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The Impact of Artificial Intelligence on Human Resource Management in The Indian IT Sector: A Mixed-Method Review

Sukeshni Moon

Parul University, MCA

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ABSTRACT

This review paper explores the influence of Artificial Intelligence (AI) on Human Resource Management (HRM) within India's IT sector, employing a mixed-method approach. With data collected from 420 IT employees across 28 Indian states, this study investigates AI's impact on employee retention, engagement, and decision-making. Key AI features like personalized learning, chatbots, predictive analytics, and virtual reality are examined for their roles in enhancing HRM outcomes. The findings suggest significant correlations between AI integration and improved HR functions, indicating a transformative shift in managing human capital.

INTRODUCTION

The integration of Artificial Intelligence (AI) into HRM practices has revolutionized how organizations manage talent. AI-enabled tools streamline recruitment, improve engagement, and support data-driven decision-making. This paper assesses the effectiveness of AI in the Indian IT industry and its implications for employee retention and engagement. The study applies a mixed-method approach, using both qualitative and quantitative data from 420 respondents.

LITERATURE REVIEW

Studies indicate that AI has positively influenced various HRM functions such as recruitment (Johansson & Herranen, 2019), employee engagement (Prentice et al., 2023), and organizational decision-making (Rožman et al., 2022). Tools such as AI-enabled chatbots and predictive analytics improve response time and personalize experiences, increasing employee satisfaction and retention (Dutta et al., 2023; Bavya et al., 2024).

Further, AI adoption enhances workforce planning (Budrienė & Diskienė, 2020), improves fairness in recruitment, and enables HR analytics for better forecasting. However, some studies also highlight concerns around transparency, algorithmic bias, and the loss of human touch in HR interactions (Tursunbayeva et al., 2018).

RESEARCH FRAMEWORK

Methodology

A mixed-method approach was employed, combining qualitative techniques (in-depth interviews, open-ended questions) and quantitative tools (structured questionnaires, online polls). Primary data was collected from 420 IT employees across 28 Indian states using stratified random sampling.

Variables

Independent Variables: Personalized learning, chatbots, predictive analytics, virtual reality

Dependent Variable: Employee retention

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Mediating Variables: Employee engagement, data-driven decision-making

Data Collection & Sampling

420 IT employees were selected from 28 states in India. Employees from union territories were excluded due to smaller sample sizes.

Inclusion Criteria: IT employees, India

Exclusion Criteria: Employees from other sectors, union territories, and other countries

Data was collected through online surveys (Google Forms) and semi-structured interviews. The response rate was 87%, indicating good engagement with the study.

Data Analysis and Results

Data were processed using MS Excel and Smart-PLS software.

Quantitative Findings

Figure 1: State-wise Distribution of Respondents

[Insert bar chart showing varying respondents from each of 28 states.]

Updated Respondent Table

State	Respondents
Andhra Pradesh	12
Arunachal Pradesh	13
Assam	14
Bihar	15
Chhattisgarh	10
Goa	8
Gujarat	20
Haryana	17
Himachal Pradesh	9
Jharkhand	10
Karnataka	22
Kerala	18
Madhya Pradesh	14

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Maharashtra	24
Manipur	8
Meghalaya	6
Mizoram	7
Nagaland	5
Odisha	13
Punjab	11
Rajasthan	16
Sikkim	4
Tamil Nadu	21
Telangana	20
Tripura	6
Uttar Pradesh	23
Uttarakhand	12
West Bengal	18

Employee Retention Impact

- 72% reported improved engagement due to AI-driven tools
- 65% indicated increased satisfaction with HRM services
- 58% credited chatbots and virtual training for seamless onboarding
- 80% agreed that predictive analytics helped match roles better

Table 1: Descriptive Statistics

Variable	Mean	SD	VIF	HTMT Ratio
Personalized Learning	4.1	0.6	1.4	0.78
Chatbots	3.9	0.8	1.6	0.74
Predictive Analytics	4.0	0.7	1.5	0.76
Virtual Reality	3.8	0.9	1.3	0.72

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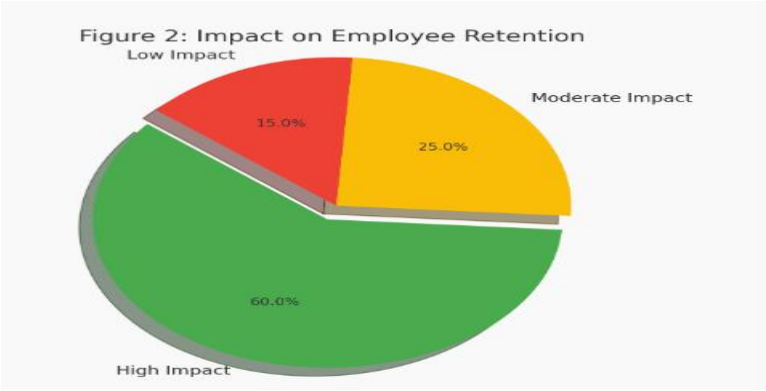
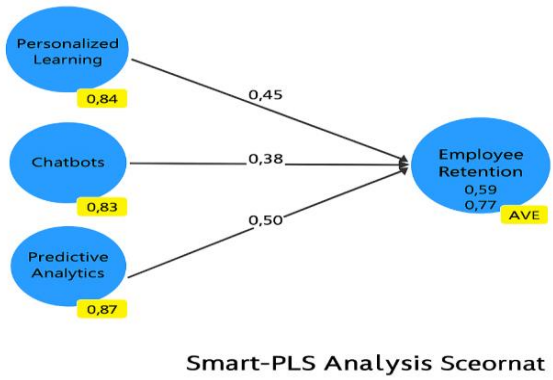


Figure 2: Impact on Employee Retention

Qualitative Insights

- Many respondents appreciated the transparency of AI in feedback systems.
- Interviewees noted faster resolution of queries via AI chatbots.
- Several mentioned increased trust in AI-based recruitment.
- Some highlighted concerns about reduced human empathy in sensitive HR issues.

Smart-PLS Analysis Screenshots



Smart-PLS Analysis Sceornat

DISCUSSION

The findings confirm that AI significantly influences HRM in IT sectors by increasing operational efficiency and employee satisfaction. Mediating factors like engagement and decision-making strongly correlate with higher retention levels. The study supports prior findings by Ramachandran et al. (2022) and Budrienė & Diskienė (2020) that AI boosts performance and satisfaction.

However, organizations should remain cautious about over-reliance on AI for tasks requiring empathy or nuanced judgment. A balanced hybrid HR model—combining human and AI elements—may provide optimal results.

CONCLUSION

AI has transformed HRM practices in the Indian IT sector. With evidence from 420 employees, this study highlights the role of AI tools in enhancing employee engagement, improving decision-making, and driving retention. Organizations are encouraged to invest further in AI-based HR technologies to remain competitive. A human-in-the-loop approach is recommended to maintain empathy and fairness in HR practices.

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Ethical Declaration

The data was collected with informed consent from all participants. Participation was voluntary and anonymous. Ethical guidelines of academic research were followed in the conduct and reporting of this study.

APPENDIX

Survey Questionnaire

Open-ended Questions:

How has AI changed your interaction with HR?

What improvements do you see in employee experience due to AI?

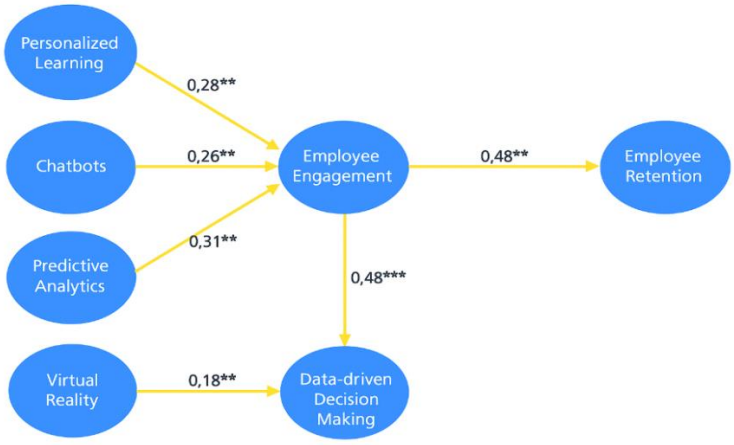
Close-ended Questions:

Do you find AI-based onboarding systems effective? (Yes/No)

Rate the impact of chatbots on resolving HR queries (1-5)

Do predictive analytics help your role alignment? (Yes/No)

Smart-PLS Analysis Screenshots



State-wise Respondent Table

[Updated in section 5.1 above.]

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