance of collaborative work. The rate of international collaboration stood at 31.89%, indicating an average level of research internationalisation. Overall, these indicators reveal a modern, rapidly growing, collaborative research field with multidimensional knowledge.

2. Analysis of trends in the annual volume of scientific publications in the field of artificial intelligence in human resource management during the period (2015–2025)

Both the table and the figure show the temporal development of scientific publications on the topic of artificial intelligence in human resource management between 2015 and 2025, based on data obtained from the Scopus database and using Excel to prepare the charts and graphs.

Figure 2: « Distribution of scientific publications by years »



Source: Compiled by the researcher based on the Scopus database and Excel

We can see from the table and figure a very rapid growth in the number of scientific publications in the field of artificial intelligence in human resource management

between 2015 and 2025, from 10 publications in 2015 to 352 in 2025, This indicates significant interest in this field, as well as a clear transition from the foundational stage to the stage of maturity and growth.

Analysis of the data reveals that the period spanning 2015 to 2018 represents the first or foundational phase, during which the number of publications was relatively low, reaching 10 publications in 2015. The number of publications then fell in 2016 to 7, before beginning a gradual rise to 14 publications in 2017, then 17 publications in 2018. The limited level of scholarly output during this period indicates the novelty of the subject and a lack of interest in the use of artificial intelligence applications in the recruitment process.

However, from 2019 onwards, there was a significant surge in interest in the use of artificial intelligence in the recruitment process, with the number of publications rising to 47 in 2019 and 59 in 2020, This indicates the emergence of interest in this topic among researchers, particularly with the spread of the COVID-19 pandemic, which forced organisations to adopt digital solutions in recruitment, in addition to the impact of digital transformation and the increasing use of machine learning and data analytics in human resource management.

Meanwhile, the most recent phase, spanning 2021–2025, has seen significant growth, with the number of publications rising from 114 in 2021 to 155 in 2022, then to 190 in 2023, and reaching 233 in 2024, peaking in 2025 with 352 publications. This demonstrates that the volume of publications has more than tripled over the last five years alone, which is a strong indicator of the maturity of this field and its transformation into a key research focus.

This development shows that the topic of artificial intelligence in recruitment is no longer a new and emerging topic, but has become a mature and rapidly expanding research topic, driven by technological development and growing regulatory needs. This growth also reflects the existence of significant research opportunities, particularly in analysing modern trends, exploring qualitative gaps, and linking scientific output to practical applications.

3. Analysis of the results for the countries, research institutions and universities with the highest scientific output and contribution to research on artificial intelligence in human resources recruitment during the period (2015–2025)

3.1. Analysis of the countries contributing most to research on artificial intelligence in human resources recruitment.

The table shows the 20 countries associated with AI research in human resource management during the period (2015–2025), with this data obtained from the Scopus database and analysed using VOSviewer and Excel.

Table2: Countries contributing most to research on artificial intelligence in human resource management

Label	cluster	Links	TLS	TP	TC	CPP
China	4	44	169	226	6182	27.354
United states	6	44	167	209	9567	45.7751
India	1	36	85	154	4272	27.7403
United kingdom	3	43	152	95	6841	72.0105
Australia	5	29	81	55	3106	56.4727
Germany	3	25	63	53	1890	35.6604
France	2	35	77	49	5283	107.8163
Saudi arabia	7	20	52	46	882	19.1739
Italy	2	31	58	45	1788	39.7333
Spain	3	29	48	44	774	17.5909
Canada	4	17	29	38	1102	29
Malaysia	1	31	70	37	1679	45.3784
South korea	1	18	27	36	694	19.2778
Pakistan	7	23	52	34	912	26.8235
UAE	7	22	45	33	1248	37.8182
Turkey	1	20	24	30	447	14.9
Indonesia	1	16	21	26	252	9.6923
Morocco	2	6	9	25	904	36.16
Netherlands	3	22	35	25	813	32.52
Hong kong	4	12	36	23	1082	47.0435

Note: TLS = total link strength, TP = total publications, TC = total citations, CPP = citations per paper.

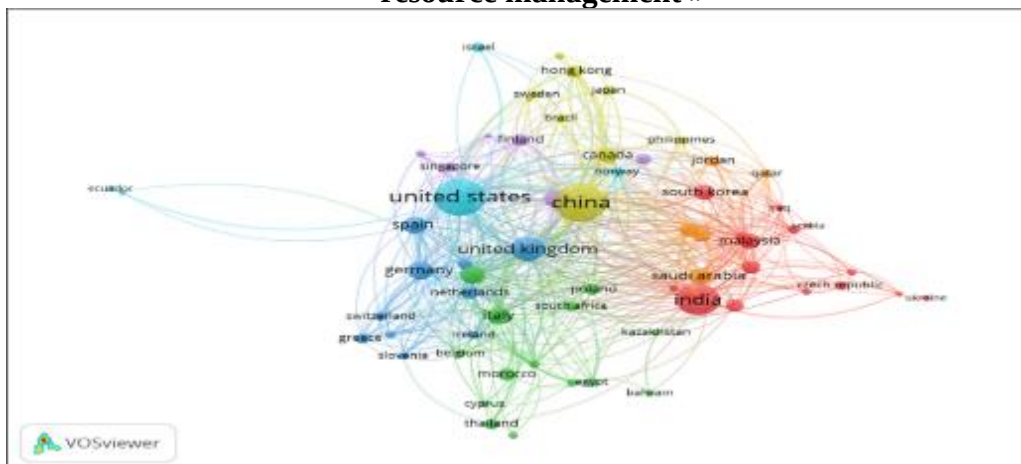
Source: Compiled by a researcher based on Scopus and Excel

The table shows that China and the United States top the list of countries with the highest scientific output and contribution to research on artificial intelligence in human resource management between 2015 and 2025, with China recording 226 publications and the United States recording 209 publications. Furthermore, the United States significantly outperformed China in terms of scientific impact, with a total of 9,567 citations and a high average citation count of 45.77, compared to 6,182 citations for China. The United Kingdom also stood out as a notable case; despite its modest output of 95 publications, it achieved a high scientific impact with an average citation count of 72.01, reflecting the quality of the published research. On the other hand, India ranked third in terms of output (154 publications) with an average impact, indicating a focus on quantity rather than quality. Countries such as France and Australia also demonstrated strong qualitative performance, with France recording the highest average citation count (107.81) despite a lower number of publications (49), indicating a profound scientific impact. Developing countries such as Saudi Arabia (46 publications), the UAE with 33 publications, and Malaysia with 37 publications on the research map, but their impact remains moderate or limited. Overall, the analysis reveals the dominance of developed countries in terms of the

quality and impact of scientific research, contrasted with a notable quantitative expansion in developing countries, reflecting a gap between output and impact in this field.

The concentration of scientific output in the field of artificial intelligence applications in human resource recruitment in both China and the United States can be attributed to the presence of well-developed research ecosystems, characterized by substantial investment in research and development, advanced technological infrastructure, strong academic institutions, and extensive international collaboration networks. In contrast, many developing countries face structural constraints, including limited funding, brain drain, and restricted access to research resources, which are reflected in their comparatively lower scientific contribution and impact in this field. Nevertheless, it is observed that some developing countries are experiencing quantitative growth in the number of scientific publications; however, this growth is not consistently accompanied by a corresponding level of scientific impact, thereby revealing a gap between research productivity and quality in this domain.

Figure 3: « Network of international collaboration in AI research on human resource management »



Source: Prepared by the researcher using Scopus data and visualised using VOSviewer

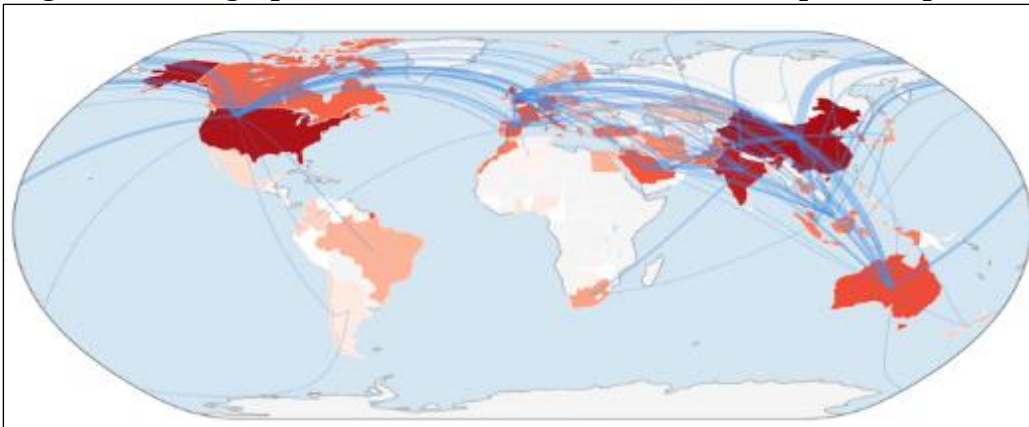
From the figure, we can see that the VOSviewer network diagram reflects patterns of international collaboration in the field of artificial intelligence in human resource management, revealing an interconnected knowledge structure characterised by dominant research hubs and multipolar collaboration networks, where both the United States and China appear as central nodes (Central Nodes), occupying a central position in the network with a high density of links. This corresponds with scientific output data, which shows that China recorded 226 publications and the United States 209 publications, in addition to a particularly high scientific impact for the United States. The United Kingdom also emerges as a strategic link connecting several research groups, reflecting its role in fostering international cooperation despite its moderate output of 95 publications.

On the other hand, the network reveals the existence of clear geographical/research clusters; an Asian cluster led by China and comprising countries such as Malaysia, South Korea, and India, which in turn recorded 154 publications with particularly strong links to developing countries. In contrast, a European cluster is formed, led by Germany, Italy and Spain, characterised by intense internal collaboration and notable research quality. A third cluster also emerges, comprising Middle Eastern countries such as Saudi Arabia and the UAE, which, despite their recent contributions (46 and 33 publications respectively), have begun to gradually integrate into the global network.

Furthermore, the Total Link Strength indicates that some countries are distinguished not only by their output but also by their ability to build effective research partnerships, which enhances the dissemination and integration of knowledge. It is also noted that peripheral countries, such as some in Eastern Europe and Latin America, have limited links, indicating a gap in global research integration.

Overall, this analysis reveals that the landscape of scientific research in this field does not depend solely on the volume of output, but is also shaped by the dynamics of international collaboration, where central countries play a leading role in setting the research agenda, whilst developing countries seek to strengthen their presence through collaborative networks, reflecting a global knowledge system that is unequal but in the process of expansion and integration.

Figure 4: « Geographical distribution of international cooperation patterns »



Source: Compiled by the researchers using Scopus and Biblioshiny outputs

The geographical pattern of international cooperation in the field of artificial intelligence in human resource management reflects an unequal distribution of scientific output, centred around a limited number of global research powers. Both the United States and China emerge as major hubs of scientific activity, characterised by high colour intensity and extensive international linkages. This reflects the large volume of output and high scientific impact confirmed by quantitative data. It is also evident that Europe, particularly the United Kingdom, Germany and France, represents a strong secondary hub characterised by internal integration and cross-border collaboration.

Asia also emerges as a dynamic region led by China and India, with clear extensions towards countries such as Malaysia and South Korea, reflecting an accelerating expansion in scientific output and regional cooperation. Australia also emerges as an important hub linking Asia and the Western world, thereby strengthening its position within the global network. In the Middle East, countries such as Saudi Arabia and the UAE stand out as emerging participants seeking to strengthen their scientific presence through international partnerships, although the density of links remains lower compared to developed countries.

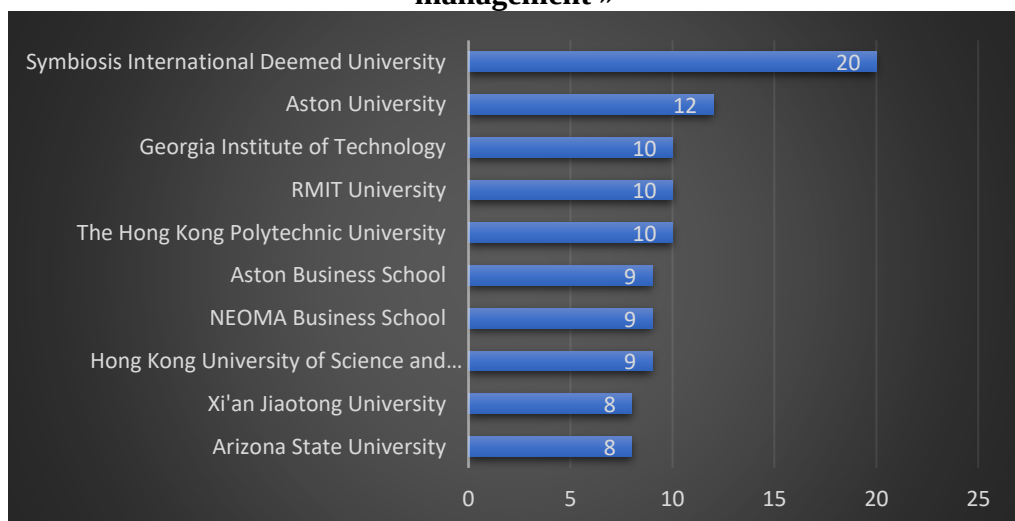
On the other hand, the map reveals a relative weakness in the contribution of Africa and Latin America, where many countries appear in pale colours with limited connections, indicating a gap in integration within the global research network. The dense connecting lines between continents also illustrate that international cooperation is a key element in knowledge production in this field, particularly between North America, Asia and Europe.

Overall, this map confirms that scientific research in this field is characterised by a global yet unbalanced nature, with developed countries dominating centres of production and influence, whilst developing countries rely more heavily on international cooperation to strengthen their presence, reflecting a global knowledge structure that is both centralised and interconnected

3.2 Analysis of the most productive institutions in AI research on human resource management during the period (2015–2025)

Figure 5 shows the distribution of the 10 most productive institutions in terms of scientific publications in the field of artificial intelligence in human resource management between 2015 and 2025, based on data from Scopus and Excel.

Figure 5: « Leading research institutions in AI research in human resource management »



Source: Prepared by the researcher based on the Scopus database and Excel

The results of the analysis of data from 10 research institutions reveal a pattern of relative institutional excellence, led by Symbiosis International University in India, which took the lead by recording the highest scientific output (20

publications), ahead of long-established institutions in developed countries. This shift reflects a gradual redistribution of scientific power in this field, where leadership is no longer the exclusive preserve of Western universities but now includes institutions in developing countries. Despite this distinction, the contribution of leading institutions remains relatively limited in terms of total output, indicating the absence of institutional dominance and the existence of an open, competitive research environment. The geographical distribution also reflects a multipolar landscape, with institutions from Asia, Europe and North America sharing similar roles in knowledge production, which underscores the global and interdisciplinary nature of this field.

4. Analysis of the most productive and influential researchers in AI research on human resource management during the period (2015–2025).

The table shows the most prominent researchers and authors in the field of artificial intelligence in human resource management during the period (2015–2025), based on the number of scientific publications and the number of citations during this period, using the Scopus database and Excel.

Table 3: « Most productive and influential authors »

label	cluster	Links	TLS	TP	TC	CPP
Mizouni, Rabeb	1	3	13	5	68	13.6
Otrok, Hadi	1	3	13	5	68	13.6
Singh, Shakti	1	3	13	5	68	13.6
Abououf, Menatalla	1	3	9	3	45	15

Note: TLS = total link strength, TP = total publications, TC = total citations, CPP = citations per paper.

Source: Compiled by the researcher based on Scopus and Excel

Analysis of the table reveals that the most productive and influential researchers in the field of artificial intelligence in human resource management during the period (2015–2025) exhibit a research pattern based on intensive collaboration within small, interconnected research groups. Mizouni, Rabeb, Otrok, Hadi and Singh, Shakti top the list of researchers in terms of output, each contributing 5 scientific publications with a total of 68 citations and an average of 13.6 citations per study, reflecting moderate and stable scientific impact. The researcher Abououf, Menatalla appears with a relatively lower output of 3 publications, but achieved a higher average citation count (15), indicating greater quality and relative impact of the published works.

In terms of the nature of co-authorship relationships, the link indicators (3 links) and the strength of connectivity (13 for the top three and 9 for the fourth researcher) reveal the existence of relatively closed research collaboration networks, where researchers work within limited but cohesive teams, often within the same institution or on joint projects. Furthermore, the fact that all these researchers belong to the same cluster (Cluster 1) reinforces the hypothesis of a specialised research community that engages in intensive internal knowledge exchange.

Overall, this pattern suggests that scientific output in this field does not rely on dominant individual researchers, but rather on collaborative research teams that collectively contribute to the advancement of knowledge. It also reflects that scientific impact is linked not only to the number of publications, but also to the quality and continuity of collaboration, which is consistent with the interdisciplinary nature of this research field.

5. Analysis of the most widely published scientific journals and the most cited articles on the topic of artificial intelligence in recruitment during the period 2015–2025

5.1. Analysis of the most productive scientific journals in the field of artificial intelligence in recruitment during the period (2015–2025)

The table shows the 10 scientific journals that have contributed most to the literature on artificial intelligence in recruitment during the period (2015–2025), based on the Scopus database and Excel.

Table 4: « Most productive scientific journals »

Label	cluster	Links	TLS	TP	TC	CPP
International journal of organizational analysis	2	1	1	15	309	20.6
Cogent business and management	4	1	1	8	116	14.5
Technology in society	1	1	1	8	642	80.25
Personnel review	1	1	2	7	142	20.2857
Administrative sciences	2	1	1	5	31	6.2
Ethics and information technology	1	5	6	5	397	79.4
International journal of advanced trends in computer science and engineering	3	2	2	5	97	19.4
International journal of information management data insights	3	2	2	5	417	83.4
Information technology and people	1	1	1	4	155	38.75
International journal of scientific and technology research	2	3	3	4	209	52.25

Note: TLS = total link strength, TP = total publications, TC = total citations, CPP = citations per paper.

Source: Compiled by the researcher based on Scopus and Excel

The results of the analysis of scientific journals reveal a clear discrepancy between scientific output and research impact, as the most prolific journals do not correspond to the most influential ones. The International Journal of Organizational Analysis recorded the highest number of publications (15 articles), yet its impact

remained average compared to multidisciplinary journals such as *Technology in Society* and the *International Journal of Information Management: Data Insights*, with citation counts of 642 and 417 respectively, which achieved the highest average citation counts (80.25 and 83.4) respectively, despite relatively lower output. This pattern reflects the interdisciplinary nature of the field, where the most influential knowledge emerges at the intersection of artificial intelligence with broader fields such as ethics and information systems; network connectivity indicators also point to a central role for certain journals in shaping the intellectual landscape, particularly those addressing ethical and organisational dimensions.

5.2 Analysis of the most cited articles in the field of artificial intelligence in recruitment during the period (2015–2025)

The table shows the 10 most cited articles in the literature on artificial intelligence in recruitment during the period (2015–2025), based on the Scopus database and Excel.

Table 5: « Most cited articles »

Title	Year	Source title	Cited by
Artificial intelligence in human resources management: Challenges and A path forward	2019	California Management Review	948
Incentive Mechanism for Reliable Federated Learning: A Joint Optimization Approach to Combining Reputation and Contract Theory	2019	IEEE Internet of Things Journal	896
Artificial intelligence, robotics, advanced technologies and human resource management: a systematic review	2022	International Journal of Human Resource Management	808
Unlocking the value of artificial intelligence in human resource management through AI capability framework	2023	Human Resource Management Review	694
Reliable Federated Learning for Mobile Networks	2020	IEEE Wireless Communications	566
Influences of the industry 4.0 revolution on the human capital development and consumer behavior: A systematic review	2020	Sustainability (Switzerland)	536
A Review on Fairness in Machine Learning	2022	ACM Computing Surveys	504
The Potential of Generative Artificial Intelligence Across Disciplines: Perspectives and Future Directions	2025	Journal of Computer Information Systems	461
Work-from-anywhere: The productivity effects of geographic flexibility	2021	Strategic Management Journal	376
A systematic literature review on the impact of artificial intelligence on workplace outcomes: A multi-process perspective	2023	Human Resource Management Review	371

Source: Compiled by the researcher based on Scopus and Excel

An analysis of the most cited articles in the field of artificial intelligence in human resources management reveals a clear dominance of conceptual literature

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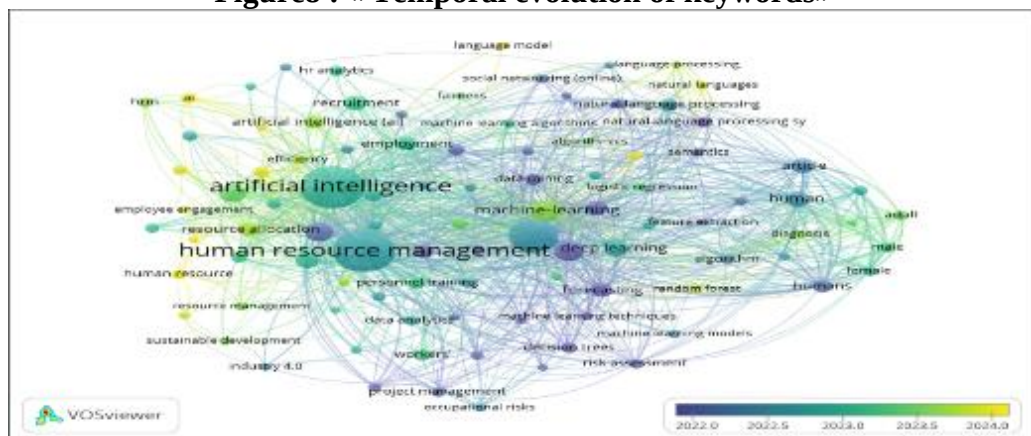
This map reflects the conceptual structure of the topic of artificial intelligence in recruitment between 2015 and 2025, through the interconnection of research concepts and their grouping into clusters. It is also clear that the field centres around two main nodes representing the core knowledge base, namely artificial intelligence and human resource management, confirming that scientific output revolves around the intersection of the technical and administrative dimensions.

The map reveals the presence of four main clusters. The first cluster, coloured red, focuses on the administrative-organisational axis, where concepts such as recruitment, decision making and HR analytics stand out, reflecting the research focus on improving the efficiency of recruitment and decision-making, whilst the second cluster, coloured green, focuses on the technical dimension, where concepts such as machine learning, deep learning and natural language processing take centre stage, which indicates a growing reliance on advanced artificial intelligence technologies in the analysis of human resources data.

The third cluster, coloured blue, reflects the practical and organisational dimension, featuring concepts such as project management, risk assessment and workers, indicating a shift in research from the theoretical level to practical applications within work environments, whilst the fourth cluster, coloured yellow, and focuses on analytical and demographic topics such as prediction, algorithm and humans, which reflect the use of predictive models to support recruitment decisions.

The strong interconnections between these clusters also highlight the importance of this subject, where computer science intersects with human resource management and the social sciences, and the emergence of modern concepts such as deep learning and data mining is noted, reflecting the field's evolution towards the use of more advanced analytical tools. Overall, this map reflects the field's transition from a focus on traditional concepts in human resource management to the adoption of approaches based on data and artificial intelligence, confirming its gradual maturation and the broadening of its research scope

Figure8 : « Temporal evolution of keywords»

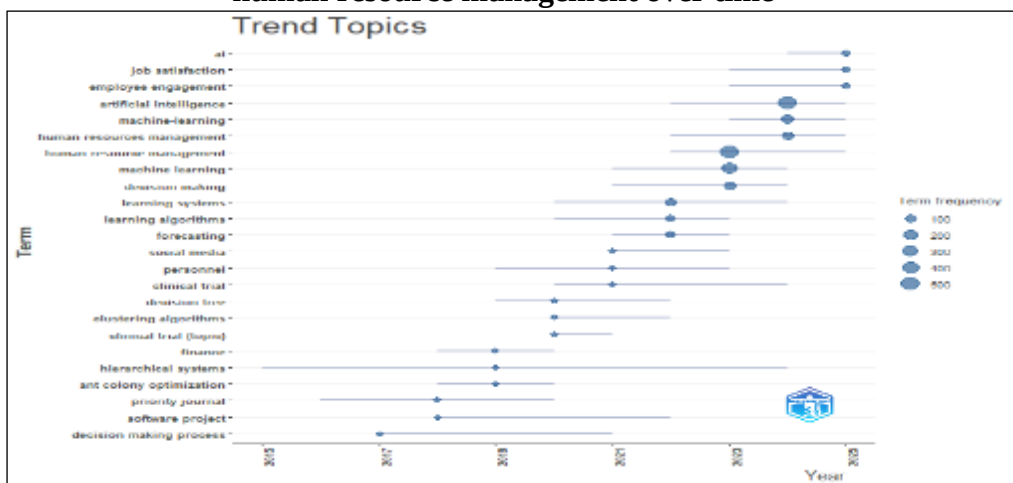


Source: Prepared by the researcher using Scopus data and VOSviewer outputs

The analysis presents a timeline of keyword evolution (Overlay Visualisation) in the field of artificial intelligence in human resource management, where the colour gradient (from blue to yellow) reflects the shift in research focus over time, from relatively older topics (2022) to more recent topics (2024). This map reveals a clear dynamic in the field's development, where traditional concepts intersect with emerging technical trends within an interconnected knowledge structure.

The results show that core concepts such as artificial intelligence and human resource management are positioned at the centre of the network in intermediate colours, indicating their continuity as key focal points over time, whilst a wide range of technical concepts such as machine learning and deep learning—which emerged at relatively early stages (tending towards blue)—are linked to them, reflecting the field's technical foundation phase. Conversely, a clear shift towards more recent concepts (in yellow) such as efficiency, employee engagement and resource allocation is evident, reflecting a shift in research focus towards maximising the practical value of artificial intelligence within organisations.

Figure 9: « Evolution of research topics in the field of artificial intelligence in human resource management over time »



Source: Compiled by the researchers using Scopus and Biblioshiny outputs

From the figure, we observe a shift in focus from traditional technical topics such as decision-making process and optimisation algorithms in the period (2015–2018), to analytical topics such as machine learning and forecasting during (2019–2022), whilst in recent years (2023–2025) a clear shift has emerged towards applied and strategic topics such as employee engagement, job satisfaction and artificial intelligence. It is also noted that the size of the circles reflects the increased frequency of these concepts, indicating a rise in their research significance. Overall, the figure reflects the maturity of the field and its transition from a technical focus to maximising the organisational and behavioural value of artificial intelligence in human resource management.

Discussion of Results

This study presents a comprehensive bibliometric analysis of global research trends in the field of artificial intelligence in human resource management from 2015 to 2025, analysing 1,345 using the Scopus database and the VOS viewer and Bibliometrix software. Among the most significant findings is the rise in the number of scientific publications, particularly after 2020, reaching 325 publications by 2025. This demonstrates the significant importance of using artificial intelligence technologies in human resource management, this development is consistent with previous studies which indicated that digital transformation, alongside the COVID-19 pandemic, has accelerated the adoption of AI technologies in recruitment practices. The results showed that AI has become a pivotal tool in improving the efficiency of recruitment processes by reducing time and costs and enhancing the quality of candidate selection. This is consistent with the findings of studies such as (Khan, Faisal, and Thomas 2024) (Nain and Shankar Shyam 2024). which confirmed the effectiveness of intelligent systems in supporting decision-making. Furthermore, the results highlight the growing role of machine learning and natural language processing technologies in analysing CVs and predicting candidate suitability, a finding supported by previous studies.

On the other hand, the results of the country analysis revealed the dominance of developed nations, particularly the United States, China and the United Kingdom, in scientific output and research impact. This is consistent with the literature, which indicates that these countries possess strong infrastructure and significant investment in artificial intelligence. Furthermore, some developing countries such as India, Saudi Arabia and the UAE have begun to strengthen their research presence, albeit with relatively less scientific impact, reflecting a gap between quantity and quality. As for scientific collaboration, research networks revealed a collaborative pattern based on small, interconnected research groups, which is consistent with the interdisciplinary nature of the field. Furthermore, the high rate of international collaboration (31.89%) reflects a trend towards the internationalisation of knowledge, despite the continued low level of integration in some regions, such as Africa.

As for research topics, the results showed that research is centred on key themes including: recruitment efficiency, smart decision-making, fairness and transparency in recruitment, and the adoption of artificial intelligence in human resources

These findings are consistent with previous studies which have confirmed that artificial intelligence contributes to improving efficiency, but at the same time raises ethical challenges relating to algorithmic bias and fairness (Capasso et al. 2025) (Rigotti and Fosch-Villaronga 2024) , The findings also support the points raised in studies (Zheng et al. 2024), (Soleimani et al. 2025) regarding the need to combine artificial intelligence with human judgement to strike a balance between efficiency and fairness.

Furthermore, the results showed that the most frequently cited articles are those of a conceptual nature and systematic reviews, indicating that the field is still in the stage

of constructing a theoretical framework, which reinforces the need for further applied studies.

Conclusion

This study addressed the topic of artificial intelligence in human resource management: A bibliometric analysis of scientific output during the period 2015–2025, where the study concluded, that the topic of artificial intelligence in human resource recruitment is among the most vital and rapidly growing research topics, having witnessed remarkable development over the last decade in terms of the volume of scientific output and the diversity of research topics, The results showed that artificial intelligence has become a strategic tool that contributes to improving the efficiency of recruitment and selection, enhancing the quality of decisions, and reducing favouritism and bias, whilst ethical and regulatory challenges have emerged that require a balanced approach.

The study also revealed the dominance of developed countries in scientific output, alongside the growing contribution of developing countries, albeit still with less impact, highlighting the need to strengthen scientific research in these areas. This study makes an important contribution by providing a comprehensive bibliometric analysis that aids in understanding the structure of this field and its future trends.

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