Journal Article

AI Adoption and Recruitment Efficiency in European Banking: A Mixed-Method Analysis

Prestini, D. K.

Science Discovery Artificial Intelligence
2026, Vol. 1, No. 1, pp. 1–6
https://doi.org/10.11648/j.sdai.20260101.11

SciencePG
Science Publishing Group

Research Article

AI Adoption and Recruitment Efficiency in European Banking: A Mixed-Method Analysis

Dawid Krystian Prestini[1, 2, *]

[1]Department of Business and Management, Wrexham University, Wrexham, United Kingdom
[2]Department of Management, Opole University of Technology, Opole, Poland

Abstract

The adoption of Artificial Intelligence (AI) is reshaping recruitment processes in the European banking sector, where efficiency, accuracy, and compliance are strategic imperatives. This study investigates the extent to which AI improves recruitment efficiency, candidate selection quality, organisational outcomes, and candidate trust. Using a mixed-method approach, data were collected from 200 HR professionals and managers in European banks and supplemented with secondary industry evidence. Descriptive statistics, correlation, and regression analyses confirm that AI-driven recruitment significantly reduces time-to-hire and improves candidate-job matching, with recruitment process efficiency ($\beta = 0.562$, $p < 0.001$) and structured evaluation criteria ($\beta = 0.377$, $p = 0.002$) emerging as the strongest predictors of positive organisational outcomes. However, results also indicate that excessive reliance on automation can negatively affect candidate trust ($\beta = -0.259$, $p < 0.05$). These findings extend theoretical debates by applying the Technology Acceptance Model, the Resource-Based View, and Human Capital Theory to the context of banking recruitment, highlighting AI as both a strategic resource and a source of ethical and transparency challenges. Practical implications include the need for hybrid recruitment models combining automation with human oversight, enhanced transparency in candidate communication, and strict alignment with the EU AI Act. This study contributes original empirical evidence from European banking, offering theoretical, managerial, and policy insights into the responsible and effective adoption of AI in recruitment.

Keywords

Artificial Intelligence, Recruitment, Efficiency, Candidate Trust, European Banking, Human Capital, TAM, RBV

1. Introduction

Artificial Intelligence (AI) is reshaping human resource management (HRM) practices across industries, with banking emerging as a leading sector in adoption. Recruitment processes, traditionally resource-intensive, are now increasingly supported by AI tools to improve efficiency and candidate-job matching. For European banks, facing intense competition and regulatory oversight, the ability to adopt AI responsibly is a strategic imperative. While previous studies have highlighted AI's efficiency gains, questions remain about its implications for candidate trust, fairness, and compliance with the EU AI Act.

This paper aims to evaluate the impact of AI adoption on

*Correspondence: Dawid Krystian Prestini (S24010207@mail.glyndwr.ac.uk)

Received: 20 August 2025; **Accepted:** 3 February 2026; **Published:** 21 February 2026

recruitment efficiency, candidate selection, organisational outcomes, and candidate trust in the European banking sector. By employing a mixed-method approach and grounding the study in the Technology Acceptance Model (TAM), the Resource-Based View (RBV), and Human Capital Theory, the paper provides empirical and theoretical contributions to the literature. The novelty of this research lies in its focus on the European banking context, an underexplored domain despite rapid AI uptake.

The structure of this paper is as follows: Section 2 reviews the literature, Section 3 presents the methodology, Section 4 reports results, Section 5 discusses implications, and Section 6 concludes with recommendations.

2. Literature Review

Existing research confirms that AI transforms recruitment processes by automating resume screening, candidate-job matching, and interview scheduling [1]. From a broader human resource management perspective, AI adoption represents a structural transformation of HRM practices, reshaping recruitment, performance management, and workforce planning across industries [12].

Studies report efficiency gains of up to 30% in recruitment time when AI systems are applied in financial institutions [2]. In the banking sector, AI-driven recruitment tools have been shown to accelerate screening processes, improve objectivity, and reduce time-to-hire, particularly for highly specialized roles [11].

At the same time, AI enhances candidate evaluation by reducing human bias and introducing algorithmic consistency [3]. Recent empirical evidence further supports these findings, demonstrating that multi-criteria AI-based decision models significantly enhance candidate selection accuracy while reducing subjectivity in recruitment processes [10].

However, several scholars note risks: bias embedded in training data, reduced transparency, and erosion of candidate trust [4, 5]. Concerns related to transparency, accountability, and data privacy remain central to AI-enhanced recruitment, as opaque algorithmic decision-making can undermine candidate trust and organisational legitimacy [14].

Ethical frameworks, including the EU AI Act, emphasise the need for transparency and fairness in AI recruitment [6].

From a theoretical perspective, the Technology Acceptance Model (TAM) highlights how perceived usefulness and ease of use affect AI adoption among HR professionals [7]. The Resource-Based View (RBV) positions AI as a strategic asset capable of delivering sustainable competitive advantage when deployed responsibly [8]. According to the Resource-Based View, digital technologies such as AI can function as strategic resources when they are valuable, rare, and difficult to imitate, thereby supporting sustainable competitive advantage in organisations [13].

According to the Resource-Based View, digital technologies such as AI can function as strategic resources when they are valuable, rare, and difficult to imitate, thereby supporting sustainable competitive advantage in organisations [13].

Human Capital Theory further underscores AI's role in enhancing the identification and development of skilled employees [9]. Yet, unresolved tensions remain between efficiency and ethical responsibility, justifying the need for empirical analysis in the European banking context.

3. Methodology

A mixed-method approach was adopted, integrating quantitative and qualitative elements to capture AI's impact on recruitment. Primary data were collected via surveys distributed to 200 HR professionals and recruitment managers across European banks, using purposive sampling. Secondary data from consultancy reports and academic sources complemented the analysis. SPSS was used for descriptive statistics, correlation, and regression analyses. Key variables measured included time-to-hire, candidate selection quality, organisational outcomes, and trust. Ethical oversight ensured compliance with the General Data Protection Regulation (GDPR) and confidentiality requirements.

4. Results

Descriptive statistics revealed positive perceptions of AI, with mean scores above 3.9 on a 5-point scale. Correlation analysis showed strong links between recruitment efficiency, candidate selection, and trust. Regression analysis identified recruitment efficiency ($\beta = 0.562$, $p < 0.001$) and candidate evaluation ($\beta = 0.377$, $p = 0.002$) as significant predictors of organisational outcomes. However, AI adoption negatively correlated with candidate trust ($\beta = -0.259$, $p < 0.05$), suggesting that overreliance on automation can undermine perceptions of fairness. As illustrated in Table 1, mean scores for recruitment efficiency and candidate trust were particularly high, exceeding 4.0 on the 5-point scale. Figure 1 further shows that the majority of respondents were between 22 and 30 years old, while Figure 2 demonstrates the gender imbalance of the sample. Figure 3 highlights the strong educational profile of respondents, with over 87% holding at least an undergraduate degree.

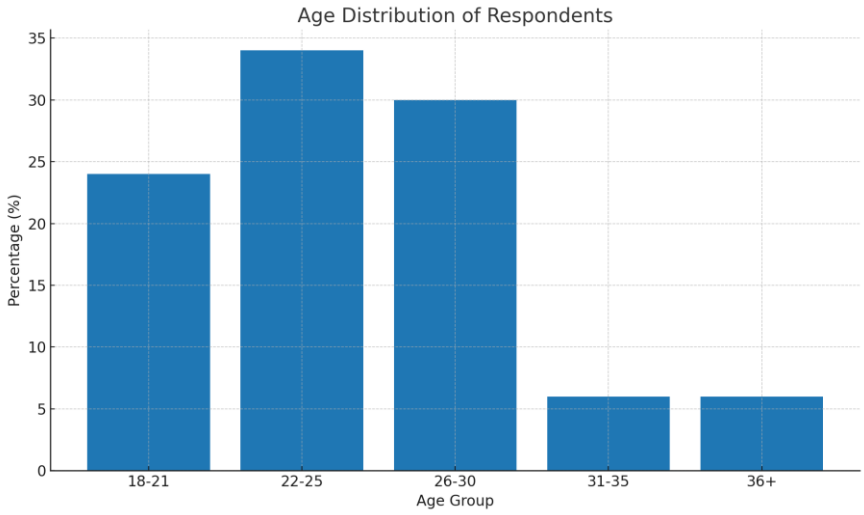

Figure 1. *Distribution of respondents by age group, showing that over 60% are between 22 and 30 years old.*

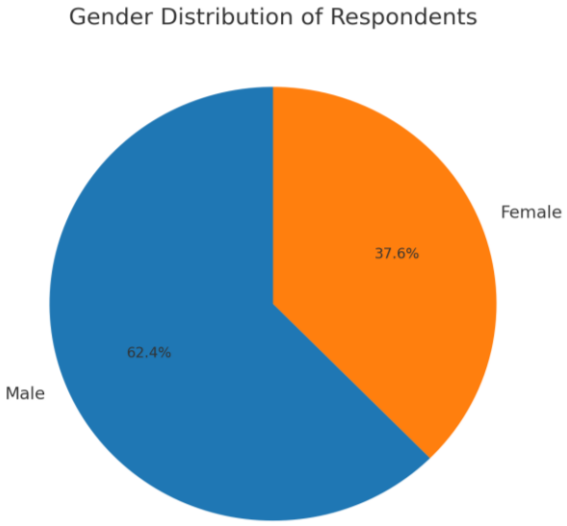

Figure 2. *Gender distribution of respondents, indicating a male majority (62.4%) compared to female respondents (37.6%).*

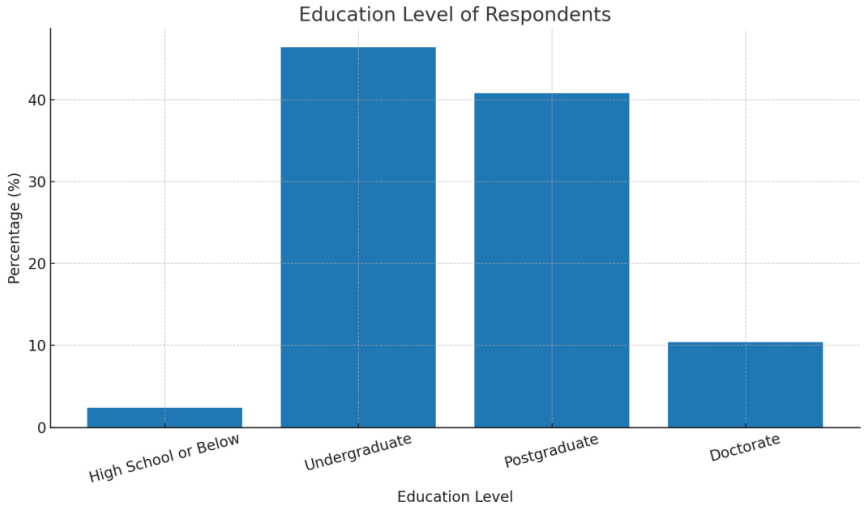

Figure 3. *Educational background of respondents, highlighting the dominance of undergraduate (46.4%) and postgraduate (40.8%) qualifications.*

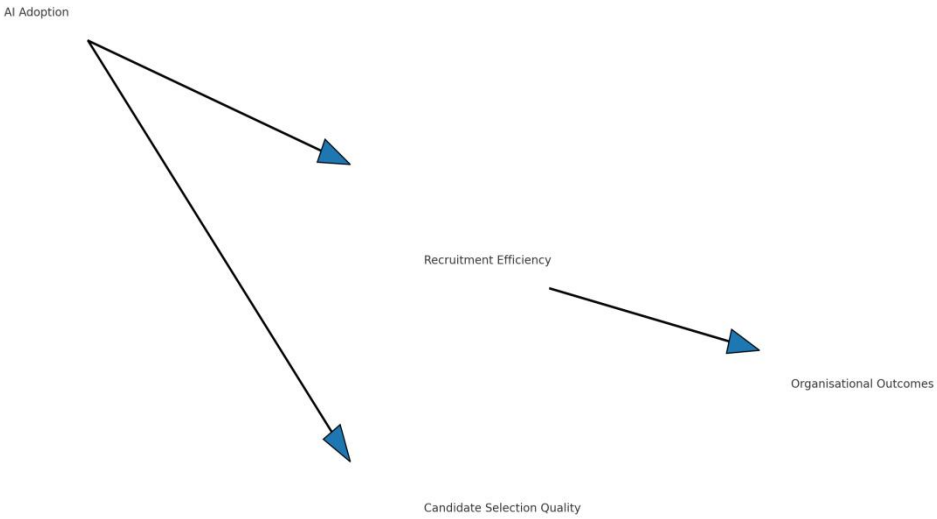

Figure 4. *Conceptual framework illustrating hypothesised relationships between AI adoption, recruitment efficiency, candidate selection quality, organisational outcomes, and trust.*

Table 1. *Descriptive statistics showing mean and standard deviation of recruitment-related variables (efficiency, selection quality, outcomes, trust, and ethical concerns).*

Variable	Mean	Std Dev
Recruitment Efficiency	4.16	0.59
Candidate Selection Quality	3.96	0.61
Organisational Outcomes	4.13	0.62
Candidate Trust	4.22	0.60
Ethical Concerns	3.98	0.82

Table 2. *Correlation matrix summarising relationships among time-to-hire, candidate selection quality, organisational outcomes, and candidate trust.*

Variables	Time-to-Hire	Candidate Selection	Organisational Outcomes	Candidate Trust
Time-to-Hire	1.00	0.78	0.40	0.70
Candidate Selection	0.78	1.00	0.41	0.63
Organisational Outcomes	0.40	0.41	1.00	0.65
Candidate Trust	0.70	0.63	0.65	1.00

Table 3. *Regression analysis identifying significant predictors of organisational outcomes, including recruitment efficiency, candidate evaluation, and AI adoption.*

Predictor	Beta	p-value
Recruitment Efficiency	0.562	<0.001
Candidate Evaluation	0.377	0.002
AI Adoption	-0.259	0.044

Predictor	Beta	p-value
Ethical Concerns	-0.063	0.363

5. Discussion

The findings confirm that AI adoption enhances efficiency and candidate-job matching, but also highlight tensions between automation and candidate trust. This duality reinforces the Technology Acceptance Model, where usefulness is acknowledged, yet acceptance is limited by perceived loss of transparency. From a Resource-Based View, AI provides banks with rare and inimitable tools that strengthen competitive advantage by accelerating recruitment cycles and improving human capital acquisition. However, reputational risks emerge when candidates perceive AI systems as opaque or biased. Notably, large banks such as HSBC and UBS have already reported concerns about candidate perceptions when AI is overused in early screening stages. Practical implications suggest that European banks should adopt hybrid models, where AI automates initial filtering but human managers conduct final evaluations, ensuring fairness and empathy. Moreover, transparent communication about AI's role in decision-making is critical to maintaining trust. Regulators and policymakers must also play a proactive role, with the EU AI Act offering a framework to align efficiency gains with ethical responsibility. These results advance Human Capital Theory by showing that the long-term benefits of AI depend on balancing efficiency with fairness, ensuring that recruitment enhances not only organisational performance but also employer reputation.

6. Conclusion and Recommendations

This study demonstrates that AI adoption improves recruitment efficiency, candidate selection quality, and organisational outcomes in European banks, while also presenting challenges related to candidate trust and ethical responsibility. Practical recommendations include adopting hybrid recruitment models, investing in HR training, enhancing transparency, embedding compliance with the EU AI Act, and continuously auditing AI systems for bias. Future research should explore longitudinal effects and cross-industry comparisons. AI in recruitment should be seen not as a replacement for human judgment but as a strategic complement that, when implemented responsibly, delivers efficiency without compromising fairness.

Abbreviations

AI	Artificial Intelligence
EU	European Union
GDPR	General Data Protection Regulation
HR	Human Resources
HRM	Human Resource Management
RBV	Resource-Based View
TAM	Technology Acceptance Model

Acknowledgments

The author extends sincere appreciation to the HR professionals, managers, and industry experts who participated in the survey and generously shared their time and insights. Special thanks are also given to academic mentors and colleagues who provided constructive feedback on earlier drafts of this work, which significantly improved the clarity and rigour of the final manuscript. The support of peers in reviewing the methodological design and statistical analysis was particularly valuable.

Author Contributions

Dawid Krystian Prestini: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Writing – review & editing, Visualization, Supervision

Conflicts of Interest

The author declares no conflict of interest.

References

[1] Accenture (2024) Top 10 banking trends for 2024 – Banking on AI. Available at: https://www.accenture.com

[2] European Parliament (2024) EU Artificial Intelligence Act. Official Journal of the European Union.

[3] Manda, E. F. and Salim, R. (2021) Analysis of the influence of perceived usefulness, perceived ease of use and attitude toward using technology on actual technology use: The case of TAM. International Research Journal of Advanced Engineering Science, 6(1), pp. 135-140.

[4] McKinsey & Company (2024) State of generative AI implementation among European banks. Available at: https://www.mckinsey.com

[5] Mukherjee, I. and Krishnan, L. R. K. (2022) Impact of AI on aiding employee recruitment and selection process. Journal of the International Academy for Case Studies, 28(2), pp. 55-68.

[6] Mujtaba, D. F. and Mahapatra, N. R. (2024) Fairness in AI-driven recruitment: Challenges, metrics, and future directions. arXiv preprint arXiv: 2405.19699.

[7] Naeem, M., Siraj, M., Abdali, A. S. and Mehboob, A. (2024) The impact of investment in AI on bank performance: Empirical evidence from Pakistan's banking sector. KASBIT Business Journal, 17(1), pp. 45-59.

[8] Ng, W. and Stuart, T. E. (2022) Acquired employees versus hired employees: Retained or turned over. Strategic Management Journal, 43(5), pp. 1025-1045. https://doi.org/10.1002/smj.3518

[9] Oman, Z. U., Siddiqua, A. and Noorain, R. (2024) Artificial intelligence and its ability to reduce recruitment bias. International Journal of Human Resource Studies, 14(1), pp. 99-115.

[10] Pinochet, L. H. C., Lopes, N. S., Onusic, L. M., dos Santos, M., Pardim, V. I. and Francischini, A. S. N. (2024) Exploring the impact of AI on candidate selection: A two-phase methodological approach with CRITIC-WASPAS. Procedia Computer Science, 242, pp. 920-927.

[11] Shafeela, N. and Shahithabanu, M. (2024) AI revolution in banking recruitment: Enhancing efficiency and objectivity. REST Journal, 5(2), pp. 33-45.

[12] Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A. and Trichina, E. (2023) Artificial intelligence, robotics, advanced technologies, and human resource management: A systematic review. Artificial Intelligence and International HRM, 12(3), pp. 172-201.

[13] Willie, M. (2025) Leveraging digital resources: A resource-based view. Journal of Strategic Management, 18(1), pp. 44-59.

[14] Yanamala, K. K. R. (2023) Transparency, privacy, and accountability in AI-enhanced HR processes. Journal of Advanced Computing Systems, 3(3), pp. 10-18.