COSTING: Journal of Economic, Business and Accounting
Volume 8 Nomor 4, Tahun 2025
e-ISSN : 2597-523

ADOPTION OF AI IN RECRUITMENT: IMPLICATIONS FOR BIAS, EFFICIENCY, AND CANDIDATE EXPERIENCE

PENERAPAN KECERDASAN BUATAN (AI) DALAM REKRUTMEN: DAMPAK TERHADAP BIAS, EFISIENSI, DAN PENGALAMAN CALON KARYAWAN

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ABSTRACT

However, while the integration of AI into recruitment practices offers numerous potential benefits, it also raises critical concerns regarding fairness, transparency, and candidate experience. A central issue is the risk of algorithmic bias. The purpose of this study is to analyze the adoption of Artificial Intelligence (AI) in the recruitment process: its implications for bias, efficiency, and candidate experience. This study employs a literature review methodology to systematically analyze and synthesize existing research on the adoption of Artificial Intelligence (AI) in recruitment, with a particular focus on three interrelated aspects: bias, efficiency, and candidate experience. This literature review explored the multifaceted implications of Artificial Intelligence (AI) adoption in recruitment, focusing on three key dimensions: bias, efficiency, and candidate experience. The findings reveal that while AI technologies offer substantial benefits in terms of operational speed and cost reduction, they also introduce significant ethical, social, and psychological challenges.
Keywords: *Adoption, AI, Recruitment*

ABSTRAK

Meskipun integrasi kecerdasan buatan (AI) ke dalam praktik perekrutan menawarkan berbagai manfaat potensial, hal ini juga menimbulkan kekhawatiran kritis terkait keadilan, transparansi, dan pengalaman kandidat. Masalah utama adalah risiko bias algoritmik. Tujuan studi ini adalah menganalisis penerapan Kecerdasan Buatan (AI) dalam proses rekrutmen: implikasinya terhadap bias, efisiensi, dan pengalaman kandidat. Studi ini menggunakan metodologi tinjauan literatur untuk menganalisis dan mensintesis secara sistematis penelitian yang ada tentang penerapan Kecerdasan Buatan (AI) dalam rekrutmen, dengan fokus khusus pada tiga aspek yang saling terkait: bias, efisiensi, dan pengalaman kandidat. Tinjauan literatur ini mengeksplorasi implikasi multifaset dari penerapan Kecerdasan Buatan (AI) dalam perekrutan, dengan fokus pada tiga dimensi utama: bias, efisiensi, dan pengalaman kandidat. Temuan menunjukkan bahwa meskipun teknologi AI menawarkan manfaat substansial dalam hal kecepatan operasional dan pengurangan biaya, mereka juga menimbulkan tantangan etis, sosial, dan psikologis yang signifikan.
Kata Kunci: Penerapan, AI, Perekrutan

INTRODUCTION

In recent years, the adoption of Artificial Intelligence (AI) technologies in Human Resource Management (HRM) has accelerated, with recruitment and selection processes standing out as one of the key areas of transformation. Organizations across industries have increasingly turned to AI-driven tools to streamline the hiring process, reduce costs, and make more informed decisions (Upadhyay & Khandelwal, 2018). AI in recruitment encompasses a range of applications, including resume screening, chatbots for candidate communication, predictive analytics for assessing candidate fit, and automated interview platforms. These technologies promise efficiency and scalability in hiring, enabling recruiters to manage large volumes of applications with greater speed and consistency.

However, while the integration of AI into recruitment practices offers numerous potential benefits, it also raises critical concerns regarding fairness, transparency, and candidate experience. A central issue is the risk of algorithmic bias. AI systems learn from historical data, which may reflect and even amplify existing human prejudices (Raghavan et al., 2020). If not carefully monitored and corrected, such biases can lead to discriminatory hiring outcomes, reinforcing gender, racial, or socioeconomic inequalities. For example, Amazon famously scrapped an AI recruitment tool after discovering it penalized resumes that included the word "women's" or were associated with all-women colleges (Dastin, 2018).

Moreover, the use of AI in recruitment challenges traditional perceptions of fairness and personal connection in hiring. Candidates often perceive AI-based systems as impersonal or opaque, especially when decisions are made without clear human oversight. This can adversely affect the candidate experience, diminishing trust in the recruitment process and possibly harming the employer brand (Strohmeier & Piazza, 2015). The extent to which AI tools can communicate empathy, provide feedback, or adapt to unique candidate contexts remains limited compared to human recruiters.

On the other hand, proponents argue that when designed and implemented responsibly, AI can mitigate human biases, increase objectivity, and enhance decision-making accuracy. AI systems can standardize assessments, minimize fatigue-related errors, and ensure consistency across large applicant pools (Black & van Esch, 2020). They also provide data-driven insights that can help recruiters make evidence-based decisions, potentially increasing the overall quality of hires.

Another key consideration is efficiency. AI reduces the time-to-hire by automating time-consuming tasks such as resume screening and scheduling interviews (Chamorro-Premuzic et al., 2016). This operational efficiency can be particularly advantageous in competitive talent markets, where delays in the recruitment process can result in losing top candidates. Furthermore, AI-powered chatbots and virtual assistants can provide round-the-clock responses to candidate inquiries, improving engagement and communication throughout the application journey.

Nevertheless, the success of AI integration depends heavily on how organizations address ethical, technical, and regulatory challenges. There is a growing demand for transparency in how algorithms make decisions, including the criteria used for filtering or ranking candidates. The European Union's AI Act and other regulatory frameworks are pushing for "explainability," accountability, and non-discrimination in AI systems used for employment decisions (European Commission, 2021). Organizations must also navigate data privacy laws, ensuring that sensitive candidate information is processed securely and in compliance with legal standards.

Another underexplored dimension is the impact of AI on the psychological contract between employers and job seekers. Traditional recruitment processes involve interpersonal interaction, which helps build relational trust and allows candidates to express nuanced aspects of their identity, motivation, and potential. With AI handling significant portions of the process, especially in early screening stages, candidates may feel alienated or undervalued. Understanding how AI

shapes candidate perceptions and satisfaction is crucial for designing human-centric recruitment practices.

The implications of AI adoption in recruitment therefore span three interrelated domains: bias, efficiency, and candidate experience. These dimensions are not mutually exclusive; for instance, efforts to increase efficiency may inadvertently compromise fairness or user satisfaction. Similarly, attempts to reduce bias through algorithmic solutions must be balanced with considerations of explainability and user trust. As such, there is an urgent need for empirical research that critically examines how AI-based recruitment systems function in practice, the extent of their benefits and drawbacks, and how organizations can design AI strategies that uphold ethical, inclusive, and effective hiring outcomes.

This study aims to contribute to this growing area of inquiry by exploring the adoption of AI in recruitment and assessing its implications across the three key areas mentioned. By synthesizing recent literature, examining real-world practices, and gathering stakeholder perspectives, this research seeks to provide insights into how AI can be leveraged responsibly and effectively in modern talent acquisition.

METHOD

This study employs a literature review methodology to systematically analyze and synthesize existing research on the adoption of Artificial Intelligence (AI) in recruitment, with a particular focus on three interrelated aspects: bias, efficiency, and candidate experience. The literature review aims to explore how AI-driven recruitment technologies are transforming human resource practices, and to identify the ethical, operational, and experiential implications associated with their implementation.

Research Approach

A qualitative, integrative literature review was selected to provide a comprehensive overview of the academic discourse and practical developments in AI-based recruitment. Unlike systematic reviews that typically focus on empirical evidence from a narrow field, integrative literature reviews allow for the inclusion of both theoretical and empirical studies to generate new frameworks and insights (Whittemore & Knafl, 2005). This approach is well-suited for complex, emerging topics such as AI in HRM, which intersects disciplines including computer science, psychology, ethics, and management.

Literature Search Strategy

The literature search was conducted across several reputable academic databases: Scopus, Web of Science, Google Scholar, EBSCOhost, ScienceDirect. The search was performed using a combination of keywords and Boolean operators such as: Artificial Intelligence AND recruitment AND bias, AI in hiring" AND efficiency OR automation, AI-based recruitment AND candidate experience, algorithmic hiring AND fairness AND discrimination. To ensure relevance and recency, the search was limited to peer-reviewed articles published between 2015 and 2024, in English, with full-text availability.

Data Analysis and Synthesis

The selected studies were analyzed using thematic content analysis, following these stages: (1) Familiarization: Reading all articles in full to gain a broad understanding of content. (2) Coding: Identifying recurrent keywords, phrases, and

arguments related to bias, efficiency, and candidate experience. (3) Categorization: Organizing findings into key thematic areas. (4) Synthesis: Comparing, contrasting, and integrating the findings across studies. The analysis was supported by qualitative coding using NVivo software, which helped to manage, categorize, and visualize the relationships between themes.

Trustworthiness and Validity

To ensure reliability and validity, the review adhered to academic standards for transparency and objectivity in the literature selection process. Reference tracking and backward citation searches were also used to identify foundational and highly cited works in the field. Furthermore, peer-reviewed sources from high-impact journals in HRM, AI ethics, and business management were prioritized to ensure scholarly quality.

Limitations of the Study

While literature reviews are useful for theory development and synthesis, this method also has limitations: Publication bias: Studies with positive or significant findings are more likely to be published, Lack of empirical observation: The study does not involve direct fieldwork or interviews, Rapid technological change: Developments in AI may quickly outpace current literature, requiring ongoing review. Despite these limitations, this literature review provides a robust foundation for understanding the key issues and debates surrounding AI in recruitment.

RESULT AND DISCUSION

The analysis of 38 peer-reviewed studies from 2015 to 2024 revealed key findings concerning the implications of AI in recruitment, categorized into three interrelated themes: bias, efficiency, and candidate experience. These themes highlight both the potential advantages and the risks associated with AI-based hiring practices. The following discussion presents synthesized insights from the literature.

Bias and Fairness in AI-Driven Recruitment

One of the most widely debated concerns regarding AI adoption in recruitment is algorithmic bias. While AI is often introduced to reduce human subjectivity, numerous studies have found that algorithms can inherit and even amplify biases embedded in historical data (Raghavan et al., 2020). For instance, algorithms trained on past hiring decisions may replicate gender, racial, or age-based disparities if such biases were present in earlier datasets (Binns et al., 2018).

A landmark case that underscores this risk is Amazon's discontinued AI recruitment tool, which was shown to penalize resumes containing the word "women's" (Dastin, 2018). This example illustrates that algorithms can reinforce stereotypes when the training data reflects discriminatory patterns. Several studies emphasize the need for algorithmic auditing, data anonymization, and diverse training datasets to reduce such risks (Mehrabi et al., 2021; Cowgill et al., 2021).

Despite these concerns, some researchers argue that AI can promote fairness if properly designed and monitored. Black and van Esch (2020) suggest that standardized AI evaluations can reduce interpersonal bias by removing recruiter subjectivity in the initial screening phase. However, for this potential to be realized, transparency in algorithmic decision-making often termed explainable AI (XAI) must be prioritized (Doshi-Velez & Kim, 2017). In conclusion, while AI offers tools to

enhance objectivity in recruitment, its ethical application depends heavily on how organizations manage training data, design models, and implement bias mitigation protocols.

Efficiency Gains and Operational Effectiveness

AI technologies have significantly improved recruitment efficiency by automating repetitive and labor-intensive tasks such as resume screening, interview scheduling, and candidate ranking. Several studies report that organizations using AI-enabled platforms experience reduced time-to-hire and cost-per-hire, particularly when managing large applicant pools (Chamorro-Premuzic et al., 2016; Upadhyay & Khandelwal, 2018).

Natural Language Processing (NLP) tools and machine learning algorithms can quickly parse thousands of resumes and identify candidates who meet predefined criteria, far outperforming human recruiters in terms of speed. Moreover, AI chatbots can provide real-time responses to candidate queries, improving communication efficiency while reducing the workload on HR staff (Zhou & Goh, 2021).

Nevertheless, concerns have been raised about overreliance on automation, particularly in nuanced decisions such as evaluating soft skills or cultural fit. Studies caution that efficiency must be balanced with human oversight to avoid excluding potentially valuable candidates due to rigid keyword-matching or flawed ranking mechanisms (van Esch & Black, 2019). Furthermore, AI systems may miss non-traditional but high-potential candidates if they deviate from standard patterns recognized by the algorithm (Ajunwa, 2020). Therefore, while AI enhances scalability and responsiveness in recruitment, it should be viewed as a complementary tool rather than a full substitute for human judgment.

Candidate Experience and Perceptions of Fairness

AI also affects the candidate experience, a critical dimension often overlooked in discussions of recruitment technologies. Candidate experience encompasses a range of factors, including perceived fairness, communication clarity, emotional engagement, and feedback quality. On the one hand, AI can improve the candidate journey by providing faster feedback, reducing long application wait times, and offering 24/7 assistance via virtual agents (Suen et al., 2019). Gamified assessments and AI-powered video interviews can also offer a more interactive and engaging application experience.

However, numerous studies highlight that many candidates feel uneasy about being evaluated by machines, particularly in stages that traditionally involve interpersonal interactions. Candidates report feeling alienated, frustrated, or mistrustful when they are rejected without explanation or human contact (Strohmeier & Piazza, 2015). Lack of transparency in AI decisions undermines perceptions of fairness and can damage the employer brand (Wirtky et al., 2023).

Moreover, video interview tools that analyze facial expressions or voice tone using emotion recognition AI raise privacy and discrimination concerns, particularly among candidates from neurodiverse backgrounds or those with disabilities (Binns et al., 2018). Such tools risk reinforcing normative behavioral standards that may disadvantage certain applicant groups.

To mitigate these risks, researchers recommend implementing hybrid recruitment models blending AI speed

with human empathy and providing clear communication about how AI is used and what criteria are being assessed (Snyder, 2019). Ensuring candidates can request human review or provide contextual information can also improve perceived fairness.

Toward Responsible AI Adoption in Recruitment

The literature converges on the need for a responsible AI framework that addresses the ethical, legal, and human-centric aspects of AI in hiring. This includes:

1. Transparency: Candidates and recruiters must understand how AI tools function.
2. Accountability: Organizations must take responsibility for outcomes generated by AI systems.
3. Inclusivity: Systems should be trained and tested to avoid disadvantaging marginalized groups.
4. Compliance: AI recruitment must align with emerging legal standards such as the EU AI Act (European Commission, 2021).

Organizations are increasingly recognizing the importance of ethical AI governance, including the creation of internal review boards and bias detection teams. Yet, there is still a notable gap between ethical AI research and actual implementation in recruitment practices (Wirtky et al., 2023).

CONCLUSION

This literature review explored the multifaceted implications of Artificial Intelligence (AI) adoption in recruitment, focusing on three key dimensions: bias, efficiency, and candidate experience. The findings reveal that while AI technologies offer substantial benefits in terms of operational speed and cost reduction, they also introduce significant ethical, social, and psychological challenges. AI can streamline recruitment processes by automating repetitive tasks, enabling quicker time-to-hire and improved scalability. However, the same systems can unintentionally replicate or amplify biases if trained on historical data sets that reflect human prejudices. Furthermore, the lack of transparency in AI decision-making processes often leads to reduced trust and perceived fairness among candidates.

From a candidate experience perspective, AI can enhance communication and responsiveness, yet it may also alienate applicants when interpersonal interaction is replaced with automated systems. Video-based assessments and AI-driven personality evaluations raise additional concerns related to privacy, inclusion, and emotional well-being. In summary, the responsible adoption of AI in recruitment requires a balanced, ethical, and human-centric approach. Organizations must not only embrace AI's potential for efficiency but also ensure fairness, transparency, and positive candidate engagement.

Recommendations

Based on the reviewed literature, the following recommendations are proposed for practitioners, policymakers, and future researchers:

1. **Implement Ethical AI Design Principles**
   Organizations should adopt ethical AI frameworks that prioritize fairness, accountability, and explainability. Regular audits and algorithm testing must be conducted to identify and mitigate bias. Involving diverse stakeholders in AI system design can help address blind spots and ensure inclusive outcomes.
2. **Combine AI with Human Oversight**

Rather than fully automating recruitment, companies should use AI as a decision-support tool while retaining human judgment for nuanced evaluations. Hybrid approaches can reduce bias while preserving the empathy and flexibility offered by human recruiters.

3. **Enhance Transparency and Candidate Communication**
   Clear and accessible information should be provided to candidates about the use of AI in the recruitment process. Candidates should be informed about how decisions are made and given opportunities to request human review or feedback.
4. **Monitor and Improve Candidate Experience**
   Regularly gather feedback from applicants regarding their experience with AI-based recruitment tools. Use this input to refine processes, ensure inclusivity, and avoid alienating qualified candidates.
5. **Stay Informed on Legal and Regulatory Developments**
   With evolving global regulations such as the EU AI Act, organizations must ensure their AI recruitment practices comply with emerging legal standards related to data privacy, discrimination, and algorithmic accountability.
6. **Encourage Further Research**
   Academics and practitioners should conduct empirical studies to evaluate the long-term impacts of AI in recruitment, including effects on diversity, employee performance, and organizational culture. Research should also explore cross-cultural perceptions of AI in hiring.

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