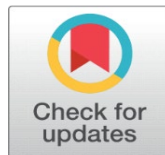


THE RESEARCH LANDSCAPE ON ARTIFICIAL INTELLIGENCE AND ITS RELATIONSHIP WITH E-RECRUITMENT: SYSTEMATIC LITERATURE REVIEW AND FUTURE RESEARCH AGENDA

Ajay Nandakumar Mudliar¹

¹ Chitkara Business School, Chitkara University, Punjab, India



DOI

[10.29121/shodhkosh.v4.i2.2023.3694](https://doi.org/10.29121/shodhkosh.v4.i2.2023.3694)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Copyright: © 2023 The Author(s). This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

With the license CC-BY, authors retain the copyright, allowing anyone to download, reuse, re-print, modify, distribute, and/or copy their contribution. The work must be properly attributed to its author.



ABSTRACT

Purpose – The objective of this study is to conduct a comprehensive analysis of the current body of existing literature on Artificial Intelligence and its relationship with recruitment. Additionally, this study identifies and emphasize the future research agenda and emerging trends within state-of-art.

Design/methodology/approach – A thorough investigation was conducted on a set of 84 publications sourced from the Scopus database spanning the years 2012 to 2023, utilizing the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) methodology.

Findings – The findings of the study indicate a taxonomical impression of prevailing scientific research on role of Artificial Intelligence in facilitating E-recruitment.

Originality/value - This study utilizes Systematic Literature Review to examine literature on

aiming to develop a systematic comprehension of the research field of Artificial Intelligence.

This study makes a valuable contribution to the current scholarly discourse and provides support for future scholars in their investigations.

Keywords: "Artificial Intelligence", "E-Recruitment", "Online Recruitment", "Hiring"

1. INTRODUCTION

Talent execution is a new process that assesses potential trends and hiring in the job market. This may also help in the internal performance parameters to achieve a specific success in hiring (Bibi, 2019). The competitive edge is determined by the evaluation of existing workplaces and branding facilities to employers. This attribute creates a deep behavioral development in the candidates as compared to the company-specific indicator for hiring reliable people for the major organizational culture. The process can be enhanced with the implementation of software, "Artificial intelligence" consists of several technologies which include "machine learning", "predictive analytics", "robotics process of automation" and "natural language processing" (Singh, Rathore & Park, 2020). "Artificial intelligence" is specifically used to support functions across the enterprise for creating efficiencies. Major development is continued based on "Supply chain management," developing a better relationship with customers, manufacturing of products and delivery in a perfect manner, and the proper planning for a business.

2. LITERATURE REVIEW

Artificial intelligence represents the real enhancement of business practices and this perfectly influences the work of employees. In the viewpoint of Abdeldayem & Aldulaimi (2020), artificial intelligence technology has affected human resource management, which has made it better to raise the growth of organizational performance. This technology mainly refers to the task that requires a proper level of accomplishment, which must raise the revenue of any organization. Technological advancement in organization or any sector may improve the overall culture and this also transform entire infrastructure that leads to highest chances of growth. Many expertises in the application of "artificial intelligence" are able to create the major growth, and these experts improve the training program, which may raise the intelligence of the main firm organization.

Artificial intelligence refers to the performance of humans, which is usually associated with the creativity of the human mind for the sake of major establishment. As mentioned by Raisch, & Krakowski, (2021), "Artificial intelligence"-based solutions can play a vital role to deliver better position and performance in organization. In the concern, many IT sectors have gotten a more facilitative position, which can bring huge profitable growth. Many international investors have specifically raised the level of investment due to high level of growth for future establishment and perfect creation of bridge between two countries.

3. METHODOLOGY

The systematic literature review followed a structured approach to investigate the integration of Artificial Intelligence (AI) and e-recruitment. Relevant databases, including Scopus and Web of Science, were selected for their comprehensive coverage of peer-reviewed articles. A combination of keywords such as "Artificial Intelligence," "e-recruitment," "machine learning," "HR technology," and "talent acquisition" was employed to retrieve relevant publications. The review process adhered to established guidelines for systematic reviews, as recommended by Tranfield et al., (2003). The study focused on publications from 2018 to 2023 to ensure the inclusion of recent developments in the field. Inclusion and exclusion criteria were applied to filter the results, ensuring relevance and quality. Bibliometric analysis was conducted to evaluate publication trends, key contributors (authors and affiliations), and geographic distribution, following the methodology outlined by Donthu et al., (2021). Additionally, visual tools, such as keyword co-occurrence networks and overlay visualizations, were employed to identify thematic clusters and emerging trends, as suggested by Zupic & Čater, (2015).

This rigorous methodology ensures a comprehensive and objective analysis of the evolving role of AI in e-recruitment, providing valuable insights for academic and practical applications. References were managed using standard citation tools to maintain accuracy and consistency throughout the review

3.1 Search String

TITLE-ABS-KEY ("Artificial Intelligence" AND "E-Recruitment" OR "Online Recruitment" OR "Hiring") AND PUBYEAR > 2017 AND PUBYEAR < 2024 AND (LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "COMP")) AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "cp"))

The search strategy for identifying relevant literature involved using specific keywords and filters to ensure the selection of the most pertinent studies. The search focused on articles containing the terms "Artificial Intelligence" and "E-Recruitment" (or related terms like "Online Recruitment" and "Hiring") in the title, abstract, or keywords. To ensure relevance to the contemporary landscape, only articles published between 2017 and 2024 were included.

To narrow the scope further, the search was limited to publications in the fields of Business (BUSI), Sociology (SOCI), and Computer Science (COMP), as these areas are directly related to AI and recruitment. Additionally, the filter was set to include only final versions of articles (excluding drafts or early versions) and focused on articles (ar) and conference papers (cp) as the document types, ensuring high-quality, peer-reviewed sources.

This approach helps in gathering comprehensive and up-to-date research that is directly relevant to the intersection of AI and e-recruitment.

3.2 Documents per year

The figure 1 and 2 complements the earlier list by providing specific numbers of publications on Artificial Intelligence and E-recruitment research from 2018 to 2023. It reveals a clear upward trend in publications from 2018 to 2022, followed by a decline in 2023.

In 2018, there were 24 publications, indicating an emerging interest in the topic. However, 2019 saw a slight drop to 19 publications, suggesting that the field was still in its early stages of development. Starting in 2020, the number of publications grew significantly, reaching 31, likely driven by advancements in AI and its increasing application in recruitment processes.

The trend peaked in 2021 with 52 publications and remained high in 2022 at 53, reflecting sustained interest in leveraging AI to address recruitment challenges, particularly during the pandemic-driven shift to remote hiring practices. In 2023, the publication count dropped to 41, potentially indicating a shift in research priorities or the maturation of foundational topics in the field.

This data highlights the dynamic growth of AI and E-recruitment research, with a need to explore emerging areas such as ethical considerations, transparency, and long-term impacts to sustain momentum in future studies.

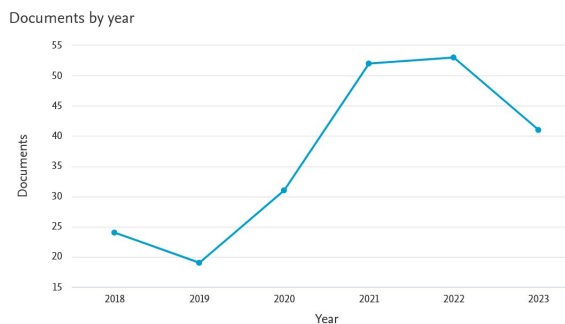


Figure 1: Documents by year (Source: Scopus output)

Year ↓	Documents ↑
2023	41
2022	53
2021	52
2020	31
2019	19
2018	24

Figure 2: List of documents by year (Source: Scopus output)

3.3 Documents by Affiliation

Figure 3 compares document counts from up to 15 affiliations in the research landscape of Artificial Intelligence and E-recruitment. Ahlia University leads with the highest contribution, producing approximately 4 documents. Other institutions, including Princeton University, Tel Aviv University, Duke University, and the University of Montreal, each contributed around 3 documents.

Renowned organizations like Stanford University, Technische Universität München, the University of Maryland, Microsoft Research, and Carnegie Mellon University also played significant roles, reflecting broad institutional interest. This distribution highlights the diverse and global nature of contributions to the field, with active participation from both academic and corporate research entities.

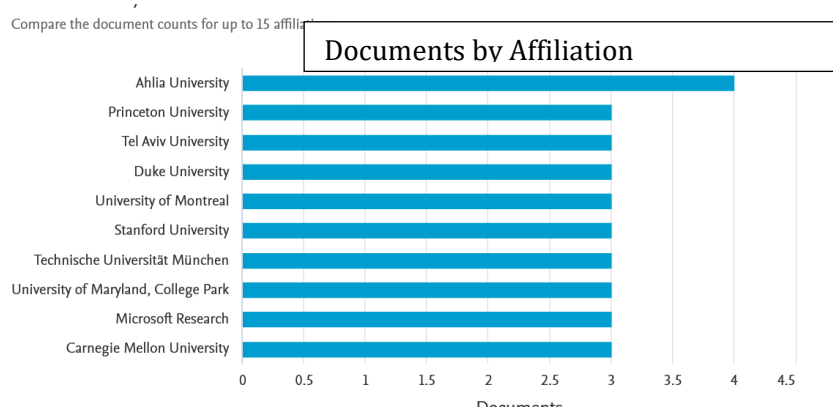


Figure 3: Documents by affiliation (Scopus output)

3.4 Documents per year by source

The figure 4 presents the number of documents published per year by different sources from 2018 to 2023, showcasing the contributions of key publication venues in the research on Artificial Intelligence and E-recruitment.

- **Lecture Notes in Networks and Systems** shows a steady rise, becoming the most prolific source by 2023 with approximately 7 publications. This indicates its growing prominence in publishing research on AI and its applications.

- **ACM International Conference Proceeding Series** demonstrates fluctuating output, peaking in 2021 but declining afterward, suggesting episodic contributions aligned with specific conferences.
- **Advances in Intelligent Systems and Computing** and **Lecture Notes in Computer Science** maintain consistent contributions over the years, reflecting their established roles as significant sources for research in AI and related domains.
- **CEUR Workshop Proceedings** had lower but steady outputs, with occasional peaks, highlighting its focus on niche or workshop-level discussions.

This analysis indicates that while certain sources like *Lecture Notes in Networks and Systems* are gaining prominence, others maintain steady contributions, collectively supporting the growth of AI and E-recruitment research.

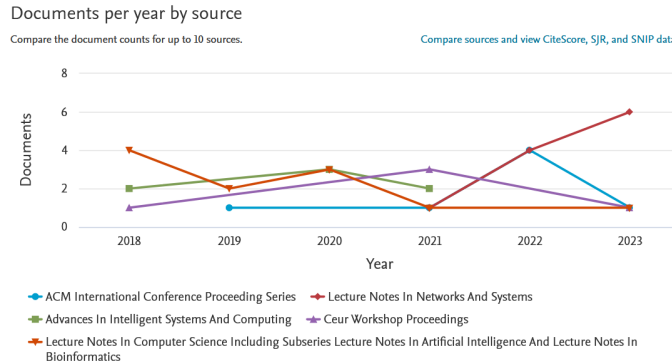


Figure 4: Documents per year by source (Scopus output)

3.5 Top Authors

Figure 5 highlights the top contributors to research on Artificial Intelligence and E-recruitment. Leading the list are Hamdan, A., and Kenthapadi, K., each with approximately three publications, showcasing their significant influence in the field. Following them are authors such as Abdelbaki, N., Dickerson, J.P., Engelmann, S., Freeman, R., Gade, K., Grossklags, J., Heggo, I.A., and Horodyski, P., each contributing around two documents. These researchers represent key voices driving advancements in the intersection of AI and recruitment, addressing foundational and applied topics that shape the current and future landscape of this domain.

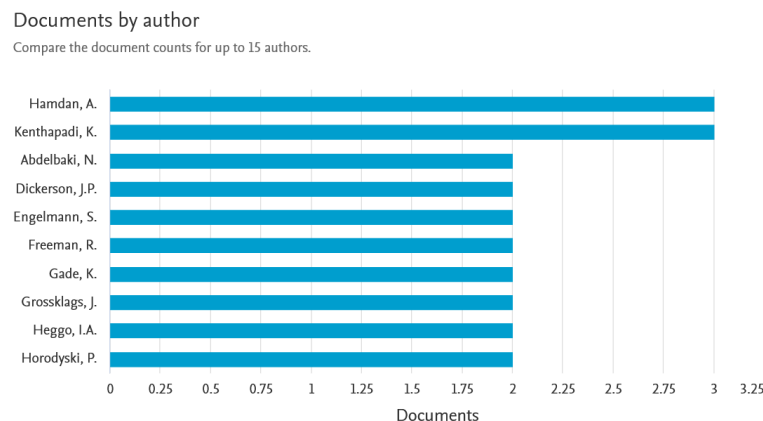


Figure 5: Documents by author (Source: Scopus output)

3.6 Documents by country and territory

The figure 6 illustrates the contributions of various countries to the research on Artificial Intelligence and E-recruitment. The United States leads significantly, with nearly 65 publications, reflecting its dominant position in AI research and

technological innovation. India follows with around 35 documents, indicating its growing focus on AI applications in recruitment and technology-driven solutions.

Other notable contributors include Germany and the United Kingdom, with approximately 20 publications each, showcasing their active research communities. Countries like France, Brazil, Canada, China, Italy, and Saudi Arabia have also made meaningful contributions, each producing around 5 to 10 documents. This distribution underscores the global nature of research in this field, with strong participation from both developed and emerging economies.

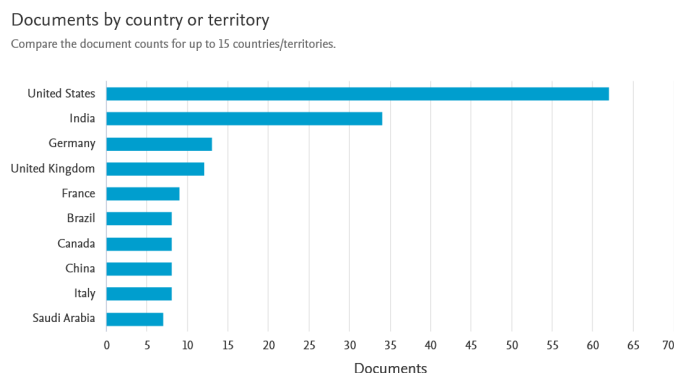


Figure 6: Documents by country or territory (Source: Scopus output)

3.7 Documents by affiliation

The figure 7 highlights the leading affiliations contributing to research on Artificial Intelligence and E-recruitment. Ahila University stands out with the highest contribution, producing approximately 4 documents. Other notable institutions, including Princeton University, Tel Aviv University, Duke University, and the University of Montreal, each contributed around 3 documents.

Additionally, prestigious organizations such as Stanford University, Technische Universität München, the University of Maryland, Microsoft Research, and Carnegie Mellon University also made significant contributions. This distribution showcases a diverse and global network of academic and corporate institutions driving innovation and exploration in this field.

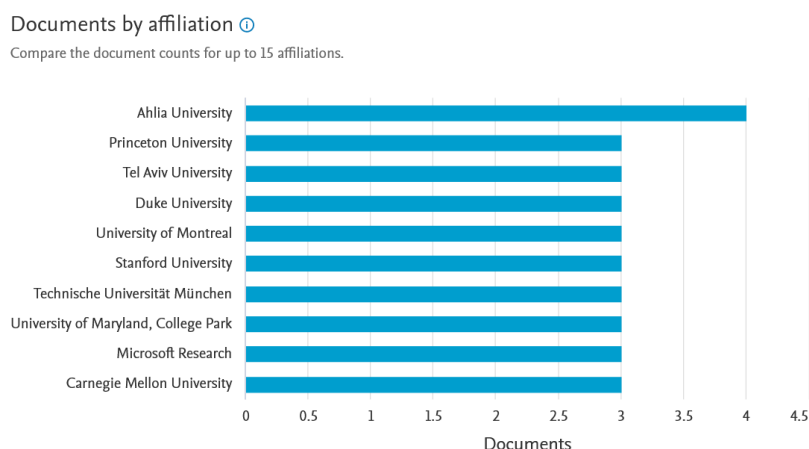


Figure 7: Documents by affiliation (Source: Scopus output)

3.8 Network Visualization of author's keywords

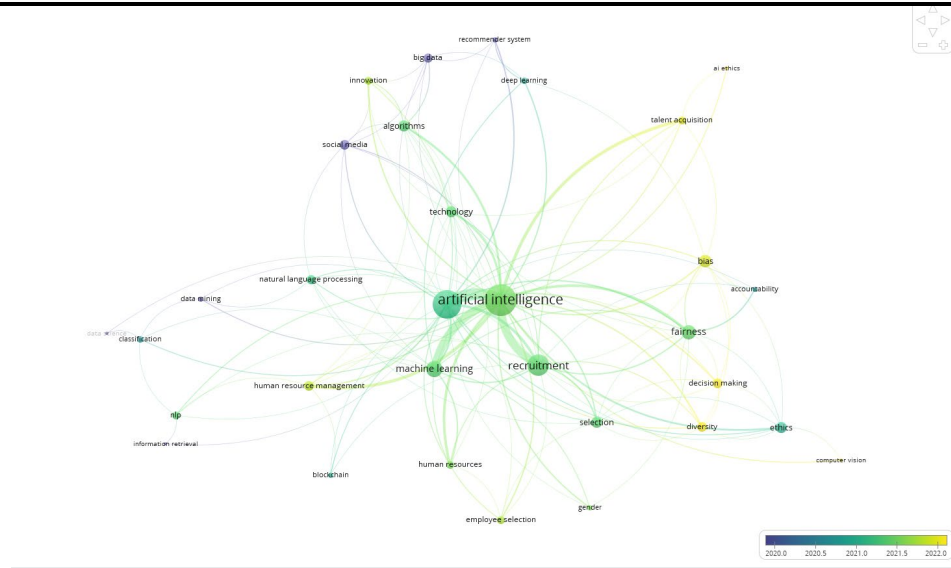


Figure 9: Overlay Visualization (Source: VosViewer)

CONCLUSIONS AND LIMITATIONS

This study provides a comprehensive overview of the intersection between Artificial Intelligence and e-recruitment through a systematic literature review. By analyzing publication trends, prominent contributors, key affiliations, and emerging themes, it highlights the growing academic and practical interest in leveraging AI to enhance recruitment processes. The findings underscore the potential of AI-driven technologies to revolutionize talent acquisition, while also identifying gaps and opportunities for future research. This work serves as a foundation for advancing knowledge in this dynamic field and guiding future academic inquiry and industry application.

This study is limited by its reliance on publications indexed in specific databases, which may exclude relevant research from other sources. Additionally, the focus on articles published between 2018 and 2023 might overlook earlier foundational studies. The analysis primarily emphasizes quantitative bibliometric methods, which may not fully capture qualitative insights. Lastly, language restrictions to English publications could have excluded valuable contributions in other languages.

ACKNOWLEDGEMENT:

None.

CONFLICT OF INTEREST:

None.

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.
- Bibi, M. (2019). Impact of talent management practices on employee performance: an empirical study among healthcare employees. *SEISENSE Journal of Management*, 2(1), 22-32. <http://www.journal.seisense.com/index.php/jom/article/download/83/43>.
- 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, 285-296.
- Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. *Academy of management review*, 46(1), 192-210. https://www.researchgate.net/profile/Sebastian-Krakowski/publication/339184283_Artificial_Intelligence_and_Management_The_Automation-

[Augmentation_Paradox/links/5e46af8a299bf1cdb92a57b0/Artificial-Intelligence-and-Management-The-Automation-Augmentation-Paradox.pdf](#).

Singh, S. K., Rathore, S., & Park, J. H. (2020). Blockiotintelligence: A blockchain-enabled intelligent IoT architecture with artificial intelligence. *Future Generation Computer Systems*, 110, 721-743.<https://www.academia.edu/download/95151360/j.future.2019.09.00220221202-1-y2qve7.pdf>.

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207-222.

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, 18(3), 429-472.