Exploring the Trends of Artificial Intelligence in Recruitment: A Bibliometric Study

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Abstract

Artificial Intelligence (AI) as a field has recently evolved as a transformative force in recruitment. Numerous empirical, conceptual, and exploratory studies have been conducted that indicate the novel ways organizations identify, select, and attract top talent. Nevertheless, no network analysis or attempt to map the literature scientifically in the domain has been done in the past. Hence, the paper intends to showcase the trends in Artificial Intelligence and Recruitment research through knowledge and conceptual structures. An analysis using bibliometric tools in artificial intelligence and recruitment was conducted. A sample of 1450 documents was extracted from the Scopus database. This was based on a search strategy determined by the author. An application that is equipped with a bibliometric package was installed. This software enabled the analysis of the dataset, and various themes, patterns, and trends were identified based on the authors, countries, and citations. Results show that the artificial intelligence and recruitment domain need direction. There is also a pressing need for interdisciplinary research in this area. The article provides some crucial insights on areas that need further inquiry. The conceptual and social network structure depicts an upward trend in terms of this area of research. There is a growing demand for Talent Acquisition practitioners and Recruiters with Artificial Intelligence skill sets. The current paper only had the Scopus Database as its backdrop. Future researchers could use multiple databases, such as the Web of Science, and conduct a comparative study. A systematic literature review would widen the scope and help identify some uncharted niche territories of recruitment and artificial intelligence. The novelty of the paper lies in the unexplored intersection of artificial intelligence and recruitment, as no bibliometric studies have been conducted on this subject before.

Keywords: Artificial Intelligence; Recruitment; Bibliometric; Human Resource Management; Hiring; Manpower Planning.

I. Introduction

a. Evolving Role of Artificial Intelligence in Recruitment

Efficiency and effectiveness have always been the pillars of productivity for all industries and sectors. Firms constantly seek innovative ways to streamline the processes to accomplish the same. Integration of Artificial Intelligence (AI) into business operations has been one such intervention that companies have initiated. The recruitment domain has also witnessed the inclusion of Artificial Intelligence, wherein the traditional methods have been augmented with AI-driven solutions and mechanisms. The convergence of Artificial Intelligence and recruitment practices has indeed enhanced the efficacy of the firms and the Human Resources (HR) departments in the identification, evaluation, and

selection of candidates. Understanding the dynamics of recruitment and artificial intelligence is paramount to remain at the forefront of innovation and talent acquisition.

b. Research Objectives

A two-pronged approach has been taken to the research questions. Firstly, what is the overall publication scenario and structure of recruitment and artificial intelligence? Secondly, how has the concept of artificial intelligence evolved and how has it been applied in recruitment? What are the most recent trends and issues?

Based on the above perspective, the following are the research objectives:

- To elicit the patterns or trends in recruitment and artificial intelligence knowledge development.
- To investigate the knowledge structure and derive a knowledge synthesis in Artificial Intelligence-based recruitment.

Network and descriptive types of analysis were used to attain the research objectives. The paper is divided into different sections, each focusing on various aspects of the research. The first section discusses the research methodology, followed by the section on data analysis. The next section presents a detailed discussion of the findings, while the research directions and conclusions are covered in the last section. The paper comprises several distinct sections, each dedicated to exploring different facets of the research. The initial section delves into the research methodology, while the subsequent section examines the data analysis. The subsequent section provides an in-depth look at the findings, while the final section covers the research directions and conclusions.

c. Bibliometric Analysis Technique

The bibliometric analysis technique has been prevalent in the last decade. The method is highly effective as it incorporates both mathematical and statistical analysis. Accurate and precise patterns can be identified through the available literature. (Roblek et al., 2022) Their study explains, "Qualitative methods such as observation and interviews can also be used for analysis. However, bibliometric analysis is based on the science mapping approach. It applies the generic visualization and domain analysis process, thereby allowing network analysis of both the scientific groups and research areas." Another study by (Bragge et al., 2019) helped throw light on the research clusters and intellectual structure of management research on three decades of publications in the area. (Cortés-Sánchez, 2020) Reinforced through their paper, the overwhelming leap business, management, and account research has taken over the last century.

II. Literature Review

a. Recruitment alias Talent Acquisition

Recruitment, now commonly known as Talent Acquisition (TA), has been a critical function for businesses across sectors and geographies. Nevertheless, the conventional approach often involves manual tasks that are time-consuming, prone to biases, and can result in suboptimal candidate matches. (Allal-Chérif et al., 2021) They suggest in their research that digital technologies should be utilized at all stages of the recruitment process. The recruitment or talent acquisition process is highly critical to any organization. The model developed by (Roy et al., 2021) is based on extensive experimental evaluation. The model shows the effectiveness and efficiency of the recruitment process if the model is imbibed.

b. Artificial Intelligence in Human Resources

Artificial Intelligence in Human Resources (HR) has ushered in a new era of efficiency and innovation. By harnessing the power of artificial intelligence, Human Resources or Personnel departments can automate various tasks, ranging from initial candidate screening and resume analysis to employee onboarding and performance evaluations. As (Chilunjika et al., 2022) aptly state, "AI-driven tools enable more accurate predictions of workforce trends, helping organizations make informed decisions about recruitment, retention, and training." The study established that Artificial Intelligence is beneficial in the sense that it can improve public service delivery in South Africa as the

Human Resources personnel is enabled to focus more on the strategic areas of management by taking over routine tasks and that it helps minimize bias in public service recruitment and selection (Chilunjika et al., 2022). Additionally, Artificial Intelligence aids in identifying patterns of employee engagement and satisfaction, allowing companies to address potential issues and enhance workplace culture proactively. However, while Artificial Intelligence enhances Human Resources processes, ethical considerations such as data privacy, fairness, and transparency must be upheld to ensure that technology is a force for positive change within human resources. A study by (Kot et al., 2021) "found that Artificial Intelligence recruitment and quality significantly influence Artificial Intelligence adoption and further influence the employer's reputation. The mediation role of artificial intelligence adoption is significant where it is found that artificial intelligence mediates the relationship between artificial intelligence recruitment and employer reputation, with a similar significant mediation role between artificial intelligence quality and employer reputation." Another exciting study by (Niehueser & Boak, 2020) concluded that "the introduction of Artificial Intelligence considerably improved the speed and efficiency of the work processes. The research found that those employees who had used the new technology were positive about its effects, indicating that it was easy to use, robust, and highly productive. A proportion of employees who had not, at the time of the research, used the new system were less sure that it would improve their ability to do their job." Novel human resource management interventions, such as hiring for potential, pooling talent, and establishing postgraduate supply contracts, are crucial to organizational success. These interventions have to be developed with the assistance of artificial intelligence (Bukartaite, 2023). In their paper, (Bujold, 2023) provides insights on the responsible use of AI in HRM by categorizing six areas for how responsible AI is empirically applied and investigated in HRM. These categories are: 1) no responsible principle applied, 2) bias and discrimination, 3) perceived justice and trust, 4) privacy, 5) explain-ability and transparency, and 6) human role. According to (Pillala, 2022), HR teams must maintain a balance between the cognitive technology advancements and transparency. HR leaders and practitioners must comprehend how decisions are made to prevent the inadvertent inclusion of bias into their programmes. Having transparency in decision-making will be crucial to ensure that employees trust the new technology. In their study to investigate staff induction processes and methods in the supply chain management of industrial companies, (Nielson, 2023) concluded that there is a need to explore further the role of technology, including artificial intelligence. (Pillai, 2024)

c. **Recruitment and Artificial Intelligence**

The symbiotic relationship between Artificial Intelligence and recruitment provides a plethora of benefits. It can expedite the initial screening of candidate resumes and applications, saving time for recruiters to focus on the strategic aspects of human resource planning. The AI-powered algorithms can identify patterns in candidate skills and experiences and match them with Job descriptions, leading to a person–job fitment. Additionally, it also helps mitigate biases in selection processes through objective criteria. This would nurture long-term diversity and inclusivity. Currently, automated resume screening and chatbot-driven initial interviews are employed in recruitment. (Nawaz, 2019) their study explained how Artificial Intelligence is enabling the effectiveness of their recruitment processes. (Wang et al., 2021) a more recent study stated, "Personnel recruitment and selection is changing rapidly with the adoption of artificial intelligence (AI) tools." Results of the study by (Wang et al., 2021) show that "Artificial Intelligence tools encourage a larger number of quality application submissions and for two reasons; First, Artificial Intelligence entrains a perception of a novel approach to job searching. Second, Artificial Intelligence is perceived to be able to interactively tailor the application experience to what the individual applicant expects and has to offer. These perceptions increase the likelihood the user will submit a job application, improving the pool size and quality from which to recruit personnel." As per the article by (Ore & Sposato, 2022), "The findings revealed that Artificial Intelligence facilitates the effective performance of routine tasks through automation." In a study by scholars, it was identified that AI-based Human Resource Management had its own complexity and duality (Tsiskaridze, 2023). (Weekes, 2024) in her article discussed the increasing risks of artificial intelligence in recruitment. The article emphasized on the importance of transparency and human review in AI based decision making processes. (Jatobá, 2023) concluded in their study that there is a growing academic interest in studying the implementation of artificial intelligence to develop human resource management. In a study conducted (Tanantong T, 2024), it was found that the intention to adopt AI for recruitment is significantly influenced by factors such as perceived value, perceived autonomy, effort expectancy, and facilitating conditions. According to a study in 2024, employers and recruiters can benefit from the potential of AI in streamlining their hiring processes, increasing competition for top talent, and making more informed decisions regarding which candidates to pursue. This can be achieved by anticipating and addressing potential threats in the hiring process (Elmohandes, 2024). In order to adapt to new phenomena,

organizations need to implement innovative HR strategies which are essential for success in the face of digital transformation (Bahiroh, 2024).

III.   Methodology

a.   Research Design and Flow Diagram

Below is the flow diagram of the bibliometric analysis. The analysis would need to identify the research database, followed by the data extraction based on the search approach. The nature of the data is secondary. The data required in the research was extracted after the author decided that 'Scopus' was the ideal database. A search query was run using the appropriate mixture of keywords. The dataset was established based on the inclusion and exclusion criteria. The data was then analysed using R-language's bibliometric featured tools. An initial descriptive analysis of the documents, sources, and authors was conducted. Principal component analysis and multiple correspondence analysis techniques were used for data reduction. Network maps were created to depict better data visualization. The network maps revealed the intellectual, conceptual, and social structures. The details of the stages are discussed below.
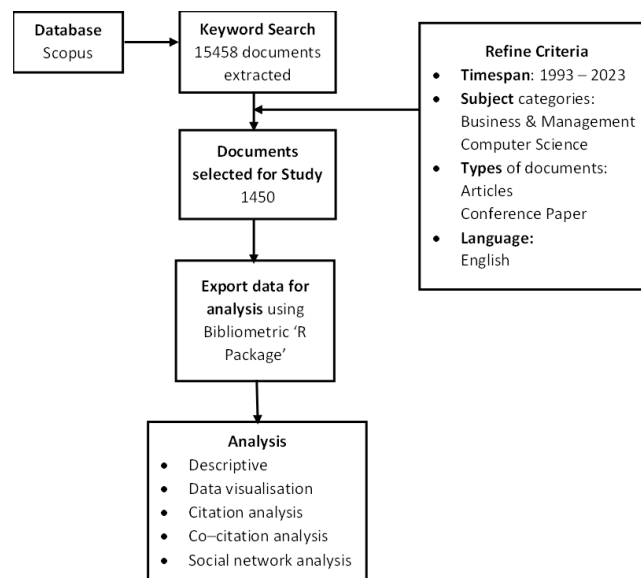
Figure 1. Flowchart for selection of documents

Selection of database:

A crucial pre-requisite for bibliometric analysis is a structured database description of indexed articles. Data retrieval was conducted from the 'Scopus' database. Based on Elsevier's Scopus coverage of articles and classification of journals, the database was linked to the Bibliometric package in R-studio. The Scopus database is ideal for bibliometric analysis as it covers highly credible journals from various categories and excludes papers from non-scientific journals and magazines (Mulet-Forteza, 2019).

Data Analysis – Preparation:

The data was downloaded from Scopus in Microsoft Excel to support the software requirement. Documents were shortlisted based on the following search criteria applied on 19th August 2023.

Search strategy – Identification of Keywords:

The famous research contributions interchangeably use the words 'recruitment' and 'artificial intelligence.' 15458 documents showcased the search for these terms. The author pertinently realized that the humongous data set would not serve the study's objectives.

Search strategy. Keywords: "recruitment" and "artificial intelligence."

Refined by: Scopus Categories (Business, Management and Accounting) OR (Computer Science)

Document types: Article, Conference Paper

Languages: English

Timespan: 1993 – 2023
Selection of Language
In this step, the shortlisted documents of the earlier step were screened through a language filter – "English." The final dataset extracted was 1450 documents. The critical information related to extracted documents, viz. title, abstracts, authors, and keywords, were uploaded in a Microsoft Excel format to the 'Biblioshiny' – Bibliometrix-related R-studio package tool (Ingale & Paluri, 2020). The tool was developed as part of the package (Aria & Cuccurullo, 2017). The tool helped identify themes, prominent journals, most cited authors, prominent countries, critical articles, depiction of citation, co–citation, and social network analysis.
Selection of time span:
The past few decades have seen enormous interest in artificial intelligence. The core objective of the paper is to detect the perspectives and trends in the field of artificial intelligence and recruitment from 1993 – 2023.
Selection of subject categories:
As stated earlier, refining the data was critical. Hence, the search was refined by categories: Business, Management, Accounting, and Computer Science. This stage resulted in 2041 documents being extracted.
Selection of document types:
Conference Proceedings, Book Series, and Trade Journals were included in the extracted data. This enabled the data to be fine-tuned to meet the research objectives. Hence, the final shortlisted data comprised 1450 documents, which were used for further analysis.

IV.   Data Analysis

a.   Descriptive Analysis

The data analysis was primarily a two-pronged approach. A network analysis and descriptive analysis. This is explained in Figure 2. In network analysis, extensive science mapping is conducted through visualization methods such as thematic maps, network analysis, and three-field plots. It helped the researcher derive the knowledge structures to facilitate further analysis (Nusair et al., 2019). The Descriptive analysis focused on exploring the bibliometric data in terms of the three elements: the sources, the authors, and the documents.
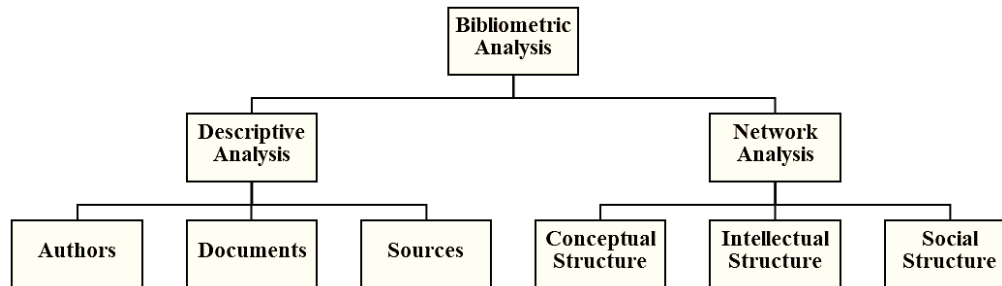

Figure 2. Bibliometric Analysis – Hierarchy

Descriptive analysis: This section of the paper primarily focuses on descriptive analysis. Numerous dimensions were undertaken for the extensive study.
Dataset: A brief summary of the data is depicted in Table 1. It gives an overview of the various dimensions undertaken for analysis. The bibliometric data frame consisted of 1450 documents extracted through a stepwise search query on the Scopus database. Interestingly, these documents were published in 764 sources with an 'average citation score' of 17.96 and a significant 'collaboration index' of 3.54. This was a welcome sign, indicating substantial collaboration among researchers.
Three field plots: The 'Three Field Plot' is based on the Sankey Plot mechanism. The plot gives a clear relationship between the three fields, wherein the size of the portion is proportionate to the node's value (Ingale & Paluri, 2020). There are three rows, as shown in Figure 3. The leftmost side of the Sankey Plot is the Countries of Origin of the authors; the middle column is the authors, and the rightmost side is the keywords. The technology-related keywords evolving from the analysis are data mining, learning systems, machine learning, and decision-making. Some of the

human resources-related keywords are human resource management, employment, recruitment process, and personnel. Intriguingly, the keywords evolving from Artificial Intelligence and recruitment seem almost equal.

Table 1. Brief summary of the data set.

| Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1993:2023
Sources (Journals, Books, etc.)	764
Documents	1450
Annual Growth Rate %	23.38
Document Average Age	5.69
Average citations per doc	17.96
References	53783
DOCUMENT CONTENTS	
Keywords Plus (ID)	8458
Author's Keywords (DE)	3842
AUTHORS	
Authors	4202
Authors of single-authored docs	139
AUTHORS COLLABORATION	
Single-authored docs	151
Co-Authors per Doc	3.54
International co-authorships %	21.17
DOCUMENT TYPES	
Article	582
Conference Paper	868
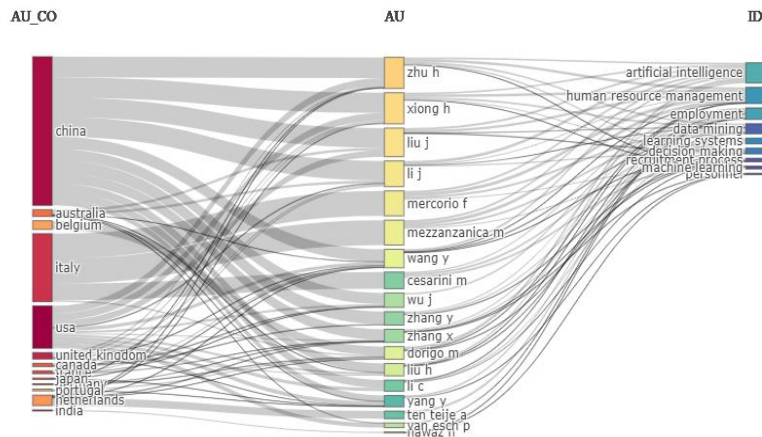
Figure 3. Three Fields Plot

Source Growth: The scientific production in the artificial intelligence and recruitment domain showed an upward trend in Figure 4. Despite the author choosing a period of three decades (1993 – 2023), the analysis is a decent depiction of the trends in AI and recruitment. There is a steep rise in interest in AI and recruitment post-2017. A partial plateauing of the graph happens between 1995 and 2005. Post 2019, there has been a significant rise in publications in the field. The surge during the year(s) 2020 and 2021 may be attributed to the advent of the pandemic. Organizations started adopting methods of practical Human Resource (HR) practices. (Saxena et al., 2021) Their study showcased the challenges in adopting and accepting HR Analytics in organizations. A study by (Vitak & Zimmer, 2023) highlighted that the future of work focuses on developing effective mechanisms to utilize technologies for enabling human resource practices to be helped with work from home (WFH).
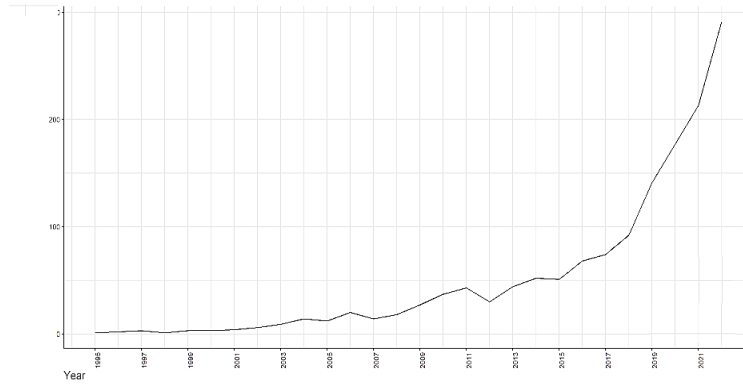
Figure 4. Scientific production and growth

Figure 5 shows a fluctuating trend in terms of the concept. The average number of article citations per year has been declining post-2012. The field seems to be highly contextual and volatile. This observation is significant as it underscores the unstable and unpredictable nature of the field. It suggests that the context in which research is conducted, as well as the factors that influence its impact and significance, are subject to variation and modification.
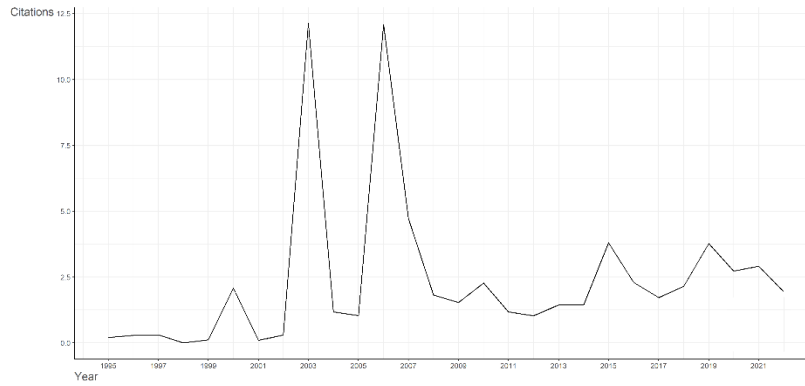

Figure 5. Average Citations per annum

Figure 6. below showcase the most relevant words. After AI, Machine learning and recruitment tend to be gaining maximum interest among scholars in the field. E–recruitment is in the top five most relevant words. (Aydın & Turan, 2023; Pandey et al., 2020; Wang et al., 2021) Their studies have supported the usage of AI in talent acquisition and e–recruitment. This indicates that recruitment trends are influenced by technology, automation, AI, and machine learning and vice versa. The fluctuation graph clearly reflects the recruitment trends during 2007 – 2010. The 2008 subprime crisis and corporate governance issues in organizations are reflected in many studies. A study by (Kara et al., 2022) described the impact of the subprime crisis on various facets of business.
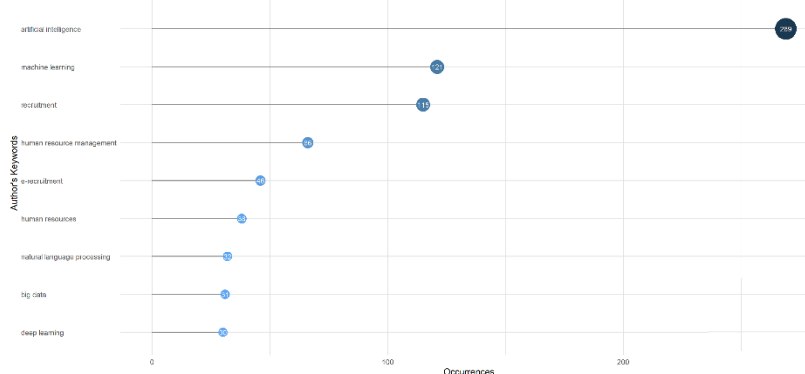

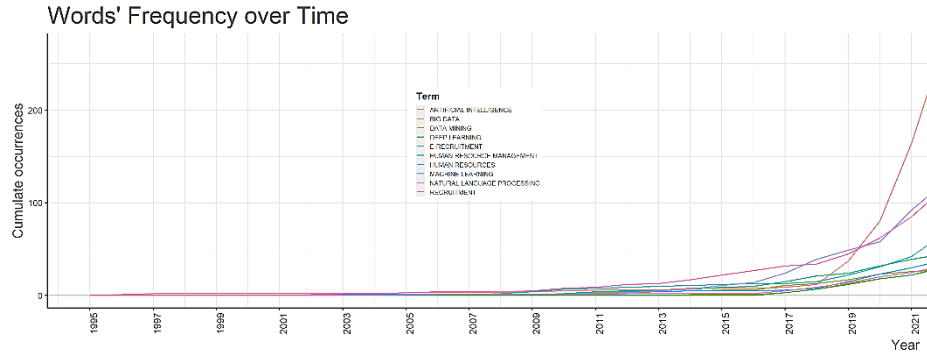**Figure 6.** Most Relevant Words

Figure 7. Word growth trend

Research has revealed that within the realm of AI and recruitment, Zhu H and Xiong H are the most prolific authors with the highest number of published works. However, it is worth noting that other authors have also made noteworthy contributions to the field, as seen in Figure 8. Upon examining Figure 10, it becomes apparent that Zhu H and Xiong H have had the most profound impact on the domain, indicating that their work has been instrumental in shaping the field. It was found that the authors Zhu H and Xiong H have the highest number of publications in the field of AI and recruitment. Although these two authors have the most publications, other authors have also made a noteworthy contribution to the field, as seen in Figure 8. Additionally, Figure 10 displays the impact of the authors, with Zhu H and Xiong H having the most significant impact. Authors Zhu H and Xiong H were identified to be the most published authors. These authors had the maximum publications in the domain of AI and recruitment. It can be seen from Figure 8 that even though three authors stand out in terms of the number of publications, the other authors have a relatively significant contribution to the domain. In Figure 10, the authors' impact is shown; Zhu H and Xiong H stand out as the most impactful authors.
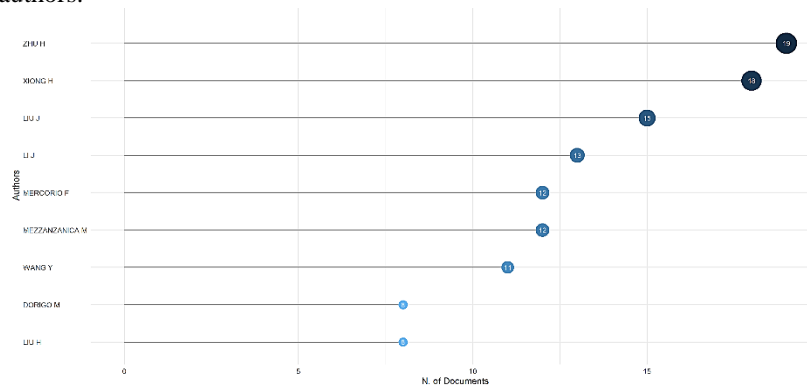

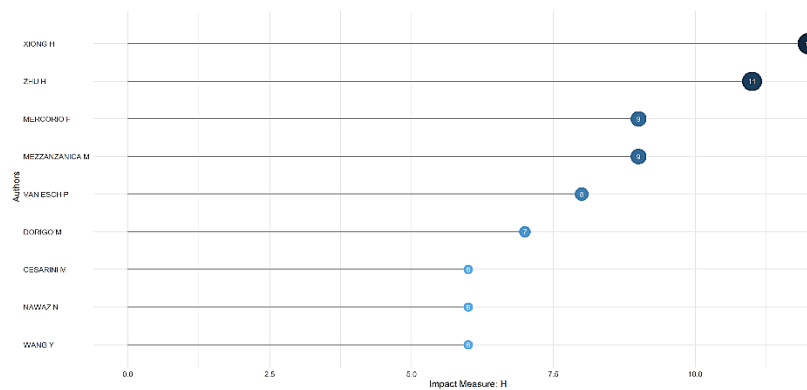**Figure 8.** Most Relevant Authors

Figure 9. Author Impact

Country-wise contribution: Gaining a thorough and intricate grasp of a specific field or domain requires a deep dive into the diverse contributions made by various nations towards it. Examining these contributions can illuminate the historical progression of the literature, as well as the emerging trends and patterns within the field. Additionally, it can aid in identifying the key figures who have significantly influenced the discourse and knowledge base of the domain. Moreover, analysing the contributions made by different countries can offer valuable insights into the cultural, political, and economic factors that have impacted the field's development and current state.
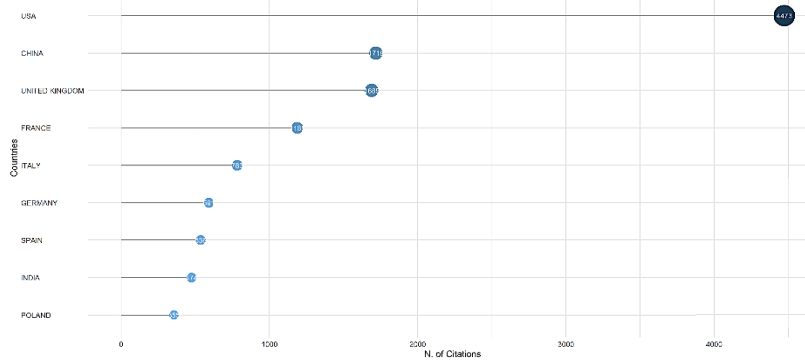

Figure 10. Most Cited Countries

Documents: Two journals stand out in Figure 11 (Most Relevant Sources). The first journal is Lecture Notes in Computer Science, with 184 documents. This is followed by the CEUR Workshop Proceedings journal with a minuscule 33 papers. In Figure 11, we can observe two noteworthy journals that have a considerable impact in the field. The first journal that stands out is the prestigious Lecture Notes in Computer Science, which has a remarkable 184 documents published. This journal is widely recognized for its emphasis on theoretical computer science and programming languages. On the other hand, CEUR Workshop Proceedings, with only 33 papers, is a relatively minor player in the field of computer science. Despite its smaller size, the journal provides a platform for presenting high-quality research that is often overlooked by mainstream publications.
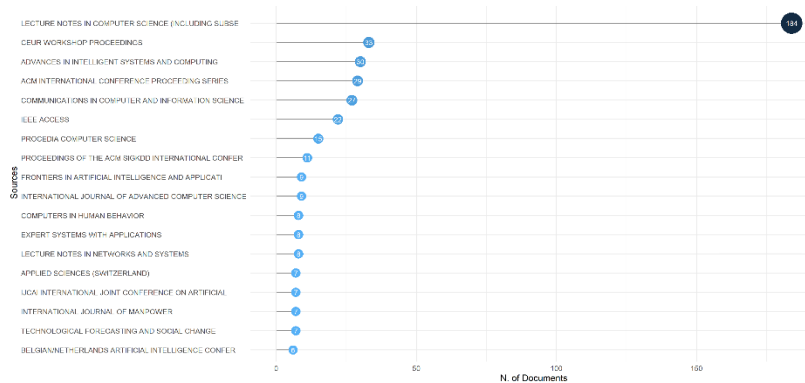

Figure 11. Most Relevant Sources

Keywords: Figure 12 is the 'Word Cloud' for the term(s) artificial intelligence and recruitment. The Word Cloud is a visualization and representation of the frequency of the keyword. The terms stand out in the word cloud. The significance of the word can be determined by its size. Terms like e-recruitment, human resource management, and machine learning are also second in line regarding their weightage in the domain. It can be inferred that artificial intelligence does act as an antecedent to ensure effective recruitment and human resource practices. Words like fairness and ethics help us understand that many studies have explored these elements of AI and recruitment. The word social media in the word cloud is a welcome sign for future research. Studies by (van Esch & Black, 2019) (Basri, 2020) are aligned with the finding s of the current research.

Figure 12. Word Cloud

Trends topics: According to Figure 13, the most popular topics are "human resource management," "machine learning," "decision making," and "recruitment." Aydın and Turan (2023) and Tian et al. (2023) have conducted studies that confirm the relevance of machine learning and recruitment trends. Recent studies by Kaushal et al. (2023) and Kaushal & Ghalawat (2023) have set the research agenda for the role of AI in human resource management. As indicated in Figure 13., the topics trending the most are 'human resource management,' 'machine learning,' 'decision making,' and 'recruitment.' (Aydın & Turan, 2023; Tian et al., 2023) Through their studies, they support the relevance of machine learning and recruitment trends. Recent studies (Kaushal et al., 2023; Kaushal & Ghalawat, 2023) have set the research agenda for the role of AI in human resource management.
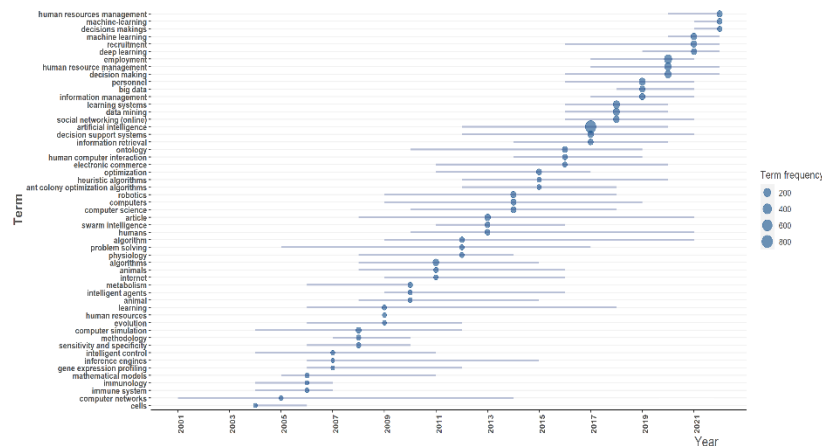

Figure 13. Trend Topics

Data visualization: There is a mounting interest in Artificial Intelligence and recruitment. The paper's current section focuses on the domain's thematic evolution. Data visualization is a quantitative technique that assesses the clusters, occurrences, and associations amongst multiple units of analysis. The approach extracts network linkages by analysing various documents, authors, and keywords. The statistical analysis generated a map that indicated the various network linkages. As can be seen in Figure 2, this network analysis culminates into three types of knowledge structures. They are social structure, conceptual structure, and intellectual structure.

Conceptual Structure: The 'conceptual structure' depicts the interface between the 3 T's (topics, themes, trends). Figure 14 shows the co-occurrence network diagram. It primarily displays the Co-occurrence network with the nodes having five distinct colours. Artificial intelligence is in red colour; machine learning is in purple colour. This is also known as co-word analysis. The content of the papers is extracted and analysed. Alongside Artificial Intelligence, topics such as technology, blockchain, and algorithms seem to align. The red nodes are representative of Artificial Intelligence. Machine Learning is a close cousin of Artificial Intelligence. They have deep-rooted links with artificial intelligence. Themes like fuzzy logic, deep learning, natural language processing, automation, data science, and neural networks are being studied alongside Artificial Intelligence. The purple nodes are representative of the parent node –

machine learning. Results of a study conducted by (Pessach et al., 2020) showed that compared to actual recruitment decisions, a machine learning-based recruitment framework improved the diversity and overall success rate of talent acquisition in the organization. The crux of the study is in supporting the hypothesis that recruitment and artificial intelligence research are predominantly being studied and published. Concepts and practical aspects such as Human Resource Management (HRM), selection, and recruitment are placed near the artificial intelligence node. This indicates the significant relation between the two concepts being researched widely. (Singh & Arora, 2019) Their study hypothesized that AI can effectively be used as a talent acquisition tool. The findings here resonate with the study's conclusions (Singh & Arora.
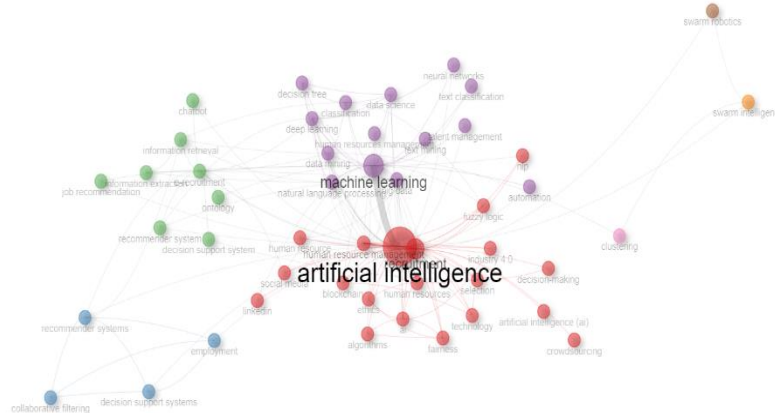

Figure 14. Co-occurrence Network

Thematic Map: A 'Thematic Map' is a graph that plots typological themes on two dimensions. Keyword clusters are identified with references taken from co-occurrence and co-word analysis to help produce themes in the research domain. As shown in Figure 16, the map is based on two axes, where the location of a theme is determined by its centrality and density on the two-dimensional graph. A 'Thematic Map' is plotted on two dimensions with typological themes. Keyword clusters are identified with references taken from the co-occurrence and co-word analysis. This helps in the next step of producing themes in the research domain. As seen in Figure 16, the mapping is based on two axes. The centrality and density of the themes determine its location on the two-dimensional graph.
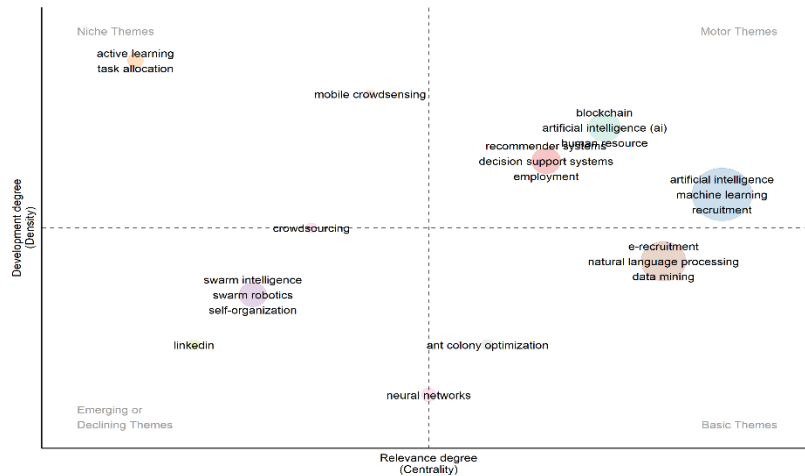

Figure 15. Thematic Map

A bubble on the thematic map represents the theme. As explained by (Viedma-Del-Jesus et al., 2011), the Thematic map has four quadrants: the upper right quadrant is a motor theme; the lower right quadrant is a basic theme; the lower left quadrant is an emerging or declining theme; and the upper right quadrant is a niche theme. The linkage to the

domain of Artificial Intelligence is evident from the figure, wherein the domain of Artificial Intelligence is highly intertwined with recruitment.

Intellectual Structure: The intellectual structure comments on the author's impact on the scientific community. The alliance between authors and countries is studied. The degree of collaboration and cooperation between the research fraternity and their affiliations with various universities (Ingale & Paluri, 2020). An interesting 3-in-1 framework was designed by(Pampouktsi et al., 2021) for selection and positioning based on machine learning tools. The framework effectively selects meritocratic personnel and positions horizontally in the departments or vertically in the leadership positions.

Tree Map: The Tree Map in Figure 16 depicts the keywords consistently mentioned in the various documents extracted. The top three terms are 'artificial intelligence,' 'machine learning,' and 'recruitment.' This helps us understand that most authors and scholars are trying to research the linkages between artificial intelligence, machine learning, and recruitment. (Rab-Kettler & Lehnervp, 2019) As their article presents, newer models are evolving, considering current social changes. Humanistic management as a broader concept and humanistic talent attraction has been created due to the advent of artificial intelligence and machine learning.
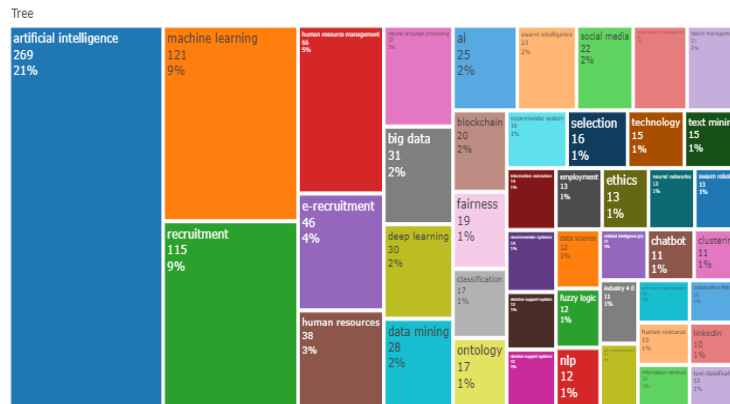

Figure 16. Tree Map

Social Network Analysis: SNA helps produce the interrelationships within the research domain. The 'nodes' are the actors such as scholars, authors, and sources of publication, and the 'set of nodes indicate the interconnectedness of the relationships in the social network." The ties that connect these domains are seen through the network dynamics. In Figure 17., the author depicts the geographical collaboration and distribution drawn from approximately 45 odd countries.
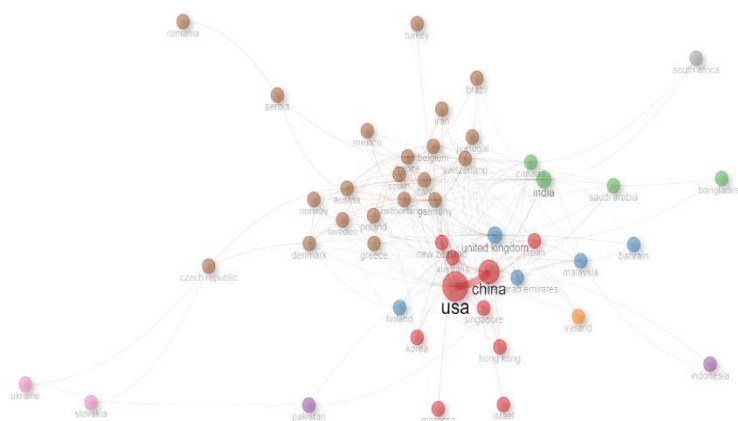

Figure 17. Geographical Network

V.   Conclusion

This article focuses on the theme of "Artificial Intelligence and Recruitment" over the past three decades, from 1993 to 2023. The paper sheds light on various structures related to the topic. One of the significant contributions of this study is the consolidation of over 1400 research articles that were fragmented pieces of literature. The article also highlights substantial authors, sources, and documents that are relevant to the subject. The research shows that major contributions in this field are from the USA, followed closely by European countries. The author also identified that the authors of developed countries collaborate with the developing world, especially in the field of artificial intelligence. The publications are mainly in human resource management, recruitment, and business domains, indicating a vast scope for interdisciplinary research. Academicians and practitioners can explore opportunities for understanding how the countries' patterns impact and relate to each other. Bibliometric studies offer a major contribution by identifying gaps in knowledge. The overarching goal of introducing artificial intelligence in the recruitment process is to improve the identification of the best-fit candidates and neutralize human biases. The article aligns with the findings of (FraiJ, 2021), which conclude that artificial intelligence has a significant impact on the recruitment process and improves the role and practices of the human resource department. This paper or article is based on the underlying theme of 'Artificial Intelligence and Recruitment' over three decades, from 1993 to 2023. The article brings to light the various structures related to the same. One of the significant contributions of this study is the consolidation of over 1400 research articles that were fragmented pieces of literature. Highlighting substantial authors, sources, and documents is also a valuable addition to the article. The major contributors to the field are from the USA, followed by European Countries having a neck-to-neck fight. The author also identified that the authors of developed countries collaborate with the developing world, especially in artificial intelligence. The publications are mainly in human resource management, recruitment, and business domains. Hence, there is enormous scope for an interdisciplinary research approach. Academicians and practitioners can further explore the opportunities for understanding the patterns countries impact and their interrelatedness. A major contribution, bibliometric studies offer is an area of gap identification. The overarching goal of introducing artificial intelligence in the recruitment process is to boost the impact on identification of best fit candidate and neutralizing the human biases. The article aligns with the findings of (FraiJ, 2021), that artificial intelligence has a significant impact on the recruitment process and improves the human resource department's role and practices.

VI.   Research Limitations

The current article, like many, is also subject to limitations. Firstly, the most important limitation is the dispersion of information and unpopular views. This study has limitations that may affect our results. Secondly, the Scopus database has some non-standardized information, which could be a source of errors in our analyses. While Scopus is the largest bibliographic database, the use of only one database may not cover all papers related to recruitment and artificial intelligence. Therefore, more analyses combining information from other bibliographic sources such as Web of Science and Google Scholar could be considered as future work of this study to provide a more comprehensive understanding of the topic. Finally, it is important to note that while the bibliographic results provide both the number of papers and citations, the quantity of papers does not necessarily equate to the quality of research. Therefore, it is imperative to carefully evaluate research based on various metrics beyond just the number of citations.

VII.   Recommendations for future research

Some of the study's limitations are: (1) This bibliometric study used only the Scopus database. Other databases, such as Web of Science, could be used in future studies. (2) the keyword exploration was minimal and could be modified to include additional words synonymous with recruitment. (3) An extensive review of the literature followed by meta-analysis would enable the enrichment of the domain of Artificial Intelligence Recruitment. (4) there is a lack of interdisciplinary research in this domain, and social and intellectual collaborations through forums and associations can be nurtured. (5) content analysis of papers in this research domain would produce an enriched insight into the relevant models and theories for practitioners. (6) contribution ought to be sought from industry experts and practitioners. These few steps could help enrich the field of emotional intelligence.

VIII.   Implications

This study is a significant contribution to the field of recruitment and artificial intelligence. By applying bibliometric analysis, the research has identified a lack of attention given by management academia to these two topics. While there are a few individual studies on artificial intelligence and human resource management, there is a lack of research using bibliometric analysis. This study can serve as a starting point for future research to expand and develop the concept. HR professionals can use this study to further explore and analyse the subject. As stated by (P.R. Palos-Sánchez, 2022), HR managers should incorporate artificial intelligence into their recruitment processes.

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