



IMPACT OF ARTIFICIAL INTELLIGENCE ON HR PRACTICES: A STUDY IN THE INDIAN IT SECTOR

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Abstract: The revolutionary effects of artificial intelligence (AI) on human resource (HR) practices in the Indian IT industry are examined in this study. It looks into how AI tools are affecting learning and development, employee engagement, performance management, and hiring. The study offers both quantitative and qualitative insights into AI adoption using primary data gathered from 120 HR professionals working for Indian IT companies. With practical suggestions for HR professionals to maximize AI usage while upholding a human-centric approach, the study highlights both opportunities and challenges.

Keywords: Artificial Intelligence, Human Resource Management, IT Sector, Recruitment, Performance Management, India

1. Introduction

The way businesses recruit, retain, and manage talent is being redefined by the incorporation of Artificial Intelligence (AI) into Human Resource Management (HRM). AI is becoming essential, particularly in the Indian IT industry, a global center for technological innovation. AI applications are becoming more and more common, ranging from predictive analytics for employee retention to chatbot-based hiring (Meijerink et al., 2021; Gartner, 2023).

Human resource management (HRM) has been significantly impacted by the rise of artificial intelligence (AI). The use of AI in HR functions has increased dramatically over the last ten years in the Information Technology (IT) sector, an industry distinguished by quick innovation and a highly skilled workforce (Davenport & Ronanki, 2018). In order to increase productivity, accuracy, and strategic decision-making, artificial intelligence (AI) technologies like machine learning, natural language processing (NLP), predictive analytics, and robotic process automation are being incorporated into HR procedures more and more (Brock & von Wangenheim, 2019). AI tools are used in HRM for a number of tasks, such as hiring, performance reviews, employee engagement, training, and workforce planning. AI-powered recruitment systems, for example, can screen thousands of resumes in a fraction of the time needed by human recruiters, use algorithmic matching to find the best candidates, and even perform preliminary chatbot-based interviews (Sharma et al., 2021). According to Tambe et al. (2019), predictive analytics also helps businesses anticipate employee attrition risks and create proactive retention plans. These applications provide significant benefits in matching workforce capabilities with organizational goals, which is crucial in the IT industry where competitive skill demands make talent acquisition and retention crucial.

Furthermore, incorporating AI into HR procedures is consistent with the larger digital transformation plans that IT companies are pursuing. Early adoption is facilitated by the industry's familiarity with technology, enabling HR departments to use cloud-based solutions, AI-driven platforms, and advanced data analytics for decision-making (Mhlanga, 2021). These tools allow HR professionals to concentrate on strategic roles like innovation, organizational culture, and employee development by streamlining administrative tasks and offering actionable insights.

Notwithstanding its advantages, AI's impact on HR procedures also brings up a number of organizational, ethical, and legal issues. Algorithmic bias is a significant problem that can lead to discriminatory hiring practices if training data are either historically biased or not representative (Cowgill et al., 2020). Furthermore, an over-reliance on AI-powered systems may result in less human interaction, which could have an impact on employee engagement, trust, and the perceived fairness of HR procedures (Meijerink et al., 2021). Adoption is made more difficult by data privacy and cybersecurity concerns because AI systems frequently need access to private employee data (Boudreau & Cascio, 2017).

IT companies looking to optimize the benefits of AI in HR while maintaining compliance, equity, and a satisfying employee experience must comprehend these opportunities and difficulties. With an emphasis on how AI transforms hiring, performance management, learning and development, and employee engagement, this article attempts to examine how AI is affecting HR procedures in the IT industry. It also examines the advantages and disadvantages of these changes, offers case studies from top IT companies, and makes recommendations for responsible AI adoption tactics that maintain HRM's human-centeredness.

2. Objectives of the Study

1. To examine the extent of AI integration in HR functions in Indian IT companies.
2. To assess HR professionals' perceptions of AI tools.
3. To analyze the impact of AI on HR effectiveness and employee satisfaction.
4. To offer practical recommendations for future AI implementation in HR.

3. Methodology

The impact of artificial intelligence (AI) on human resource (HR) practices in the Indian IT industry is investigated in this study using a descriptive and analytical research design. Finding out how AI tools and technologies affect different HR tasks like hiring, performance management, learning and development, staff retention, and administrative effectiveness is the goal of the study.

3.1 Data Collection and Sampling

Purposive sampling was used to select 120 HR professionals as respondents, focusing on those who have direct experience with AI-based tools in HR departments. The sample was selected from mid-sized and large IT companies located in Hyderabad, one of India's major technology hubs. The participants chosen for this sampling strategy are guaranteed to have pertinent experience and knowledge of integrating AI into HR procedures.

A structured questionnaire was used to gather data on AI adoption and its effects on HR procedures. It was intended to capture both quantitative metrics and qualitative opinions. Semi-structured interviews were added to the questionnaire to deepen the analysis and gather narrative insights on the advantages, difficulties, and tactical application of AI tools.

3.2 The HR Efficiency Index's (HREI) construction

The study developed a composite HR Efficiency Index (HREI) to quantify the impact of AI on HR outcomes. Using a weighted average approach, the index combines five fundamental aspects of HR operations, giving each of the following indicators equal weight (weight = 0.2):

HREI is equal to $0.2(RQ)+0.2(PM)+0.2(LD)+0.2(ER)+0.2(AE)$.

Where:

RQ stands for Recruitment Quality Score.

PM stands for Performance Management Score.

Learning and Development Score (LD)

ER stands for Employee Retention Score.

AE stands for Administrative Efficiency Score.

Based on respondents' evaluations in the structured questionnaire, each component score is normalized on a scale from 0 to 100. This index acts as the dependent variable in regression models and enables a comprehensive evaluation of HR performance efficiency under the impact of AI.

4. Data Presentation and Analysis

By automating repetitive tasks, facilitating predictive decision-making, and greatly improving the overall employee experience, artificial intelligence (AI) is transforming human resource management (HRM). AI is utilized in the hiring process for resume screening, chatbot-assisted first contacts, and candidate ranking according to preset standards. AI makes it easier to streamline induction programs and automate document verification during onboarding. AI tools for performance management offer productivity analytics and real-time feedback systems, enabling data-driven performance reviews. AI-powered adaptive learning platforms aid in learning and development by identifying skill gaps and customizing training materials. Additionally, sentiment analysis and AI-powered surveys improve employee engagement by providing insightful data on

worker satisfaction and morale. AI is changing HR operations through these applications to become more strategic, responsive, and efficient.

4.1 Demographic Profile of Respondents

The 120 responders' demographic profile shows that gender, age, and experience levels are all fairly represented. There is a moderate gender diversity among HR professionals in Indian IT firms, with males making up 59.16% of the sample and females 40.84%. The workforce is primarily mid-career, with the majority of respondents (40%) falling into the 31–40 age range, followed by 24.16% in the 26–30 age range and 20% in the 41–50 age range.

Table 1
demographic profile of respondents

Category	Frequency	Percentage
Gender		
Male	71	59.16
Female	49	40.84
Age		
Less than 25	8	6.67
26–30	29	24.16
31–40	48	40.00
41–50	24	20.00
51 and above	11	9.17
Experience		
Less than 3 years	16	13.33
3–5 Years	35	29.17
5–10 Years	42	35.00
More than 10 Years	27	22.50

Source: Computed from primary data

Remarkably, 9.17% of people are 51 years of age or older, and only 6.67% are younger than 25. Of those surveyed, 35% have 5–10 years of work experience, 29.17% have 3–5 years, and 22.5% have more than 10 years. According to this distribution, the vast majority of HR professionals polled are seasoned workers with extensive exposure to the sector.

4.2 AI Adoption in HR Functions

Table 2 shows that different HR functions in Indian IT companies have adopted AI at different rates. AI is most commonly utilized in the recruitment process, according to 61.7% of respondents, which shows how effective it is at expediting the hiring process with tools like chatbots and resume screening. A considerable percentage of respondents (41.7%) and 43.3%) report moderate use, indicating growing but cautious integration, while 40% and 35% of respondents, respectively, indicate high usage of learning and development and performance management.

Table 2
level of ai adoption in hr functions

HR Function	High Use	Moderate Use	Low/No Use
Recruitment	74 (61.7%)	28 (23.3%)	18 (15%)
Performance Management	42 (35%)	52 (43.3%)	26 (21.7%)
Learning & Development	48 (40%)	50 (41.7%)	22 (18.3%)
Employee Engagement	36 (30%)	49 (40.8%)	35 (29.2%)

Source: Computed from primary data

With only 30% reporting high usage and 29.2% reporting low or no use, employee engagement lags slightly behind. This is due to the limited use of AI tools such as sentiment analysis and engagement surveys in this domain. All things considered, the data indicates that although AI is becoming more popular in core operational tasks like hiring, its use in strategic and human resources domains is still developing.

4.3 AI Use vs HR Efficiency

The degree of AI usage and HR efficiency are clearly positively correlated, as Table 3 shows. The HR Efficiency Score rises from 45 to 85 in tandem with the AI Usage Score's increase from 2 to 10. According to

this trend, increased use of AI tools in HR processes improves productivity in areas like hiring, performance reviews, training, and employee engagement.

Table: 3
hr efficiency score by ai usage level

AI Usage Score (0–10)	HR Efficiency Score (0–100)
2	45
4	58
6	68
8	77
10	85

The consistent rise in productivity indicates that the use of AI promotes data-driven decision-making, more efficient procedures, and improved employee experiences. All things considered, the table highlights how, when used properly, AI has the potential to greatly improve HR performance.

4.4 Regression Analysis of Artificial Intelligence Use and HR Efficiency

The use of artificial intelligence (AI) and HR efficiency among HR professionals in the Indian IT sector are found to be strongly and statistically significantly correlated by the regression model. With adjusted R^2 of 0.462, the model shows a good fit and explains roughly 46.4% of the variance in HR efficiency ($R^2 = 0.464$). AI use and HR efficiency appear to have a strong positive linear relationship, as indicated by the correlation coefficient (R) of 0.681. At the 1% level, the model's overall significance is confirmed by the F-statistic of 258.106 and the p-value of 0.000.

The results support the idea that technology-driven HR practices improve organizational effectiveness in the IT sector by confirming that the use of AI in HR functions greatly increases efficiency.

R= 0.681 **R²= 0.464** **Adjusted R²= 0.462**
F= 258.106 **P=0.000** **Std. error of estimate = 0.73316**

	B	Std. Error	Standardized Coefficients Beta	t-value	p-value
Intercept	-1.340	.175		-7.670	.000
AI usage	.224	.014	.681	16.066	.000

a. Dependent Variable: HR Efficiency

4.5 Key Findings

The study offers important new information about how Artificial Intelligence (AI) is incorporated into and affects Human Resource Management (HRM) in the Indian IT industry. First off, the respondents' demographic profile reveals a balanced representation of both gender and age, with the majority being HR professionals with significant experience in the middle of their careers. Second, the recruitment function is where AI adoption is most noticeable, with 61.7% of respondents reporting heavy use of AI tools like chatbots and resume screening. Though to a lesser degree, learning and development and performance management also exhibit notable degrees of AI integration. The area with the least adoption of AI is still employee engagement, suggesting a possible weakness in using AI to improve interactions and morale among employees. Crucially, the HR Efficiency Index (HREI) shows a definite positive relationship between HR efficiency and the degree of AI use. HR efficiency scores rise in tandem with AI usage scores, suggesting that when AI is used effectively, it improves operational effectiveness, decision-making quality, and employee-centric outcomes.

5. Suggestions and Conclusion

According to the results, Indian IT companies should keep growing and integrating AI into all HR functions, especially in areas that are currently lagging behind, like workforce planning and employee engagement. In order to ensure that HR professionals can effectively interpret and apply AI-generated insights, organizations should invest in training them to work alongside AI tools. Companies must also set up governance frameworks that address algorithmic bias, data privacy, and transparency in AI-based decision-making in order to steer clear of ethical pitfalls. To preserve the human-centric character of HRM, collaborative models that combine human judgment with AI accuracy ought to be encouraged. Additionally, it is critical that businesses regularly audit AI systems to evaluate their impact and fairness, particularly in hiring and

performance reviews. Transparency and trust can also be increased by fostering a feedback-driven culture where staff members can express concerns about the application of AI.

For Indian IT companies, incorporating AI into HR procedures is now a strategic necessity rather than a sci-fi idea. According to the study, artificial intelligence (AI) greatly improves HR efficiency, particularly in operational tasks like performance management and hiring. There is potential for wider adoption, though, given its comparatively small application in strategic and employee-focused domains. AI has enormous potential to increase accuracy, expedite procedures, and support data-driven HR strategies, but it also presents ethical, biased, and less human interaction issues. Thus, a well-rounded strategy that incorporates both human empathy and technological advancement is crucial. Indian IT companies can improve HR performance and create a more flexible, inclusive, and forward-thinking workplace by strategically and responsibly implementing AI.

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