



Influence of Artificial Intelligence-Driven Recruitment on Employee Engagement and Retention

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Abstract – This study examines the influence of Artificial Intelligence (AI)-driven recruitment on employee engagement and retention. AI is increasingly used in recruitment for candidate sourcing, resume screening, skill matching, interview scheduling, chatbot communication, assessment support and recruitment analytics. While these applications can improve recruitment efficiency, they may also influence employees' perceptions of fairness, transparency, candidate-job fit and organizational trust. The study adopts a quantitative approach and follows the structure of the supplied model paper, using a structured questionnaire and an illustrative sample of 300 respondents. Frequency analysis, Chi-square, ANOVA, correlation analysis, and multiple regression are proposed to examine the relationships among AI-driven recruitment, employee engagement, and retention. The illustrative findings indicate significant relationships between AI recruitment effectiveness and employee outcomes. Perceived fairness and transparency and candidate-job fit show positive relationships with engagement and retention, while concerns regarding excessive automation can reduce trust. The study recommends human oversight, transparent AI practices, bias monitoring, responsible data use, recruiter training and continuous evaluation of post-hire outcomes. The study concludes that AI-driven recruitment can contribute to stronger engagement and retention when technology is implemented as a human-centred decision-support mechanism rather than as a complete replacement for human judgement.

Keywords - Artificial Intelligence, AI-driven recruitment, employee engagement, employee retention, recruitment effectiveness, candidate-job fit, algorithmic fairness.

I. INTRODUCTION

Artificial Intelligence has emerged as an important technological development in Human Resource Management. Organizations are increasingly using AI to transform traditional recruitment activities into data-driven and automated processes. Recruitment platforms can use algorithms to identify potential candidates, screen applications, match skills with job requirements, communicate with applicants, schedule interviews and generate recruitment analytics. These developments can reduce administrative workload and improve the speed with which organizations process large numbers of applications. Recruitment is not only an organizational process for filling vacancies; it is also an important part of the employee experience. The manner in which candidates are assessed and selected can influence perceptions of fairness, organizational attractiveness and trust. When employees believe that the organization uses appropriate and transparent criteria during recruitment, they may develop stronger positive attitudes toward the employer. Conversely, unexplained algorithmic decisions, concerns about privacy, perceived discrimination or excessive dependence on automated systems may weaken confidence in the organization. Employee engagement concerns employees' psychological involvement, enthusiasm and commitment toward their work. Employee retention refers to an organization's ability to retain employees and

employees' willingness to continue working with the organization. Recruitment quality can influence these outcomes through person-job fit, realistic expectations, organizational trust and the psychological connection established from the beginning of employment. The present study examines the influence of AI-driven recruitment on employee engagement and retention, focusing on AI recruitment effectiveness, perceived fairness and transparency, and candidate-job fit, and their relationships with engagement and retention intention.

Theoretical Background

The study draws on Technology Acceptance perspectives, Organizational Justice Theory, Person-Job Fit Theory and Social Exchange Theory. Technology acceptance perspectives emphasize usefulness and ease of use in technology adoption. Organizational Justice Theory highlights fairness in procedures and decisions, which is relevant when algorithms participate in recruitment. Person-Job Fit Theory emphasizes compatibility between employee capabilities and job requirements. Social Exchange Theory suggests that positive organizational treatment can encourage commitment and continued membership. Together, these perspectives provide a framework for understanding how AI recruitment effectiveness, fairness and job fit may influence engagement and retention.



II. REVIEW OF LITERATURE

P.Subburaj et al. (2026) examined employee retention strategies in the Indian textile industry, focusing on the challenges organizations face in retaining skilled and experienced employees. The study highlighted the importance of appropriate compensation, career development opportunities, employee welfare, supportive work environments, and effective management practices in reducing employee turnover. It suggested that textile organizations need to adopt comprehensive retention strategies to improve employee satisfaction, commitment, and long-term organizational performance.

S Siva Subramanian and P.Subburaj (2025) investigated the role of artificial intelligence in strategic human resource management, particularly AI-driven recruitment practices in IT companies in Chennai. The study emphasized that AI technologies can improve recruitment efficiency through automated candidate screening, data-driven selection, faster decision-making, and better alignment between job requirements and candidate skills. However, the study also recognized concerns about data privacy, algorithmic bias, transparency, and the need for human involvement in recruitment decisions.

Setyawan, Zou, Jie, Jixiong, and Widyatiningtyas (2024) investigated the role of artificial intelligence in talent acquisition and retention. The study emphasized that AI can help organizations address lengthy recruitment processes and support efforts to retain quality employees. This perspective is particularly relevant to the present study because it connects AI not only with attracting and selecting employees but also with retaining valuable talent. Thakur, Hinge, and Adhegaonkar (2023) examined the use of artificial intelligence in recruitment and selection through multiple case studies of AI-based recruitment tools. The study found that AI can improve recruitment efficiency, broaden the candidate pool, and reduce the influence of subjective factors such as favoritism and nepotism in selection decisions. The authors also noted that AI-supported HR practices can contribute to employee development and retention by improving the efficient use of organizational resources. However, they emphasized that AI should complement human judgement rather than completely replace it.

Vrontis et al. (2022) reviewed AI, robotics, and advanced technologies in Human Resource Management and identified the growing importance of AI-enabled HR practices while recognizing the need for appropriate organizational and human resource considerations.

Dwivedi et al. (2021) discussed multidisciplinary opportunities and challenges associated with Artificial Intelligence and emphasized responsible implementation, governance and ethical considerations.

Raghavan et al. (2020) examined algorithmic hiring and highlighted concerns surrounding bias and the evaluation of fairness claims. Their work demonstrates why AI recruitment should be monitored for unintended discriminatory outcomes.

Scope of the Study

The study focuses on employees who have experienced recruitment in organizations using digital, automated or AI-supported recruitment practices. It examines AI-driven recruitment effectiveness, fairness and transparency, candidate-job fit, employee engagement and retention intention. The study can be adapted to IT, banking, healthcare, manufacturing, education and service organizations.

Objectives of the Study

- To examine the influence of AI-driven recruitment effectiveness on employee engagement.
- To identify the relationship between AI-driven recruitment effectiveness and employee retention intention.
- To examine the influence of perceived fairness and transparency in AI-supported recruitment on employee engagement.
- To analyze the relationship between candidate-job fit and employee retention intention.
- To provide recommendations for implementing AI-driven recruitment in a responsible and employee-centered manner.

Hypotheses

- H1: There is a significant relationship between AI-driven recruitment effectiveness and employee engagement.
- H2: AI-driven recruitment effectiveness significantly influences employee retention intention.
- H3: Perceived fairness and transparency in AI-driven recruitment significantly influence employee engagement.
- H4: Candidate-job fit significantly influences employee retention intention.
- H5: AI-driven recruitment effectiveness, perceived fairness and transparency, and candidate-job fit significantly predict employee retention intention.

III. RESEARCH METHODOLOGY

The study adopts a quantitative approach using a structured questionnaire to collect data from 300 respondents with experience of AI-supported or digitally enabled recruitment. The questionnaire includes demographic information and statements measuring AI-driven recruitment effectiveness, fairness and transparency, candidate-job fit, employee engagement and retention intention. A five-point Likert scale may be used, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. Convenience sampling is used for the model study. The



analysis follows the statistical approach of the supplied model paper and includes frequency tests, Chi-square tests, ANOVA, correlation analysis and multiple regression. Note: The statistical values presented below are illustrative model results created to demonstrate the complete paper format. They should be replaced by actual survey results before journal submission.

IV. ANALYSIS AND INTERPRETATION

Table 1: Demographic Profile of Respondents

Demographic Variable	Particular	Frequency	Percentage
Age	Below 25	42	14
	25–34	108	36
	35–44	84	28
	45–54	48	16
	55 and above	18	6
Gender	Male	174	58
	Female	126	42
Educational Qualification	Undergraduate	78	26
	Postgraduate	156	52
	Professional/Other	66	22
Work Experience	Below 3 years	60	20
	3–5 years	102	34
	6–10 years	84	28
	Above 10 years	54	18
AI Recruitment Exposure	Low	57	19
	Moderate	141	47
	High	102	34
	Total	300	100

*** Source: Primary data

Source: Illustrative model data. The demographic profile indicates that the largest age group is 25–34 years (36%). Postgraduates constitute 52% of respondents. Respondents with 3–5 years of experience form the largest experience group at 34%. Regarding AI-supported recruitment exposure, 47% report moderate exposure and 34% report high exposure.

Chi-Square Test

Hypothesis: There is a significant relationship between perceived effectiveness of AI-driven recruitment and employees' intention to retain.

Table 2: Chi-Square Test for AI-Driven Recruitment Effectiveness and Retention Intention

Variable	Chi-square Value	df	p-value
AI-Recruitment Effectiveness vs. Retention Intention	28.64	4	<0.001

*** Source: Primary data

The Chi-square result indicates a statistically significant relationship between perceived AI-driven recruitment effectiveness and employee retention intention ($\chi^2 = 28.64$, $df = 4$, $p < 0.001$). Since the p-value is below 0.05, the null hypothesis is rejected. The illustrative finding suggests that perceptions of AI recruitment effectiveness are associated with employees' intention to remain with the organization.

Anova

Hypothesis: There is a significant difference in employee engagement scores across different levels of perceived AI-driven recruitment effectiveness.

Table 3: ANOVA for Employee Engagement Across AI Recruitment Effectiveness Groups

Source of Variation	Sum of Squares	df	Mean Square	F	p-value
Between Groups	286.52	2	143.26	8.74	<0.001
Within Groups	4868.31	297	16.39	—	—
Total	5154.83	299	—	—	—

The ANOVA result shows a significant difference in employee engagement scores across different levels of AI-driven recruitment effectiveness ($F = 8.74$, $p < 0.001$). The illustrative result indicates that employees with different perceptions of AI recruitment effectiveness report significantly different levels of engagement.

Correlation Analysis

Hypothesis: There is a significant correlation between perceived fairness and transparency in AI-driven recruitment and employee engagement.

Table 4: Correlation Between AI Recruitment and Employee Outcomes

Variable	Correlation Coefficient (r)	p-value
Fairness & Transparency vs. Employee Engagement	0.61	<0.001
Candidate-Job Fit vs. Retention Intention	0.57	<0.001
AI Recruitment Effectiveness vs. Retention Intention	0.54	<0.001

*** Source: Primary data

The illustrative correlation results show a positive and statistically significant relationship between perceived fairness and transparency and employee engagement ($r =$



0.61, $p < 0.001$). Candidate-job fit is also positively related to retention intention ($r = 0.57$, $p < 0.001$), and AI recruitment effectiveness is positively related to retention intention ($r = 0.54$, $p < 0.001$).

Multiple Regression Analysis

Hypothesis: AI recruitment effectiveness, fairness and transparency, candidate-job fit and employee engagement significantly predict employee retention intention.

Table 5: Multiple Regression Analysis for Employee Retention Intention

Predictor Variable	B	SE B	β	t	p-value
AI Recruitment Effectiveness	0.28	0.07	0.25	4.0	<0.001
Fairness & Transparency	0.31	0.06	0.34	5.17	<0.001
Candidate-Job Fit	0.24	0.07	0.22	3.43	0.001
Employee Engagement	0.29	0.06	0.31	4.83	<0.001

*** Source: Primary data

Model summary: Illustrative $R^2 = 0.48$; Adjusted $R^2 = 0.47$; $F = 68.12$; $p < 0.001$. The regression analysis indicates that AI recruitment effectiveness ($\beta = 0.25$), fairness and transparency ($\beta = 0.34$), candidate-job fit ($\beta = 0.22$), and employee engagement ($\beta = 0.31$) are significant positive predictors of retention intention in the illustrative model. Fairness and transparency show the strongest standardized coefficient among the listed predictors.

Findings of the Study

- The largest age group in the illustrative sample is 25–34 years (36%), while postgraduates account for 52% of respondents.
- 47% of respondents report moderate exposure to AI recruitment, while 34% report high exposure.
- The Chi-square test indicates a significant relationship between AI-driven recruitment effectiveness and retention intention ($\chi^2 = 28.64$, $p < 0.001$).
- The ANOVA indicates significant differences in employee engagement across levels of AI-driven recruitment effectiveness ($F = 8.74$, $p < 0.001$).
- Perceived fairness and transparency are positively associated with employee engagement ($r = 0.61$, $p < 0.001$).
- Candidate-job fit is positively related to retention intention ($r = 0.57$, $p < 0.001$).
- AI recruitment effectiveness is positively related to retention intention ($r = 0.54$, $p < 0.001$).
- The regression model indicates that fairness and transparency, employee engagement, AI recruitment

effectiveness, and candidate-job fit are significant predictors of retention intention.

Suggestions

- Enhance transparency: Organizations should clearly communicate when AI is used in recruitment and explain the broad purpose of automated assessments and recommendations.
- Maintain human oversight: AI should support recruiters rather than completely replace human judgment, particularly for final selection and complex candidate decisions.
- Monitor algorithmic bias: HR departments should regularly evaluate recruitment algorithms for unintended discriminatory outcomes and validate job-related selection criteria.
- Improve candidate-job fit: AI tools should focus on relevant skills, qualifications, experience and job requirements to support better matching.
- Protect data privacy: Recruitment data should be collected and processed responsibly, with appropriate access controls and clear organizational policies.
- Train HR professionals: Recruiters should be trained to interpret AI outputs critically and recognize the limitations of automated recommendations.
- Strengthen employee engagement: Organizations should connect recruitment promises with actual employee experiences through effective onboarding, communication, support and career development.
- Measure retention outcomes: Organizations should track engagement, satisfaction, performance and retention after AI-supported hiring to assess whether recruitment technology creates sustainable value.

V. CONCLUSION

The study highlights the growing importance of Artificial Intelligence in recruitment and its potential influence on employee engagement and retention. AI can improve recruitment efficiency through automated screening, skills matching, candidate communication and analytics. However, technological efficiency alone is not sufficient to produce positive employee outcomes. The way employees perceive fairness, transparency, candidate-job fit and organizational treatment remains important. The illustrative statistical results show significant relationships between AI-driven recruitment effectiveness and retention intention and between fairness and transparency and employee engagement. The regression results further suggest that recruitment effectiveness, fairness and transparency, candidate-job fit and employee engagement can contribute to explaining retention intention. Organizations should therefore implement AI-driven recruitment through a balanced human-AI approach.

Scope for Future Research

Future studies can examine AI trust, algorithmic explainability, perceived organizational justice, privacy



concerns, employer branding, candidate experience and psychological contract. Structural Equation Modelling can be used to test whether employee engagement mediates the relationship between AI-driven recruitment and retention. Comparative studies across industries and longitudinal studies can provide stronger evidence of how recruitment experiences influence employee outcomes over time.

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