OPEN ACCESS

GRS Journal of Multidisciplinary Research and Studies
Abbreviate Tittle- GRS J Mul Res Stud
ISSN *(Online) - 3049-0561*
https://grspublisher.com/journal-details/GRSJMRS

Vol-2, Iss-6 (Jun- 2025)

The Role of AI in Recruitment: A Systematic Literature Review

[1]Priyabrata Swain, [2]Aradhna Malik

[1,2]Indian Institute of Technology, Kharagpur, West Bengal, India.

***Corresponding Author :Priyabrata Swain,**

"Indian Institute of Technology, Kharagpur, West Bengal, India"

Received: 28.02.2025 **Accepted: 26.05.2025** **Published: 02.06.2025**

Abstract: This systematic literature review (SLR) examines the role of artificial intelligence (AI) in recruitment techniques. AI technologies are being swiftly integrated into recruiting processes, enhancing and streamlining various stages from applicant sourcing to selection. The study aims to provide an overview of current research trends, challenges, and future directions in this topic. A comprehensive literature search utilising PRISMA principles on the Web of Science database yields 43 selected research papers from the past 15 years. The findings indicate that artificial intelligence has fundamentally transformed hiring processes by offering benefits such as reduced bias, enhanced cost-effectiveness, improved candidate experience, and increased efficiency. However, issues pertaining to data privacy, algorithmic bias, and human-AI interaction remain unresolved. Future research should focus on addressing these concerns and examining the ethical implications of artificial intelligence in recruitment.

Keywords: *AI in Recruitment, AI in Hiring, AI in Talent Acquisition, Artificial Intelligence in HR.*

Introduction

Artificial intelligence (AI) refers to technology that allows machines to execute tasks traditionally necessitating human intelligence, including information acquisition and processing, decision-making, and various cognitive functions. In recent years, the swift progression of Artificial Intelligence (AI) technology has transformed numerous industries, including recruitment.Artificial Intelligence (AI) is defined as a collection of computational techniques capable of emulating human decision-making and processes with such efficacy that they demonstrate intelligence, including the rapid processing of extensive data sets and the ability to identify, correlate, and predict patterns (Wisskirchen, G, 2017). In essence, AI can execute real-time judgements utilising established algorithms and computing systems formulated by data analysis, enabling it to independently learn and adapt, hence delivering more nuanced responses to various scenarios (Rodgers, W, 2023). This characterisation underscores AI's potential, especially in data processing (e.g., collection and refinement) and decision-making, prevalent in HR recruiting and selection procedures, signifying an increasing adoption of AI by organisations (Tiwari, S, 2023).Artificial Intelligence has emerged as a formidable instrument that is transforming conventional recruitment methodologies, providing novel opportunities for optimising operations, augmenting decision-making, and enhancing overall efficiency. The incorporation of AI in recruiting has the capacity to revolutionise how organisations seek, evaluate, and employ people, resulting in more efficient and data-informed hiring methodologies.AI-driven solutions are thought to augment job seekers' awareness, consideration, and engagement with prospective employers, hence enhancing the recognition of the employer's brand (Eubanks, 2022). Employing AI in recruiting processes facilitates the delivery of personalised and timely messaging to prospects, hence improving the efficiency of attracting and engaging prospective hires (Upadhyay & Khandelwal, 2018).The implementation of AI in recruiting is motivated by organisations' necessity to address the challenges of a competitive job market, the escalating number of job applications, and the requirement for varied and high-caliber people. Conventional recruiting techniques, which depend significantly on manual procedures and subjective judgments, are frequently laborious, resource-demanding, and susceptible to prejudice (Baracas & Selbst, 2016).

Artificial intelligence technologies, including machine learning algorithms, natural language processing, and predictive analytics, provide a more efficient and objective methodology for talent acquisition by automating repetitive operations, analysing extensive datasets, and discerning patterns and trends in candidate profiles. The utilisation of AI in recruiting includes many functions such as resume screening, candidate sourcing, skill evaluation, and interview scheduling (Johansson & Herranen, 2019). AI-driven recruitment platforms utilise algorithms to analyse resumes for pertinent keywords, align candidates with job specifications, and forecast candidate success based on historical data. These technologies assist recruiters in swiftly identifying top talent and facilitate informed decision-making by offering data-driven insights into candidate suitability and job compatibility. AI assists organisations in minimising expenses by conserving time and effort through the automation of repetitive operations for recruiters (Horodyski, P. 2023). By optimising processes like resume evaluation and candidate alignment, AI allows recruiters to concentrate on more strategic elements of talent acquisition.

Artificial intelligence can enhance the candidate experience by delivering expedited responses and comments, thereby improving the organization's employer brand and image. This enhanced speed and responsiveness foster a favourable recruitment experience for both recruiters and candidates. Many firms utilise AI insights to identify suitable people. Prominent technological firms including

As Google, Proctor & Gamble, Time Warner, Twitter, and Yahoo have utilised AI-driven biometrics to assess the cognitive processes of job candidates (Black & van Esch, 2020). AI is thought to alleviate recruiting bias and tackle issues associated with human weariness (Albert, 2019) owing to its automated capabilities. Although AI offers significant advantages in the recruitment process, its implementation is fraught with obstacles. Issues pertaining to data privacy, algorithmic bias, and the possible replacement of human recruiters have prompted ethical and practical questions regarding the application of AI in recruiting (Fernández-Martínez & Fernández, 2020).Furthermore, the swift advancement of technology innovation and the changing regulatory environment introduce further challenges for organisations aiming to integrate AI technologies into their recruitment strategy. The incorporation of AI in organisations, akin to other technologies, is shaped by multiple aspects, including the technological environment, internal and external contexts, asset specificity, and uncertainty (Pan et al., 2021). Certain organisations demonstrate reluctance to embrace AI technology owing to concerns regarding legal ramifications, ethical dilemmas, and related educational costs. Nonetheless, few organisations challenge the efficacy of AI in Human Resource Management (HRM), especially for staffing processes that include fundamental HR responsibilities such as recruiting and selection.

This systematic literature review seeks to offer a thorough examination of the function of AI in recruitment by consolidating previous research on the topic. This review aims to enhance understanding of AI's implications for recruitment by analysing the current state of AI adoption, identifying key trends and challenges, and exploring future research and practice directions regarding AI implementation, candidate experience, and recruitment costs. This review seeks to enlighten recruiters, job seekers, and organisations with the advantages and factors to consider while utilising AI in recruitment practices.

Methods

Information Sources

The database and search engine utilised for the search is Web of Science. The most recent search performed or data taken from the Web of Science database occurred on March 20, 2024.

Search Strategy and Selection Process

A search strategy is devised to locate pertinent material for this systematic review. This search technique is designed for the Web of Science database, utilising the following search terms:

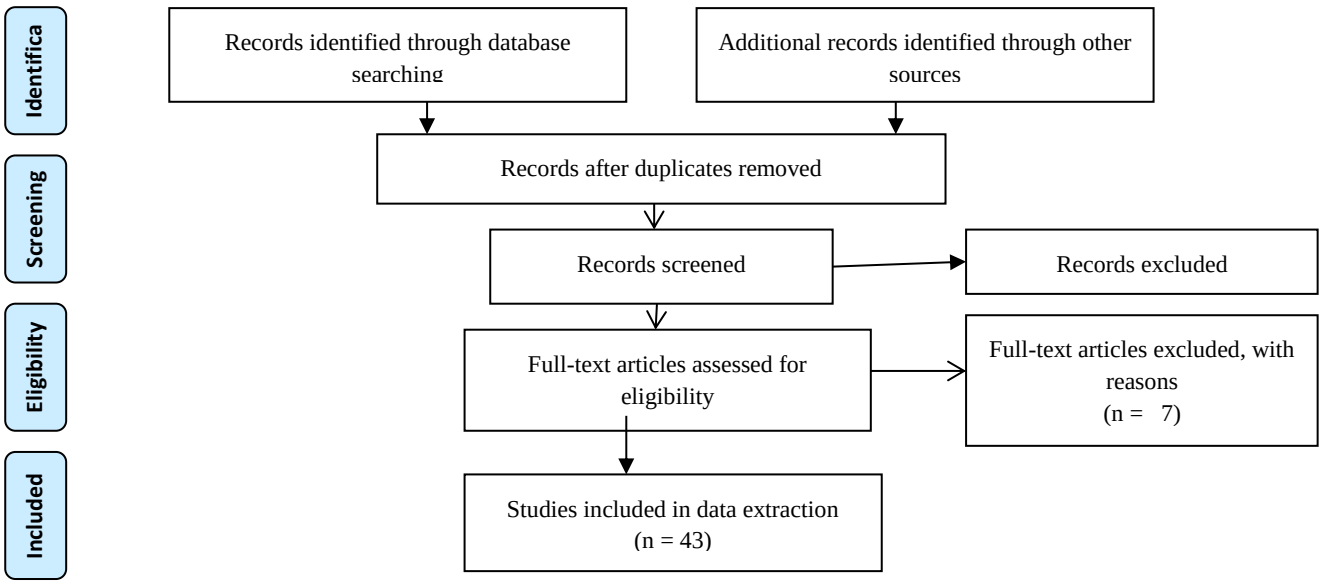
"AI in Recruitment","Artificial Intelligence in Recruitment", "AI in Hiring", and "AI in Talent Acquisition", for Topic (Title, Abstract, and Author Keyword) in the search bar. The search query is given below. All searches spanned from 2010 to 2024, limit to document types like 'Article', 'Review Article'; subject areas like 'Business', 'Management', 'Social Science Interdisciplinary', 'Industrial Relations Labor', 'Psychology Applied', 'Humanities Multidisciplinary', 'Education Educational Research', 'Computer Science Interdisciplinary Application', 'Computer Science Artificial Intelligence', 'Behavioral Sciences'; limit to the language "English" only. Filters are not used in 'Document Type' and in 'Country/Territory' and articles and review papers of various countries are found from Web of Science database. 92 papers from Web of Science website from 2010 till June 2024 are found. The last search conducted or data is extracted from Scopus database was on 20th March 2024. The search query of Web of Science database is given below.

(("AI" OR "Artificial Intelligence") AND ("Recruitment" OR "Hiring" OR "Talent Acquisition")).

Selection Process and Data Collection

The study is founded on research publications and review papers. Every record is examined by the author. A thorough examination is conducted to detect and eliminate any redundant entries, hence ensuring the review's quality. Following the elimination of duplicate records, 11 publications have been excluded from the study. The abstracts, introductions, and findings of the articles are meticulously examined for analysis and refinement to guarantee the quality and relevance of the academic material used in the review process. At this stage, 31 irrelevant papers are eliminated. Additionally, seven records are omitted due to lack of access to the complete text and case study. Forty-three papers were selected following the evaluation of each article based on the specified inclusion and exclusion criteria. Figure 1 presents the PRISMA Flow Diagram, which delineates the inclusion and removal of literature at each phase

.



(Figure-1)

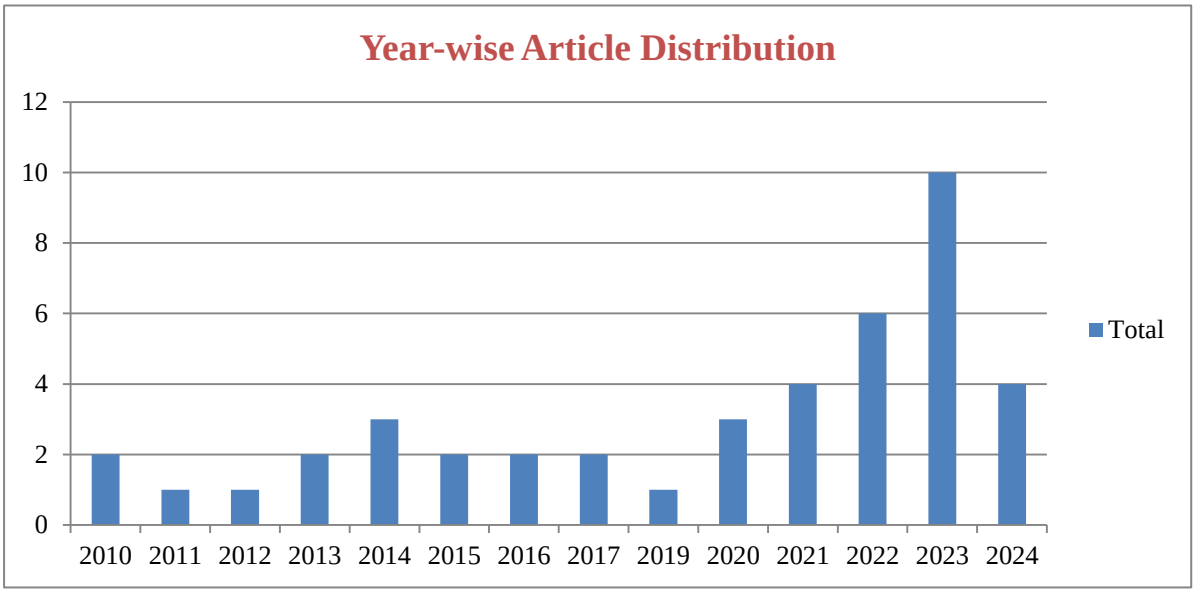
Reporting Results

Study Characteristics

Descriptive analysis categorises data into four areas: frequency or distribution of articles by year, country-wise distribution of records, publication house-wise record distribution, and subject area-wise paper distribution.

- **Year of Publication**

In our study, article on AI in Recruitment in an empirical investigation were published in 2010 (n=2), showing an increasing trend until 2023 (n=10) and by March 2024 (n=4). Figure 2 and Table 1 show this trend in detail.



(Figure-2)

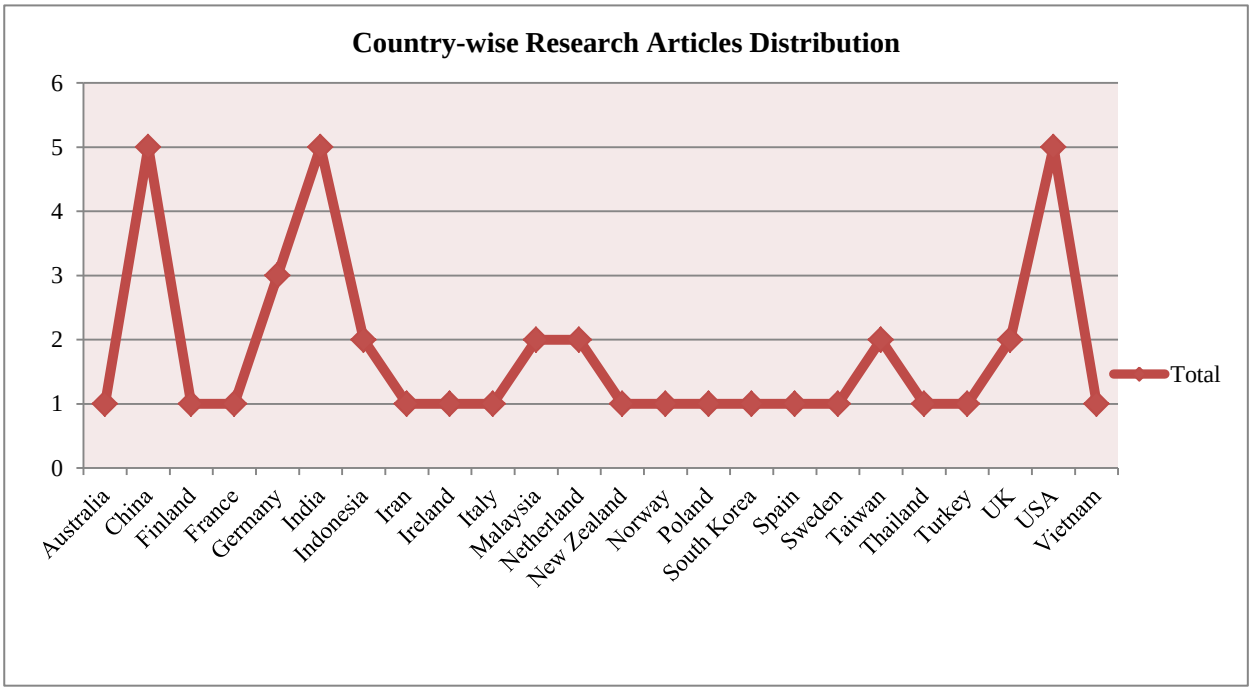
Year	No. of Publications
2010	2
2011	1
2012	1
2013	2
2014	3
2015	2
2016	2
2017	2
2019	1
2020	3
2021	4
2022	6
2023	10
2024	4
Grand Total	**43**

(Table-1)

Figure-2 and Table-1: The chronological trend in the publication of 'AI in Recruitment' or 'Artificial Intelligence (AI) in Hiring/Talent Acquisition/Recruitment' research papers.

- **Country-wise**

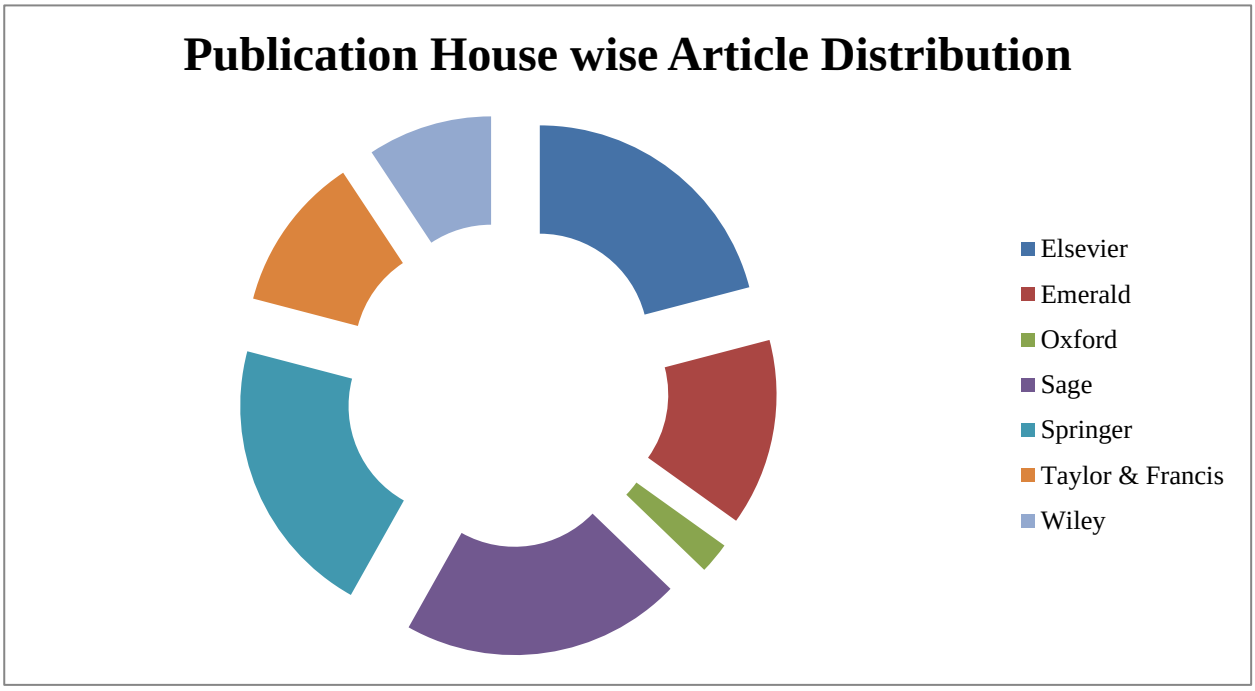
In terms of country representation, India and the USA each had the highest involvement in the selected studies, with five studies from each nation. The majority of studies were consistently conducted in China (n=8) and Germany (n=3), followed by Taiwan, the UK, the Netherlands, Malaysia, and Indonesia, each with n=2. Refer to Figure 3 for additional information.



(Figure-3)

- **Number of articles the publication house has published**

This comprehensive systematic literature review examines research articles on 'Role of AI in Recruitment' published by prominent publication houses. Figure 4 represents the distribution of 43 selected works from different publication houses. The vast majority of studies are from Elsevier Ltd. (n=9), Springer (n=9), SAGE Publications Inc. (n=9), followed by Emerald Publishing House (n=6), Taylor and Francis (n=5), Wiley (n=4), and Oxford publication house (n=1). The total list of articles published by different publication houses are represented in the figure below.



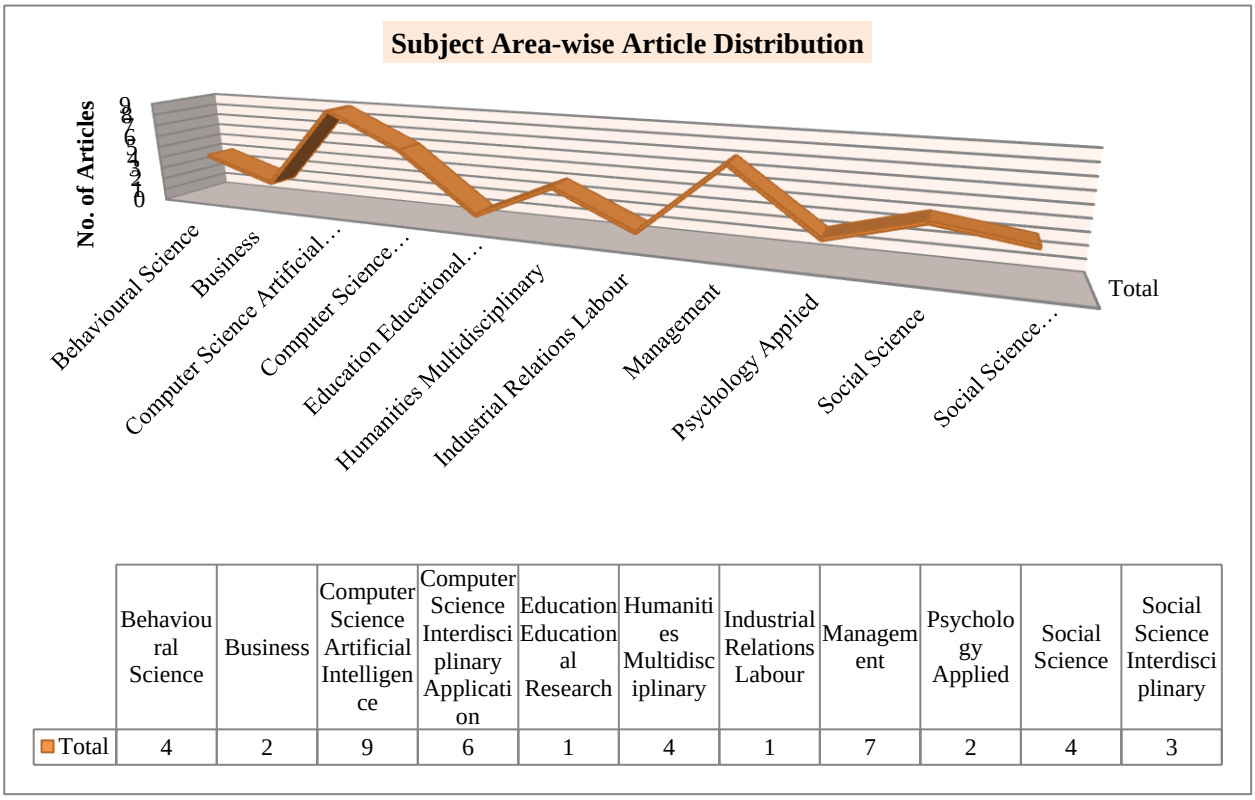
(Figure-4)

- **Subject Area Type**

Among the 43 papers selected for the systematic literature review, 9 originate from the field of 'Computer Science Artificial Intelligence,' 7 from 'Management,' 6 from 'Computer Science Interdisciplinary Applications,' 4 each from 'Behavioural Science,' 'Social Science,' and 'Humanities Multidisciplinary,' 3 from 'Social Science Interdisciplinary,' 2 each from 'Business' and 'Applied Psychology,' and 1 each from 'Industrial Relations Labour' and 'Educational Research.' Table 2 and Figure 5 depict the same information.

Subject Area	No. of Article
Behavioral Science	4
Business	2
Computer Science Artificial Intelligence	9
Computer Science Interdisciplinary Application	6
Education Educational Research	1
Humanities Multidisciplinary	4
Industrial Relations Labor	1
Management	7
Psychology Applied	2
Social Science	4
Social Science Interdisciplinary	3
Grand Total	**43**

(Table-2)



	Behavioural Science	Business	Computer Science Artificial Intelligence	Computer Science Interdisciplinary Application	Education Educational Research	Humanities Multidisciplinary	Industrial Relations Labour	Management	Psychology Applied	Social Science	Social Science Interdisciplinary
Total	4	2	9	6	1	4	1	7	2	4	3

(Figure-5)

Synthesis of Results

The systematic literature study on the Role of AI in Recruitment has highlighted some critical topics that significantly influence the recruitment process within organisations. This synthesis of findings offers a thorough comprehension of AI's involvement in recruitment.

- **Theme-1: Impact of AI in Recruitment process**

The technology has transformed recruitment procedures by optimising duties such as resume evaluation, candidate identification, and interview scheduling. Automated systems can swiftly and efficiently analyse extensive data sets, resulting in enhanced decision-making and decreased time-to-hire (Indarapu et al., 2023). Moreover, AI techniques can enhance the identification of premier talent by aligning candidate abilities and qualifications with job specifications. Concerns have been expressed regarding potential biases in AI algorithms that may perpetuate prejudice in recruitment.

The incorporation of AI in recruitment procedures has profoundly altered how organisations seek, evaluate, and employ talent. A significant effect of AI in recruitment is the automation of monotonous and time-intensive processes, including resume screening. AI-driven algorithms can evaluate resumes significantly more rapidly than human recruiters, resulting in a more efficient screening procedure. This not only conserves time but also

guarantees that all candidates are assessed equitably according to established standards.

Furthermore, AI has empowered organisations to improve their candidate finding strategies (Pillai & Sivathanu, 2020). Utilising AI algorithms, recruiters may sift through extensive databases of prospective candidates to pinpoint individuals whose talents and experiences align closely with the job specifications. This focused strategy not only expedites the sourcing process but also enhances the probability of identifying qualified individuals who may have been disregarded by conventional approaches.

Besides optimising recruitment processes, AI has transformed interview scheduling. AI-driven technologies can assess the availability of candidates and interviewers, considering time zones and preferences, to provide seamless interview scheduling. This not only eradicates the repetitive communication usually linked to scheduling but also guarantees a favourable candidate experience by facilitating prompt and easy interview appointments.

The influence of AI on recruitment procedures is predominantly beneficial; yet, there are apprehensions about the potential biases inherent in AI algorithms. AI system biases can sustain discrimination based on gender, ethnicity, or age, resulting in inequitable hiring practices (West et al., 2019). Organisations must remain attentive to the design and training of their AI tools to reduce biases and enhance diversity and inclusion in recruitment. Transparency and periodic audits of AI systems are crucial for detecting and rectifying potential biases.
The influence of AI on recruitment processes is unequivocal, providing substantial advantages in efficiency, precision, and applicant experience. Organisations must stay attentive in mitigating any biases and ensuring that AI is employed responsibly to facilitate equitable and inclusive employment procedures.

- **Theme-2: Ethical and Legal Implications of AI in Recruitment**

The application of AI in recruitment presents significant ethical and legal issues with data privacy, transparency, and equity. Employers must guarantee that AI systems adhere to legislation such as GDPR and do not violate candidates' rights. Furthermore, the possibility of algorithmic bias in AI tools presents a considerable challenge, since biassed decision-making may result in discriminatory employment practices (Houser, 2019). Organisations must develop safeguards to reduce bias and guarantee a fair and inclusive recruitment process. The ethical ramifications of employing AI in recruitment are complex and necessitate thorough deliberation by organisations. A primary concern is data privacy and security. AI systems gather and evaluate extensive candidate data, including resumes, application forms, social media profiles, and online behaviour. Organisations must guarantee the responsible handling of this data, using suitable steps to safeguard applicants' privacy and avert unauthorised access or misuse.

Transparency becomes a crucial ethical consideration in AI recruitment. Candidates possess the right to be informed about the utilisation of AI technologies in the recruiting process and the manner in which their data is employed. Organisations must furnish explicit information on the application of AI, including the criteria employed for candidate assessment and the decision-making methodology. Transparent communication fosters confidence with candidates and displays a dedication to ethical recruitment processes (Jiang & Shen, 2023).

Equity and non-discrimination are essential ethical values that must be maintained in AI recruitment. AI algorithmic biases might unintentionally sustain prejudice by privileging specific groups or attributes over others. Organisations must diligently oversee and rectify biases in their AI systems to guarantee that employment decisions are predicated on merit and qualifications rather than extraneous influences. Regular audits and diversity evaluations can assist in identifying and correcting any prejudices present in the recruitment process. Organisations employing AI in recruitment must adhere to applicable legislation and guidelines to safeguard candidates' rights. The General Data Protection Regulation (GDPR) in the European Union establishes stringent criteria for data protection and privacy. Organisations must guarantee that their AI systems comply with GDPR stipulations, including acquiring explicit consent from candidates prior to processing their personal data and offering avenues for data access and deletion upon request. The ethical and legal ramifications of AI in recruitment are essential factors for organisations aiming to utilise AI technology in their hiring procedures. By emphasising data protection, transparency, equity, and adherence to rules, organisations may guarantee that their application of AI in recruitment is ethical, responsible, and consistent with industry best practices.

- **Theme-3: Candidate Experience and Engagement in AI-driven Recruitment**

AI technology can improve the candidate experience by offering personalised interactions, prompt feedback, and efficient communication during the recruitment process. Chatbots and virtual assistants can interact with candidates, address their enquiries, and furnish updates on their application status, resulting in a more favourable overall experience. Nonetheless, it is essential to find a balance between automation and human interaction in recruiting, as an overdependence on AI technologies may estrange candidates and weaken the personal rapport in the hiring process (Fritts & Cabrera, 2021). The applicant experience is a vital component of recruiting that can profoundly influence an organization's employer brand and talent acquisition strategies. AI-driven recruiting solutions present distinctive opportunities to improve the candidate experience through personalised and efficient interactions at each phase of the recruitment process. Chatbots can interact with candidates in real-time, address common enquiries, and furnish information on application status, so facilitating a seamless and responsive experience.

Prompt feedback is an essential component of the candidate experience that AI can enhance. AI-driven solutions can autonomously deliver tailored feedback to candidates based on their evaluation outcomes or interview performance. This not only informs candidates of their progress in the recruiting process but also illustrates the organization's dedication to transparency and communication. Delivering prompt feedback can assist candidates in enhancing their abilities and performance for future opportunities. Furthermore, AI technologies facilitate organisations in interacting with candidates across many channels, including email, social media, and messaging platforms, to accommodate diverse preferences and communication styles. Virtual assistants can aid candidates by addressing enquiries, arranging interviews, and supplying information regarding the organisation and job position, thereby fostering a seamless and participatory encounter. Utilising AI solutions for applicant engagement enables organisations to cultivate robust relationships with candidates and distinguish themselves as preferred employers.

Although AI-driven recruitment technologies have several advantages for improving the candidate experience, organisations must achieve a balance between automation and personal interaction. Overdependence on AI technologies may result in a deficiency of personalisation and human connection, thereby alienating candidates and reducing their involvement with the recruitment process. Organisations must ensure that AI is utilised to enhance, rather than supplant, human interactions in recruitment, preserving a personalised and sympathetic approach to applicant engagement. AI technologies possess the capacity to transform the candidate experience in recruiting through personalised interactions, prompt feedback, and efficient communication. By utilising AI tools to interact with candidates efficiently and improve their recruitment experience, organisations can foster a good and memorable journey that demonstrates their dedication to candidate-centric recruitment methodologies.

- **Theme-4: Future Trends and Challenges in AI Recruitment**

As artificial intelligence advances, novel trends and difficulties are arising in the recruitment domain. Predictive analytics and machine learning algorithms are being employed to anticipate future employment requirements, identify high-potential applicants, and enhance workforce planning (Vishwanath & Vaddepalli, 2023). Nonetheless, the swift progression of technological innovation presents problems, including the necessity for HR professionals to enhance their skills in utilising AI tools effectively, overseeing the shift to AI-driven recruitment methodologies, and mitigating apprehensions regarding job displacement resulting from automation. Organisations must proactively adapt to these changes to maintain competitiveness in the dynamic recruitment landscape.

The future of AI in recruitment possesses significant potential to revolutionise the methods by which organisations attract, evaluate, and employ talent. A significant trend influencing the future of AI recruiting is the growing application of predictive analytics and machine learning algorithms to anticipate hiring requirements and pinpoint high-potential individuals. Passive candidates can be found and recruited using AI-enabled software from professional and social networking platforms (Ore & Spostao, 2022). Through the analysis of historical recruiting data, organisations may forecast future talent needs, proactively identify prospects, and customise recruitment strategies to align with changing business demands (Isson & Harriott, 2016).
A notable trend in AI recruitment is the incorporation of AI-driven technologies for skills assessment and candidate evaluation. Machine learning algorithms can objectively evaluate applicant replies to assessment tasks, including coding challenges and situational judgement assessments, to determine their skills and competences (Liem et al., 2018). This data-centric methodology not only improves the precision of candidate assessment but also mitigates bias in decision-making, resulting in more enlightened hiring choices.

Moreover, AI technologies are progressively utilised to enhance workforce planning and talent management techniques. Through the analysis of workforce data and trends, organisations can discern skill deficiencies, succession vulnerabilities, and developmental prospects within their personnel, so facilitating data-driven decisions on recruiting, training, and career advancement. AI-powered workforce planning solutions assist organisations in refining their talent strategy and ensuring coherence with business objectives. Although AI offers several prospects for recruiting, organisations have hurdles in the successful adoption and implementation of AI technologies. A primary problem is enhancing the skills of HR professionals to properly utilise AI tools and data in recruitment procedures (Halid et al., 2024).Human Resources professionals must have digital literacy and data analytic competencies to evaluate AI-generated insights and make informed decisions on talent acquisition and management.

Another problem involves overseeing the move to AI-driven recruitment tactics within organisations. Resistance to change, insufficient awareness of AI capabilities, and apprehensions around job displacement may impede the integration of AI technology in recruitment (Bianco, 2021). Organisations must allocate resources to change management initiatives, training programs, and communication strategies to facilitate a seamless transition to AI-driven recruitment procedures and cultivate a culture of innovation and continuous learning.
Furthermore, apprehensions regarding job displacement caused by automation and artificial intelligence are widespread in the recruitment sector. Although AI technologies can enhance recruiting procedures and increase efficiency, there are concerns that they may supplant human functions and result in workforce reductions (Arslan et al., 2022).Organisations must tackle these issues by underscoring the synergistic relationship between AI and human abilities in recruitment, emphasising the significance of human discernment, empathy, and creativity in decision-making processes. The future of AI in recruitment is characterised by innovative trends including predictive analytics, skills evaluation tools, and workforce planning tactics. Organisations can gain from the revolutionary capabilities of AI technologies in recruitment; but, they must also confront issues associated with upskilling HR experts, managing change, and addressing job displacement concerns. By proactively tackling these difficulties and adopting AI-driven recruitment tactics, organisations can maintain a competitive edge and foster innovation in talent acquisition and management.

Discussion

The systematic literature review of the role of AI in recruiting has yielded significant insights into the effects of AI technologies on recruitment procedures, ethical and legal considerations, candidate experience, and prospective trends and problems. The research consolidated information from many studies to provide a thorough grasp of AI's impact on the recruitment landscape. The incorporation of AI in recruitment procedures has transformed how organisations attract, evaluate, and employ people. Artificial intelligence technologies have optimised processes including resume evaluation, candidate identification, and interview coordination, resulting in enhanced efficiency and diminished time-to-hire. AI-driven automated systems can swiftly and precisely analyse extensive data sets, allowing recruiters to make more informed judgements during the recruitment process. By automating monotonous and time-intensive chores, AI has liberated recruiters to concentrate on strategic elements of recruitment, such as engaging with premier talent and improving employer branding.

The review emphasised the ethical and legal issues that organisations must confront when integrating AI into recruitment processes. Concerns regarding potential biases in AI algorithms that may perpetuate prejudice in the recruitment process were recognised as a substantial challenge. Organisations must ensure that their AI tools are developed and trained to reduce biases and

foster diversity and inclusion. Transparency and periodic audits of AI algorithms are crucial for ensuring equity and responsibility in recruitment processes. Furthermore, adherence to data protection legislation like GDPR is essential for safeguarding candidates' rights and ensuring the ethical application of AI technology in recruitment.

Artificial intelligence technologies have revolutionised the candidate experience in recruiting by facilitating personalised interactions, prompt feedback, and efficient communication. Chatbots and virtual assistants have improved candidate engagement by delivering real-time assistance, addressing enquiries, and supplying updates on application status. The analysis highlighted the necessity of harmonising technology with human interaction in recruitment to preserve a favourable candidate relationship. Utilising AI solutions for candidate interaction enables organisations to develop a more interactive and tailored recruitment experience that demonstrates their dedication to candidate-centric methodologies.

The research highlighted growing trends and problems in AI recruitment, including predictive analytics, skills evaluation tools, and workforce planning techniques. Artificial intelligence technologies are progressively utilised to predict recruitment requirements, discern high-potential applicants, and enhance talent management techniques. Nonetheless, issues include the upskilling of HR experts, the management of the transition to AI-driven recruitment tactics, and the mitigation of worries around job displacement due to automation were also emphasised. Organisations must proactively adjust to these changes to remain competitive in the dynamic recruitment environment.

The systematic literature review about the role of AI in recruiting has yielded significant insights into the opportunities and obstacles linked to the implementation of AI technology in recruitment processes. Organisations can effectively leverage AI to attract, assess, and hire top talent in a fair, efficient, and inclusive manner by understanding its impact on recruitment processes, addressing ethical and legal implications, enhancing candidate experience, and preparing for future trends and challenges.

Conclusion, Limitations, and Future Directions

The thorough literature study on the function of AI in recruiting has revealed the transformative influence of AI technology on recruitment procedures. The results have shown the significant benefits of AI in optimising workloads, improving decision-making, and augmenting the entire candidate experience. By automating monotonous tasks such as resume screening and interview scheduling, AI has enabled organisations to function more efficiently and focus on critical recruitment elements. The review has underscored the imperative to rectify potential biases in AI systems to maintain equitable and inclusive employment procedures.

This evaluation concurrently recognises specific constraints. The review was conducted using scientific literature available till March 2024. Secondly, we exclusively extracted records from the Web of Science database for this review. Third, our eligibility criteria rejected papers not written in English. It is plausible to assert that research undertaken in multiple languages may have substantially contributed to this review. Numerous opportunities for future study in the domain of AI in recruitment are emerging. A crucial domain for further investigation is to the creation of AI systems proficient in reducing prejudices and promoting diversity in recruiting. Research examining the ethical ramifications of AI in recruitment, as well as methods to enhance transparency and accountability, is of considerable importance. Moreover, research examining the lasting effects of AI on worker dynamics, job satisfaction, and organisational success may provide essential insights for practitioners and policymakers. Furthermore, subsequent study may investigate the optimisation of the applicant experience using AI-driven recruitment strategies, examining novel approaches to personalise interactions, provide prompt feedback, and improve engagement. Comprehending the changing trends and obstacles in AI recruiting, including the incorporation of predictive analytics and machine learning algorithms, will be crucial for organisations aiming to sustain competitiveness in the rapidly transforming recruitment environment.

The systematic literature analysis has provided a thorough examination of AI's function in recruitment, highlighting its advantages, limitations, and future implications for talent acquisition. By mitigating biases, enhancing transparency, and judiciously utilising AI technology, organisations may capitalise on AI's capabilities to efficiently attract, evaluate, and hire premier talent. As AI advances, ongoing research and innovation will be essential to maximise its potential in recruiting and guarantee equitable and inclusive practices throughout the hiring process.

References

1. Acikgoz, Y., Davison, K. H., Compagnone, M., & Laske, M. (2020). Justice perceptions of artificial intelligence in selection. *International Journal of Selection and Assessment*, *28*(4), 399-416.
2. Allal-Chérif, O., Aránega, A. Y., & Sánchez, R. C. (2021). Intelligent recruitment: How to identify, select, and retain talents from around the world using artificial intelligence. *Technological Forecasting and Social Change*, *169*, 120822.
3. Arslan, A., Cooper, C., Khan, Z., Golgeci, I., & Ali, I. (2022). Artificial intelligence and human workers interaction at team level: a conceptual assessment of the challenges and potential HRM strategies. *International Journal of Manpower*, *43*(1), 75-88.
4. Barocas, S., & Selbst, A. D. (2016). Big data's disparate impact. *Calif. L. Rev.*, *104*, 671.
5. Bianco, M. (2021). *Overcoming the social barriers of AI adoption* (Doctoral dissertation, Eindhoven University of Technology).
6. Bursell, M., & Roumbanis, L. (2024). After the algorithms: A study of meta-algorithmic judgments and diversity in the hiring process at a large multisite company. *Big Data & Society*, *11*(1), 20539517231221758.
7. Chen, Z. (2023). Ethics and discrimination in artificial intelligence-enabled recruitment practices. *Humanities and Social Sciences Communications*, *10*(1), 1-12.
8. Van Esch, P., & Black, J. S. (2019). Factors that influence new generation candidates to engage with and complete digital, AI-enabled recruiting. *Business horizons*, *62*(6), 729-739.
9. Van Esch, P., Black, J. S., & Ferolie, J. (2019). Marketing AI recruitment: The next phase in job

application and selection. *Computers in Human Behavior*, *90*, 215-222.

10. Eubanks, B. (2022). *Artificial intelligence for HR: Use AI to support and develop a successful workforce*. Kogan Page Publishers.
11. Fernández-Martínez, C., & Fernández, A. (2020). AI and recruiting software: Ethical and legal implications. *Paladyn, Journal of Behavioral Robotics*, *11*(1), 199-216.
12. Figueroa-Armijos, M., Clark, B. B., & da Motta Veiga, S. P. (2023). Ethical perceptions of AI in hiring and organizational trust: The role of performance expectancy and social influence. *Journal of Business Ethics*, *186*(1), 179-197.
13. Fritts, M., & Cabrera, F. (2021). AI recruitment algorithms and the dehumanization problem. *Ethics and Information Technology*, *23*, 791-801.
14. Giermindl, L. M., Strich, F., Christ, O., Leicht-Deobald, U., & Redzepi, A. (2022). The dark sides of people analytics: reviewing the perils for organisations and employees. *European Journal of Information Systems*, *31*(3), 410-435.
15. Gonzalez, M. F., Liu, W., Shirase, L., Tomczak, D. L., Lobbe, C. E., Justenhoven, R., & Martin, N. R. (2022). Allying with AI? Reactions toward human-based, AI/ML-based, and augmented hiring processes. *Computers in Human Behavior*, *130*, 107179.
16. Goretzko, D., & Israel, L. S. F. (2021). Pitfalls of machine learning-based Personnel Selection. *Journal of Personnel Psychology*.
17. Halid, H., Ravesangar, K., Mahadzir, S. L., & Halim, S. N. A. (2024). Artificial intelligence (AI) in human resource management (HRM). In *Building the Future with Human Resource Management* (pp. 37-70). Cham: Springer International Publishing.
18. Hofeditz, L., Clausen, S., Rieß, A., Mirbabaie, M., & Stieglitz, S. (2022). Applying XAI to an AI-based system for candidate management to mitigate bias and discrimination in hiring. *Electronic Markets*, *32*(4), 2207-2233.
19. Horodyski, P. (2023). Applicants' perception of artificial intelligence in the recruitment process. *Computers in Human Behavior Reports*, *11*, 100303.
20. Houser, K. A. (2019). Can AI solve the diversity problem in the tech industry: Mitigating noise and bias in employment decision-making. *Stan. Tech. L. Rev.*, *22*, 290.
21. Huang, M. H., Rust, R., & Maksimovic, V. (2019). The feeling economy: Managing in the next generation of artificial intelligence (AI). *California management review*, *61*(4), 43-65.
22. Hunkenschroer, A. L., & Luetge, C. (2022). Ethics of AI-enabled recruiting and selection: A review and research agenda. *Journal of Business Ethics*, *178*(4), 977-1007.
23. Indarapu, S. R. K., Vodithala, S., Kumar, N., Kiran, S., Reddy, S. N., & Dorthi, K. (2023). Exploring human resource management intelligence practices using machine learning models. *The Journal of High Technology Management Research*, *34*(2), 100466.
24. Isson, J. P., & Harriott, J. S. (2016). *People analytics in the era of big data: Changing the way you attract, acquire, develop, and retain talent*. John Wiley & Sons.
25. Jatobá, M. N., Ferreira, J. J., Fernandes, P. O., & Teixeira, J. P. (2023). Intelligent human resources for the adoption of artificial intelligence: a systematic literature review. *Journal of Organizational Change Management*, *36*(7), 1099-1124.
26. Jiang, H., & Shen, H. (2023). Toward a relational theory of employee engagement: Understanding authenticity, transparency, and employee behaviors. *International Journal of Business Communication*, *60*(3), 948-975.
27. Johansson, J., & Herranen, S. (2019). The application of artificial intelligence (AI) in human resource management: Current state of AI and its impact on the traditional recruitment process.
28. Keppeler, F. (2024). No thanks, dear AI! Understanding the effects of disclosure and deployment of artificial intelligence in public sector recruitment. *Journal of Public Administration Research and Theory*, *34*(1), 39-52.
29. Köchling, A., & Wehner, M. C. (2023). Better explaining the benefits why AI? Analyzing the impact of explaining the benefits of AI-supported selection on applicant responses. *International Journal of Selection and Assessment*, *31*(1), 45-62.
30. Koechling, A., Wehner, M. C., & Warkocz, J. (2023). Can I show my skills? Affective responses to artificial intelligence in the recruitment process. *Review of Managerial Science*, *17*(6), 2109-2138.
31. Kong, Y., & Ding, H. (2024). Tools, potential, and pitfalls of social media screening: Social profiling in the era of AI-assisted recruiting. *Journal of Business and Technical Communication*, *38*(1), 33-65.
32. Kot, S., Hussain, H. I., Bilan, S., Haseeb, M., & Mihardjo, L. W. W. (2021). The role of artificial intelligence recruitment and quality to explain the phenomenon of employer reputation. *Business Economics and Management (JBEM)*, *22*(4), 867-883.
33. Liem, C. C., Langer, M., Demetriou, A., Hiemstra, A. M., Sukma Wicaksana, A., Born, M. P., & König, C. J. (2018). Psychology meets machine learning: Interdisciplinary perspectives on algorithmic job candidate screening. *Explainable and interpretable models in computer vision and machine learning*, 197-253.
34. da Motta Veiga, S. P., Figueroa-Armijos, M., & Clark, B. B. (2023). Seeming ethical makes you attractive: Unraveling how ethical perceptions of AI in hiring impacts organizational innovativeness and attractiveness. *Journal of Business Ethics*, *186*(1), 199-216.
35. Noble, S. M., Foster, L. L., & Craig, S. B. (2021). The procedural and interpersonal justice of automated application and resume screening. *International Journal of Selection and Assessment*, *29*(2), 139-153.
36. Palos-Sánchez, P. R., Baena-Luna, P., Badicu, A., & Infante-Moro, J. C. (2022). Artificial intelligence and human resources management: A bibliometric analysis. *Applied Artificial Intelligence*, *36*(1), 2145631.
37. Pan, Y., & Froese, F. J. (2023). An interdisciplinary review of AI and HRM: Challenges and future directions. *Human resource management review*, *33*(1), 100924.

38. Pan, Y., Froese, F., Liu, N., Hu, Y., & Ye, M. (2023). The adoption of artificial intelligence in employee

39. In *Artificial intelligence and international HRM* (pp. 60-82). Routledge.

40. Pessach, D., & Shmueli, E. (2021). Improving fairness of artificial intelligence algorithms in privileged-group selection bias data settings. *Expert Systems with Applications*, *185*, 115667.

41. Pessach, D., Singer, G., Avrahami, D., Ben-Gal, H. C., Shmueli, E., & Ben-Gal, I. (2020). Employees recruitment: A prescriptive analytics approach via machine learning and mathematical programming. *Decision support systems*, *134*, 113290.

42. Pillai, R., & Sivathanu, B. (2020). Adoption of artificial intelligence (AI) for talent acquisition in IT/ITeS organizations. *Benchmarking: An International Journal*, *27*(9), 2599-2629.

43. Prikshat, V., Islam, M., Patel, P., Malik, A., Budhwar, P., & Gupta, S. (2023). AI-Augmented HRM: Literature review and a proposed multilevel framework for future research. *Technological Forecasting and Social Change*, *193*, 122645.

44. Rhea, A. K., Markey, K., D'Arinzo, L., Schellmann, H., Sloane, M., Squires, P., ... & Stoyanovich, J. (2022). An external stability audit framework to test the validity of personality prediction in AI hiring. *Data Mining and Knowledge Discovery*, *36*(6), 2153-2193.

45. Rodgers, W., Murray, J. M., Stefanidis, A., Degbey, W. Y., & Tarba, S. Y. (2023). An artificial intelligence algorithmic approach to ethical decision-making in human resource management processes. *Human resource management review*, *33*(1), 100925.

46. Singh, A., & Shaurya, A. (2021). Impact of Artificial Intelligence on HR practices in the UAE. *Humanities and Social Sciences Communications*, *8*(1), 1-9.

47. Ore, O., & Sposato, M. (2022). Opportunities and risks of artificial intelligence in recruitment and selection. *International Journal of Organizational Analysis*, *30*(6), 1771-1782.

48. Sithambaram, R. A., & Tajudeen, F. P. (2023). Impact of artificial intelligence in human resource management: a qualitative study in the Malaysian context. *Asia Pacific Journal of Human Resources*, *61*(4), 821-844.

49. Su, Y. S., Suen, H. Y., & Hung, K. E. (2021). Predicting behavioral competencies automatically from facial expressions in real-time video-recorded interviews. *Journal of Real-Time Image Processing*, *18*(4), 1011-1021.

50. Suen, H. Y., & Hung, K. E. (2023). Building trust in automatic video interviews using various AI interfaces: Tangibility, immediacy, and transparency. *Computers in Human Behavior*, *143*, 107713.

51. Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial intelligence in human resources management: Challenges and a path forward. *California Management Review*, *61*(4), 15-42.

recruitment: The influence of contextual factors.

52. Tanantong, T., & Wongras, P. (2024). A UTAUT-based framework for analyzing users' intention to adopt artificial intelligence in human resource recruitment: a case study of Thailand. *Systems*, *12*(1), 28.

53. Tian, X., Pavur, R., Han, H., & Zhang, L. (2023). A machine learning-based human resources recruitment system for business process management: using LSA, BERT and SVM. *Business Process Management Journal*, *29*(1), 202-222.

54. Tilmes, N. (2022). Disability, fairness, and algorithmic bias in AI recruitment. *Ethics and Information Technology*, *24*(2), 21.

55. Tiwari, S. (2022). Artificial intelligence implications in engineering and production. *Engineering Proceedings*, *31*(1), 16.

56. Tsoutsanis, P., & Tsoutsanis, A. (2024). Evaluation of Large language model performance on the Multi-Specialty Recruitment Assessment (MSRA) exam. *Computers in biology and medicine*, *168*, 107794.

57. Upadhyay, A. K., & Khandelwal, K. (2018). Applying artificial intelligence: implications for recruitment. *Strategic HR Review*, *17*(5), 255-258.

58. Vishwanath, B., & Vaddepalli, S. (2023). The future of work: Implications of artificial intelligence on hr practices. *Tuijin Jishu/Journal of Propulsion Technology*, *44*(3), 1711-1724.

59. Wesche, J. S., & Sonderegger, A. (2021). Repelled at first sight? Expectations and intentions of job-seekers reading about AI selection in job advertisements. *Computers in human behavior*, *125*, 106931.

60. West, S. M., Whittaker, M., & Crawford, K. (2019). Discriminating systems. *AI Now*, *2019*, 1-33.

61. Will, P., Krpan, D., & Lordan, G. (2023). People versus machines: introducing the HIRE framework. *Artificial Intelligence Review*, *56*(2), 1071-1100.

62. Wisskirchen, G., Biacabe, B. T., Bormann, U., Muntz, A., Niehaus, G., Soler, G. J., & von Brauchitsch, B. (2017). Artificial intelligence and robotics and their impact on the workplace. *IBA Global Employment Institute*, *11*(5), 49-67.

63. Yam, J., & Skorburg, J. A. (2021). From human resources to human rights: Impact assessments for hiring algorithms. *Ethics and Information Technology*, *23*(4), 611-623.

64. Yi, P. K., Ray, N. D., & Segall, N. (2023). A novel use of an artificially intelligent Chatbot and a live, synchronous virtual question-and answer session for fellowship recruitment. *BMC Medical Education*, *23*(1), 152.

65. Zhang, L., & Yencha, C. (2022). Examining perceptions towards hiring algorithms. *Technology in Society*, *68*, 101848.