

Research Article

AI-Augmented HRM: Transforming Talent Acquisition and Employee Experience in 2026

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Abstract: Artificial Intelligence (AI) is becoming increasingly usual in HR management, especially in talent acquisition and AI-assisted decision making. But, in addition to the technological capacities, the successful application of AI needs HR professionals to understand and evaluate the recommendations of AI. In the present research, the impact of AI literacy and Explainable Artificial Intelligence (XAI) on AI-augmented talent acquisition is investigated. Quantitative analysis was performed using 410 valid observations of HR managers interacting with AI recruitment systems under various conditions of XAI. Subjective perception of AI systems and objective understanding of AI recommendations in relation to Important Features, Counterfactuals and Model Criteria explanations were considered. It has been established that all three XAI methods increase subjective perception significantly. Nevertheless, there is a huge difference in the way they affect objective understanding. Important Features greatly increase objective understanding, Counterfactuals do not matter at all and Model Criteria lead to a degradation of objective understanding. It was found out that there is a positive relationship between AI literacy and objective understanding. The results of the research demonstrate that there should be balance between AI literacy, explanation design and human judgement for effective AI augmented HRM.

Keywords: Artificial Intelligence, Human Resource Management, AI-Augmented HRM, Talent Acquisition, Explainable AI, AI Literacy, Recruitment, Human-AI Collaboration

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INTRODUCTION

Artificial Intelligence (AI) has been increasingly revolutionizing Human Resource Management (HRM), especially in terms of talent acquisition, candidate screening, employee evaluation and HR decision making. With the increase in AI-based systems, HRM has become more and more data and technology driven and AI can help organizations handle vast amounts of information about applicants and employees and automate many HR processes [1]. At the same time, the increasing prominence of AI raises critical issues in the areas of transparency, explainability, human judgment and ethics in HRM [2].

Changing Human Resource Management

HRM has developed into a strategic discipline from traditional personnel management that includes such processes as recruitment, labor planning, employee development, performance management and decision making. The introduction of AI will change these processes further with such tools as automated resume screening, predictive analysis, intelligent recommendation and decision-making support tools using AI [3]. With an increase in adoption of such technologies by organizations, HR specialists will need to cooperate with AI tools rather than do decision-making on their own. It shows how the AI-driven or algorithmic HRM becomes a reality as technology can enhance human abilities while remaining humans involved in HR decisions [4].

AI in Talent Acquisition

Talent Acquisition is one of the domains where the application of AI in HRM is significant. AI-driven recruiting systems can help analyze the data provided by candidates, recognize their qualifications, screen applicants and give suggestions to the HR manager. All of the above might result in lower burden of administrative work and increased effectiveness of the recruiting process [5]. Nevertheless, algorithmic recruiting raises issues related to the risks of bias, unfairness, responsibility and transparency. Thus, successful AI implementation in the domain of talent acquisition requires more than just technological possibility [6].

Importance of AI Literacy

The importance of AI literacy has grown significantly due to the interaction of HR professionals with AI-enabled technology. This means having the capacity to understand the AI technologies used, to critically assess their outcomes and to use the AI-derived information appropriately. Recent studies have pointed out that AI literacy must include not only the knowledge of AI but also the critical evaluation and usage of AI-based systems [7]. Thus, an HR manager with higher AI literacy might be more capable of realizing both strengths and weaknesses of automated recommendations.

Role of Explainable AI

Explanation in Artificial Intelligence (XAI) represents a notable approach aimed at increasing the understandability of AI-based decision-making processes. Within the context of recruitment or any other type of AI-assisted decision-making process, the information contained within the explanation could be useful for users in terms of providing them with the information regarding certain aspects that have influenced the recommendation of the AI system. However, different forms of explanations might have varying effects on the understanding of AI output or trust. Recent research demonstrates that explanations could help to increase the objective accuracy of the decisions without increasing user's trust [8].

Purpose of the Study

This study looks at HRM with AI in the context of recruiting talents through investigating the connections between AI-literacy, Explainable AI, subjective perceptions and objective understanding. Based on data collected from 410 valid observations of HR-managers, the research assesses the effects of various XAI techniques on the way that AI-assisted recruitment systems are perceived and understood objectively. Special attention is paid to the possible differences in the effectiveness of XAI depending on the type of explanations and level of AI-literacy.

LITERATURE REVIEW

AI Integration into Human Resource Management is becoming a critical area of research as more and more companies are turning to AI technologies to facilitate recruiting and managing employees as well as making decisions related to HRM. Past studies focused on the ways in which AI systems could help organizations improve their HR practices and overcome potential challenges that arise from responsible AI implementation and involvement of humans [9]. Modern research highlights that the impact of AI in HRM does not rely only on the technological aspect but also on human and organizational capacities needed to adopt this technology effectively. Literature can thus be reviewed in light of these four areas: AI-Enabled HRM, Talent Acquisition, AI Literacy and Explainable AI.

AI-Augmented HRM and Talent Acquisition

AI has also been utilized in talent acquisition using automatic candidate selection, applicant rating, candidate matching and recruitment recommendation systems. These applications are capable of minimizing tedious administrative tasks and allow HR professionals to handle large applicant databases more efficiently [10]. AI is therefore able to serve as a decision support tool and not necessarily a substitute for human decision-making. Recruitment decisions however have implications on people's job opportunities, hence the need for fairness, algorithmic bias, accountability and human involvement becoming significant considerations. This literature therefore suggests a human-centered approach where AI abilities are used together with professional HR judgment.

AI Literacy and HR Decision-Making

Being able to critically assess AI systems is crucial for successful integration of AI technology. In general, AI literacy includes comprehending AI technologies, developing the relevant skills and competencies and critically analyzing AI out-puts as well as making appropriate use of AI-generated data. Recent research in the field of HRD highlights the importance of AI literacy as knowledge, skills, relevance and values that may assist in working in AI-mediated

environments [11]. Accordingly, greater AI literacy will allow HR managers to assess the strengths and weaknesses of automated recommendations and minimize the misuse of algorithms. Hence, AI literacy may be regarded as an important human capability to ensure successful AI augmentation in HRM.

Explainable AI in Human Resource Management

Approach called Explainable Artificial Intelligence has been developed as a way to increase transparency and interpretability of AI-enabled decisions. In the area of recruitment, XAI can provide information on the reasons of candidates' recommendations and allow decision-makers to evaluate results obtained by the AI system. The application of XAI to candidate management has included research of the effect of explanations on decision-making in AI-enabled recruitment and impact of these systems on bias and discrimination [12]. Different types of explanations can lead to different results and the increase in perceived transparency does not mean that there is better understanding of the situation objectively. It has been shown by recent experiment that explanations can increase accuracy of decision-making even if there is no increase in the level of trust. This difference between performance and perception is especially important for recruitment where HR managers have to understand recommendations made by the AI system.

Research Gap

Even though some of the above-mentioned topics have been explored in previous research on the subject matter, their interaction in the context of AI-powered recruiting has not been researched sufficiently yet. Specifically, it is necessary to consider the difference between subjective perception of AI tools and objective understanding of AI-generated recommendations. Moreover, it should be considered whether various explanations of AI decisions can be equally efficient for HR specialists with different levels of AI literacy. This research gap will be addressed through examining HR-manager responses to AI-fueled recruiting interfaces and the impact of AI literacy and different approaches to XAI on their subjective perception and understanding.

MATERIALS AND METHODS

In this study, we use quantitative methods for researching the effect of AI literacy and Explainable Artificial Intelligence on AI-enabled talent management. Our analysis is conducted based on the TRANKI data set, which consists of answers provided by HR managers who used AI-assisted recruitment tools in various explanation conditions. This data set was gathered within the TRANKI research project, aimed at investigating the effects of AI literacy and XAI aspects on interpretation of AI-enabled HR interfaces [13]. Our approach will allow us to determine whether there is any effect of XAI on HR managers' perception of AI recommendations.

Research Design and Data Source

This research follows an experimental quantitative research design. The data set was collected in February 2025 by HR managers that had contact with an AI-driven recruitment system. In the study, the subjects were presented with different types of explanations that accompany AI-based recruitment recommendations. From the total of 427 subjects, 410 were considered to be valid in this study (Table 1).

Variables and Measurement

In the study, AI literacy was regarded as the primary individual factor and was studied for its association with two HRM outcomes: subjective perception and objective comprehension. AI literacy includes Technical Comprehension, Critical Evaluation and Practical Implementation. Subjective perception refers to how the participants evaluated the trustworthiness, transparency, comprehensibility, utility and implementability of the system. Objective understanding is explained by the accuracy of understanding factual information that is related to the AI decision recommendation. The XAI system was defined with the help of three explanation methods: Important Features, Counterfactuals and Model Criteria (Table 2).

Data Analysis Technique

Descriptive statistics were employed in summarizing the sample and primary variables in this study, whereas Cronbach's alpha was used for internal consistency testing. Differences between the two conditions were analyzed using Wilcoxon signed-rank test since the measures for objective understanding could not be normally distributed. For testing correlation between AI literacy and outcomes of this study, correlation analysis was conducted. The results from correlation analysis also compared the effect of three XAI methods under different levels of AI literacy.

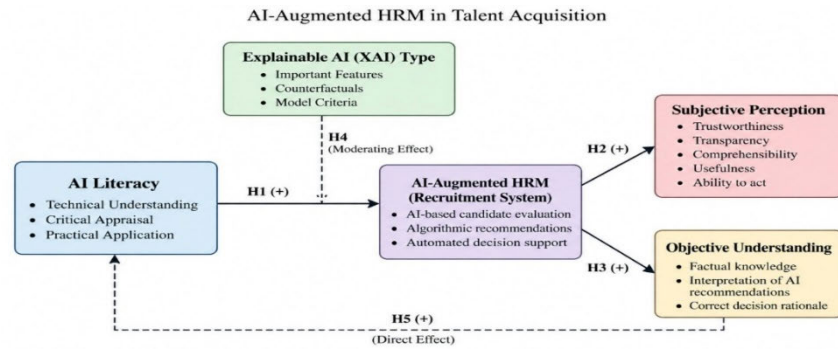


Figure 1: Conceptual Research Framework

+: Indicates a positive relationship, Dashed lines represent moderating or direct effects

Table 1: Sample Characteristics and Research Design

Characteristic	Description
Initial participants	427 HR managers
Valid observations	410
Study population	HR managers
Data collection period	February 2025
Research approach	Quantitative
Research design	Experimental
AI application	AI-supported recruitment
Baseline condition	Recruitment interface without XAI
XAI conditions	Important Features, Counterfactuals, Model Criteria
Main outcomes	Subjective perception and objective understanding

Table 2: Variables and Measurement Items

Variable	Dimension/Indicator	Measurement
AI Literacy	Technical Understanding	5-item scale
AI Literacy	Critical Appraisal	5-item scale
AI Literacy	Practical Application	5-item scale
Subjective Perception	Trustworthiness, transparency, comprehensibility, usefulness and actionability	5-item Likert scale
Objective Understanding	Correct understanding of AI-generated information	0-5 score
XAI Type	Important Features	Experimental condition
XAI Type	Counterfactuals	Experimental condition
XAI Type	Model Criteria	Experimental condition

Analytical Framework

The analysis assesses the impact of AI literacy on the efficacy of recruitment through AI and the effect of different explanations on this relationship. The key focus is on the difference between the subjective perception of an AI tool and its objective comprehension, which makes it possible to assess whether a more transparent AI results in greater understanding.

The conceptual framework that is being developed in Figure 1 shows the hypothesized relationship between AI literacy, AI-enhanced HRM and Explainable AI effectiveness in case of recruiting activities. It shows that the role of AI literacy could effect how HR experts recognize and comprehend AI-based recruiting system, while XAI explanations could help to determine the degree to which these systems provide decision support. Therefore, the conceptual framework can serve as the foundation for the empirical examination of the relationship between the constructs in subsequent research.

RESULTS

The analyses were performed to investigate the influence of AI literacy and Explainable Artificial Intelligence (XAI) on the process of recruiting talents with the help of AI. Two dependent variables of the study were analyzed: subjective perception of the AI-based recruitment tool and objective understanding of the recommendations produced by AI. The findings are reported using descriptive statistics, reliability analysis, correlation analysis and statistical comparison among three XAI groups.

Descriptive Statistics and Reliability Analysis

The results were derived from 410 valid observations. AI literacy was calculated by three dimensions: Technical Understanding, Critical Appraisal and Practical Application. Of these three dimensions, Critical Appraisal had the

Table 3: Reliability and Descriptive Statistics of Study Variables

Study Variable	No. of Items	Mean	SD	Cronbach's α
Technical Understanding	5	2.85	1.28	0.92
Critical Appraisal	5	3.29	1.22	0.90
Practical Application	5	3.10	1.24	0.89
Overall AI Literacy	15	3.08	1.00	0.96
Subjective Perception-Baseline	5	2.92	1.21	0.92
Subjective Perception-Important Features	5	3.31	1.11	0.92
Subjective Perception-Counterfactuals	5	3.10	1.14	0.90
Subjective Perception-Model Criteria	5	3.11	1.10	0.91

Table 4: AI Literacy and Study Outcomes

Relationship	Direction	Statistical Interpretation
AI Literacy $\rightarrow$ Subjective Perception	Positive	Higher AI literacy associated with more favourable perceptions
AI Literacy $\rightarrow$ Post-XAI Perception	Positive	Relationship becomes stronger following XAI exposure
AI Literacy $\rightarrow$ Objective Understanding Improvement	Positive	Higher AI literacy associated with greater improvement
XAI $\rightarrow$ Subjective Perception	Positive	All three XAI approaches improve perceived system quality
XAI $\rightarrow$ Objective Understanding	Mixed	Effect varies according to explanation type
XAI Type $\times$ AI Literacy $\rightarrow$ Understanding	Conditional	Effectiveness varies across AI-literacy levels

Table 5: Effect of XAI on Subjective Perception

XAI Explanation	Baseline Mean	XAI Mean	Mean Change	p-value	Decision
Important Features	3.10	3.31	+0.21	<0.001	Significant
Counterfactuals	2.81	3.10	+0.29	<0.001	Significant
Model Criteria	2.85	3.11	+0.26	<0.001	Significant

highest mean score, suggesting a relatively higher ability of the respondents to critique AI information compared to other dimensions. The overall measure of AI-literacy was found to have high internal consistency, thus its application in the subsequent analysis. The subject perception scale also had high reliability in all experimental conditions.

Cronbach's Alpha coefficient values are within the range of 0.89 to 0.96, suggesting that they are internally consistent and hence reliable enough to study the association between the AI literacy, XAI and reaction of HR professionals to the use of AI in recruitment (Table 3).

Relationship Between AI Literacy and HRM Outcomes

Additionally, the analysis explored the connection between AI literacy and the consequences of recruitment by using AI. There was found to be a positive connection between AI literacy and subjective perception of the AI system, meaning that those HR professionals who had a higher level of AI literacy tended to have better perceptions of AI-based recruitment systems. There was also found to be a connection between AI literacy and an improvement in objective understanding.

One of the best correlations found to be relevant to objective understanding was seen between AI literacy and development of objective understanding ($r = 0.242$, $p < 0.001$). This shows that, in addition to being related to having positive attitudes towards AI, AI literacy has a potential to help understand the information produced by AI (Table 4).

Effect of XAI on Subjective Perception

Comparisons of the baseline condition with the XAI condition reveal consistent improvements in terms of subjective reception. The use of all three methods for providing explanations led to statistically significant improvements in the perceived recruitment AI support system.

Subjective perception has increased the most in the hypothetical condition, while the Important Features condition gave the highest post-XAI perception score. This implies that explanations in general make AI-enabled recruitment systems seem more transparent, useful and reliable to HR practitioners (Table 5).

This graph provides visual proof of the improved quality perception between the three explanations when compared to the control interface (Figure 2). This finding reinforces the importance of explainability in creating positive perceptions of AI-enabled HR decisions.

Effect of XAI on Objective Understanding

In light of the discussion on objective understanding, the results become much more complicated. Contrary to subjective perceptions, none of the three XAI methods consistently improved participants' understanding of AI-generated recommendations.

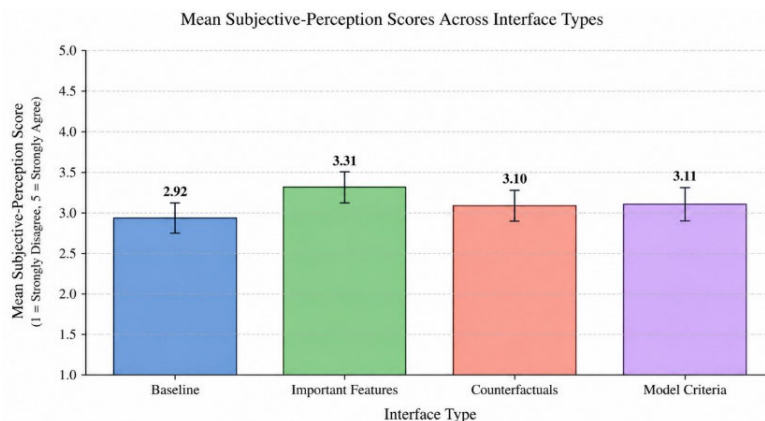


Figure 2: Impact of XAI on Subjective Perception

Error bars represent ± 1 standard deviation, Subjective-perception scores are measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree)

Table 6: Effect of XAI on Objective Understanding

XAI Explanation	Pre-XAI Mean	Post-XAI Mean	Change	p-value	Interpretation
Important Features	2.48	2.97	+0.49	<0.001	Significant improvement
Counterfactuals	2.57	2.40	-0.17	0.155	Not significant
Model Criteria	2.63	2.14	-0.49	<0.001	Significant decline

Table 7: Inferential Analysis of XAI Effects by AI Literacy

XAI Type	AI Literacy Group	Pre-XAI Mean	Post-XAI Mean	p-value	Result
Important Features	Low	2.70	2.48	0.41	Not significant
Important Features	Medium	2.75	2.95	0.33	Not significant
Important Features	High	1.98	3.35	<0.001	Significant improvement
Counterfactuals	Low	2.93	2.36	0.031	Significant decline
Counterfactuals	Medium	2.59	2.32	0.11	Not significant
Counterfactuals	High	2.29	2.55	0.18	Not significant
Model Criteria	Low	2.73	2.17	0.030	Significant decline
Model Criteria	Medium	2.68	2.20	0.004	Significant decline
Model Criteria	High	2.48	2.04	0.007	Significant decline

The Most Favourable Outcome was achieved through Important Features, resulting in an increase in the objective-understanding score of 0.49. The small negative effect of 0.49 on the score was observed for counterfactual explanations but was not statistically significant (Table 6).

The comparison of findings presented in Figure 2 and 3 highlights one of the significant findings of the research-enhancing perception of the AI system does not necessarily improve users' comprehension of its recommendations. It can be concluded that XAI efficiency cannot be estimated based on subjective criteria only.

Effect of XAI Across AI-Literacy Levels

Additional findings show that the success of XAI is influenced by the AI-literacy level of the respondents. Important attributes had a noticeable effect on participants with high AI-literacy level, who saw their score for objective understanding to be increased from 1.98 to 3.35 ($p < 0.001$). On the other hand, Model Criteria has led to substantial drops among low-, medium- and high-literacy groups (Table 7).

The results imply that the success of XAI relies on the interaction between the design of explanation and user competency. Especially, these results emphasize the relevance of the AI literacy for HR professionals responsible for interpreting and applying AI-generated recruitment recommendations.

The positive correlation depicted in Figure 4 also underlines the relevance of the AI literacy concept. HR specialists who explained higher AI-literacy scores has showed more progress in the growth of their objective comprehension skills. So, the claim about developing both AI literacy and explainability is supported.

Hypothesis Testing

On the basis of the statistical findings, the proposed hypotheses were calculated according to the direction and importance of the observed relationships.

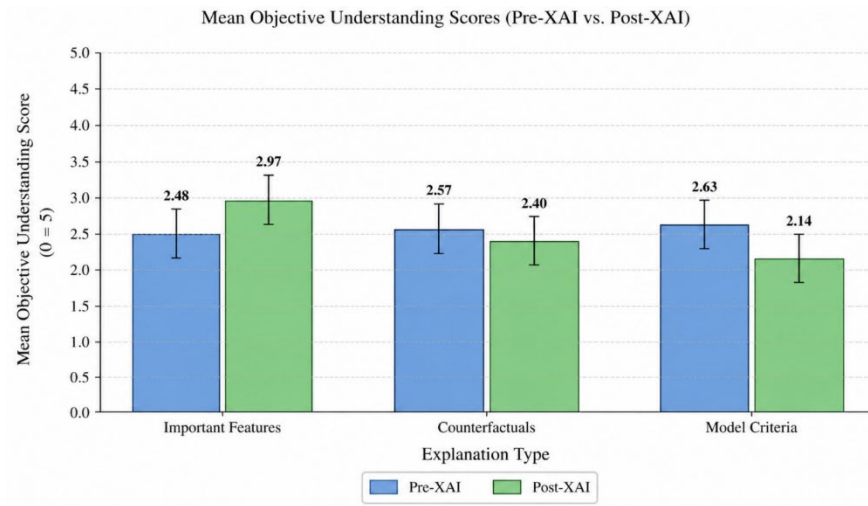


Figure 3: Impact of XAI on Objective Understanding

Error bars represent ± 1 standard deviation, Objective understanding scores are measured on a 0-5 scale (0 = no correct answers, 5 = all correct answers)

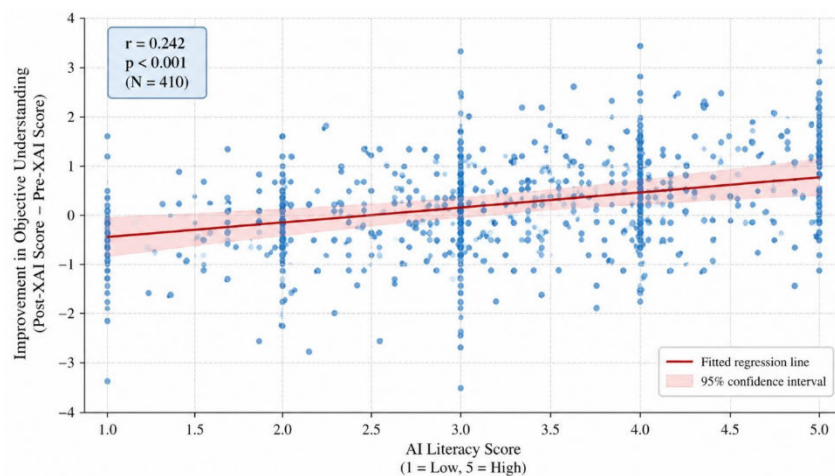


Figure 4: Relationship Between AI Literacy and Objective Understanding Improvement

A positive value indicates improvement in objective understanding after XAI, AI literacy scores are measured on a 1-5 scale, Improvement scores are measured on a -5 to +5 scale

Table 8: Hypothesis Testing Summary

Hypothesis	Statement	Decision
H1	AI literacy positively influences perceptions of AI-enabled HR systems.	Supported
H2	XAI improves subjective perception of AI-enabled recruitment systems.	Supported
H3	XAI improves objective understanding of AI recruitment recommendations.	Partially Supported
H4	The effectiveness of XAI differs according to explanation type and AI literacy.	Supported
H5	Effective AI augmentation requires alignment between AI literacy and explanation design.	Supported

In general, findings show that XAI positively affects perception subjectively but its impact on objective comprehension is conditional. This difference makes up the key empirical discovery of the research and the starting point for discussion of AI-enhanced HRM in the next chapter (Table 8).

DISCUSSION

It can be seen from the above findings that the success of AI-based HRM depends not only on the implementation of artificial intelligence but also on artificial intelligence literacy and the development of Explainable Artificial Intelligence (XAI). In this regard, it should be noted that there is a clear difference in the perception of artificial intelligence systems and the true understanding of recommendations made by artificial intelligence among HRM specialists.

Discussion of Findings

As we can see from the results of the analysis, both Important Features, Counterfactuals and Model Criteria approaches helped improve the perception of AI-supported recruitment in terms of being more understandable and trustworthy. However, in the case of objective understanding the picture was a bit different. While Important Features increased the level of understanding of the algorithm significantly, Counterfactuals did not affect it at all, while Model Criteria decreased it significantly. Thus, perceived transparency does not mean understanding. And this fact is especially relevant for recruitment.

CONCLUSION AND IMPLICATIONS

According to the study, successful AI-enabled talent acquisition should be carried out in the way where AI will be used as a tool for helping in the decision process rather than replacing it. The organization needs to include training on AI literacy, together with well-designed methods of explanations, while retaining proper human supervision for recruitment decisions. XAI needs to be analyzed using both subjective and objective measures, not only based on the users' satisfaction or transparency perception.

The current study can be limited by the fact that it is based on a relatively small sample of HR managers in a specific experimental recruitment environment. Future research may involve broader samples of people and apply the analysis to other HR-related activities such as onboarding, employee engagement, performance management, etc.

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