

A Study on AI Adoption in HR and its impact on Organizational Efficiency

¹Dr. R. Karthi, ²M. Bhuvaneshwari

¹ Professor, ² MBA Student,

*Department of Management Studies,
E.G.S. Pillay Engineering College,
Nagapattinam, Tamilnadu*

Abstract: This study examines the impact of Artificial Intelligence (AI) adoption in Human Resource Management (HRM) and its influence on organisational efficiency. In the era of Industry 4.0, organisations are increasingly using AI technologies in HR functions such as recruitment, training, performance appraisal, and employee engagement. The study aims to understand how AI helps improve HR operations and supports effective decision-making. A mixed-method research approach was used, where data was collected through surveys from HR professionals along with secondary sources such as journals and reports. The findings show that AI improves recruitment speed, reduces human bias in candidate selection, and enhances employee productivity. AI also helps organisations manage workforce data efficiently and supports better talent management strategies. The study highlights that AI enables HR professionals to focus more on strategic and value-added activities rather than routine tasks. However, challenges such as data privacy issues, ethical concerns, high implementation costs, and lack of technical skills still exist. Employee acceptance and proper training are also important for successful AI implementation in HR practices. The study emphasizes that AI should support human decision-making rather than replace human involvement completely. Overall, AI acts as a strategic tool that improves organisational performance, innovation, and operational efficiency. The research concludes that responsible and human-centric use of AI can help organisations achieve long-term growth and employee satisfaction.

Index-terms: Artificial Intelligence (AI) Human Resource Management (HRM), AI Adoption, Organisational Efficiency Recruitment Automation, Employee Performance Management, Talent Acquisition, Data-Driven Decision Making, Employee Experience, Workforce Analytics, Digital Transformation, HR Technology Integration.

I.INTRODUCTION

Artificial Intelligence (AI) has become an important technological advancement that is transforming modern organizations and improving operational efficiency. Organizations are increasingly adopting AI technologies to automate processes, support decision-making, and enhance productivity. In Human Resource Management (HRM), AI is widely used in areas such as recruitment, employee onboarding, performance management, training, and workforce planning. AI-powered tools help organizations reduce manual work, improve accuracy, save time, and make better HR decisions. The adoption of AI has transformed HR from a traditional administrative function into a strategic partner that contributes to organizational growth and efficiency. Various studies highlight that AI improves recruitment quality, employee management, productivity, and overall organizational performance. At the same time, organizations also face challenges such as high implementation cost, lack of technical skills, employee resistance, and ethical concerns related to data privacy and transparency. Despite these challenges, AI continues to play a major role in supporting modern HR practices and organizational success. Therefore, studying AI adoption in HR and its impact on organizational efficiency has become highly relevant in today's business environment.

II.NEED OF THE STUDY

The need for this study arises because many organizations are rapidly using Artificial Intelligence (AI) in Human Resource Management without having proper standards or clear understanding of its long-term effects. AI helps companies improve recruitment, employee management, and decision-making by saving time and increasing efficiency. However, along with these benefits, organizations also face challenges such as lack of human interaction, privacy concerns, and possible bias in AI-based decisions.

This study is important to understand both the positive and negative impacts of AI in HR practices and how it influences overall organizational efficiency. It helps identify whether AI actually improves productivity, employee satisfaction, and HR performance in real workplace situations. The study also supports HR professionals in balancing technology with human values, ensuring ethical practices while still gaining the benefits of automation. In addition, it provides useful suggestions for organizations to adopt AI effectively and responsibly in their HR functions.

RESEARCH GAP

There is a lack of detailed research on how the long-term use of Artificial Intelligence, especially Generative AI (GenAI), affects employee trust, workplace relationships, and organizational culture. Most existing studies mainly focus on operational benefits such as faster recruitment, improved productivity, and reduced workload, but they do not fully examine the human side of AI adoption in HR. Many organizations are using AI tools without clearly understanding how employees feel about decisions made by technology or how it impacts employee satisfaction and

communication within the workplace. In addition, limited studies discuss ethical issues such as bias, fairness, transparency, and the loss of personal interaction in HR practices. There is also very little research available on the impact of AI in non-IT sectors. Therefore, this study aims to fill these gaps by analyzing both the efficiency and human impact of AI adoption in HR and by suggesting ways to use AI responsibly and effectively in organizations.

III.OBJECTIVES OF THE STUDY

- To examine the level of adoption of artificial intelligence technologies in human resource functions within organizations.
- To identify the key areas of HR where artificial intelligence is implemented to improve operational efficiency.
- To analyze the impact of artificial intelligence adoption on organizational efficiency and productivity.
- To evaluate employees' and HR professionals' perceptions towards the use of artificial intelligence in HR practices.

IV.SCOPE OF THE STUDY

- This study focuses on analyzing the adoption and impact of Artificial Intelligence in Human Resource Management within selected organizations. The study primarily examines how AI technologies are being integrated into various HR functions such as recruitment, selection, employee engagement, training and development, and performance management.
- This study is limited to organizations located in specific regions (such as Chennai and nearby areas), providing insights based on the data collected from employees and HR professionals working in these organizations. It aims to understand the current level of AI adoption, the key areas where AI is implemented, and its influence on organizational efficiency and productivity.

V.REVIEW OF LITERATURE

Tabor-Błażewicz (2023) stated that AI adoption in HR improves recruitment efficiency, decision accuracy, and handling of large data. The study observed that automation enhances speed and productivity in HR functions. It also pointed out challenges such as limited human touch and lack of awareness among professionals. Further, the research found that actual implementation levels remain low in many organizations. The author concluded that greater training and strategic focus are needed for wider adoption.

Sharma and Gupta (2025) explained that AI strengthens recruitment, performance management, and employee engagement in HR functions. The study showed that AI adoption supports data-driven decisions and improves organizational outcomes. It also identified issues related to trust,

transparency, and reduced human interaction. Moreover, employee perceptions were found to influence successful implementation. The authors concluded that balancing technology with human-centered practices is essential.

Kurup (2025) observed that AI and automation improve organizational efficiency by simplifying HR activities and reducing manual work. The study found a positive relationship between AI adoption and HR effectiveness. It also highlighted moderate improvements in employee satisfaction despite concerns over fairness and trust. In addition, transparency issues affected employee perception of AI decisions. The research suggested combining technology and human judgment for effective HR management.

Lahoti (2023) revealed that AI positively impacts recruitment, training, and performance evaluation in organizations. The study showed improvements in productivity, administrative efficiency, and data management. It also noted favorable employee perceptions toward fairness and usability of AI tools. However, ethical concerns such as privacy and algorithmic bias were identified. The author concluded that AI contributes significantly to modern HR practices.

Panwar (2023) emphasized that AI enhances HRM practices through automation, better decision-making, and operational efficiency. The study found increasing awareness of AI benefits among organizations, though adoption readiness differs. It also recognized barriers such as privacy concerns, ethical issues, and reduced personal interaction. Further, AI was viewed as a driver of innovation in HR processes. The study concluded that successful implementation requires balancing technology with human values.

Eray and Ismail (2023) highlighted that AI improves recruitment, employee training, and organizational performance through data-driven support. The study showed that AI reduces workload, minimizes bias, and lowers operational costs. It also found that AI enhances employee experience and career development opportunities. Additionally, the research stressed AI's role in creating competitive advantage. The authors concluded that AI adoption will continue expanding in HR functions.

Isthiyaq et al. (2023) indicated that AI transforms HR practices by automating repetitive work and improving efficiency. The study found a significant positive relationship between AI technologies and HRM effectiveness. It also identified challenges such as skill gaps, privacy concerns, and implementation costs. Further, successful adoption was linked with proper integration strategies. The authors concluded that AI strongly supports organizational efficiency when effectively implemented.

Ganatra and Pandya (2023) discussed that AI has a transformative effect on HR practices and employee experience. The study showed improvements in recruitment, training, engagement, and job satisfaction. It also highlighted that personalized HR practices support employee well-being and work-life balance. However, ethical concerns and transparency issues were recognized as challenges. The authors concluded that effective AI use requires organizational and ethical considerations.

Saklani and Khurana (2023) found that AI automates routine HR activities and improves productivity. The study showed benefits in decision-making, employee learning, and reduction of

discrimination. It also identified challenges involving skill shortages and adaptation difficulties. Furthermore, concerns over reduced performance management, and workplace efficiency G.Karthiga, R.Karthi & P.Balaishwarya (2015) discussed that most of the respondents were satisfied, but changes are required according to the changing scenario, as the recruitment process has a great impact on the working of the company, as fresh blood, new ideas enter.

VI.RESEARCH METHODOLOGY

A. Research Design

The study follows a descriptive research design as it seeks to describe the current level of AI adoption in HR and examine its impact on organisational efficiency. It focuses on collecting structured information from respondents and analyzing patterns, relationships, and outcomes related to AI implementation in HR practices.

B. Limitations:

- The study is limited to selected IT companies only.
- The study was conducted within a limited time period
- The responses are based on employees' personal opinions.

VII.DATA ANALYSIS AND INTERPRETATION

In this study, data were collected from employees working in the IT sector to analyze the adoption of Artificial Intelligence in HR and its impact on organisational efficiency. The analysis shows that many organizations are increasingly using AI technologies in HR activities such as recruitment, training, performance appraisal, and workforce planning. Employees believe that AI helps in reducing manual work, improving productivity, and increasing the efficiency of HR operations. Statistical tools such as Chi-Square Test Correlation Analysis, and One-Way ANOVA were used to examine the relationship between demographic variables and AI adoption factors.

CHI SQUARE TEST

NULL HYPOTHESIS (H₀): There is no significant association between gender and opinion on AI reducing manual workload.

NULL HYPOTHESIS (H₁): There is a significant association between gender and opinion on AI reducing manual workload

Gender of the respondent * AI tools reduce manual workload in HR operations.

Crosstabulation

			AI tools reduce manual workload in HR operations.				Total
			Disagree	Neutral	Agree	Strongly Agree	
Gender	Male	Count	1	18	25	24	68
		Expected Count	1.4	17.2	28.1	21.3	68.0
		% within Gender	1.5%	26.5%	36.8%	35.3%	100.0%
	Female	Count	2	20	37	23	82
		Expected Count	1.6	20.8	33.9	25.7	82.0
		% within Gender	2.4%	24.4%	45.1%	28.0%	100.0%
Total		Count	3	38	62	47	150
		Expected Count	3.0	38.0	62.0	47.0	150.0
		% within Gender	2.0%	25.3%	41.3%	31.3%	100.0%

CHISQUARE

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.489 ^a	3	0.685
Likelihood Ratio	1.495	3	0.683
Linear-by-Linear Association	0.288	1	0.591
N of Valid Cases	150		

INTERPRETATION: The above crosstabulation and Chi-Square test were conducted to examine the association between gender of the respondents and the opinion that AI tools reduce manual workload in HR operations. The Pearson Chi-Square value is 1.489 with a significance value (p-value) of 0.685, which is greater than the standard significance level of 0.05. Hence, there is no significant relationship between gender and the perception of AI tools reducing manual workload in HR operations. Both male and female respondents showed similar opinions, with the majority agreeing or strongly agreeing with the statement. This indicates that respondents, irrespective of gender, generally believe that AI tools help in reducing manual work in HR functions. Therefore, the null hypothesis is accepted and the alternative hypothesis is rejected.

CORRELATION:

NULL HYPOTHESIS(H0): There is no significant relationship between positive attitude towards AI and feel comfortable using AI.

ALTERNATE HYPOTHESIS(H1): There is a significant relationship between positive attitude towards AI and feel comfortable using AI.

CORRELATION

		Employees have a positive attitude toward AI in HR.	I feel comfortable using AI-based HR systems.
Employees have a positive attitude toward AI in HR.	Pearson Correlation	1	0.507**
	Sig. (2-tailed)		.000
	N	150	150
I feel comfortable using AI-based HR systems.	Pearson Correlation	0.507**	1
	Sig. (2-tailed)	0.000	
	N	150	150

INTERPRETATON: The correlation analysis was conducted to examine the relationship between employees' positive attitude toward AI in HR and their comfort in using AI-based HR systems. The Pearson correlation value is 0.507, which indicates a moderate positive relationship between the two variables. The significance value (p-value) is 0.000, which is less than 0.05, showing that the relationship is statistically significant. This means that employees who have a more positive attitude toward AI in HR are also more likely to feel comfortable using AI-based HR systems. The findings suggest that acceptance and favorable perception of AI can improve employee confidence and ease in using AI technologies in HR operations. Therefore, the relationship between the variables is positive and significant.

FINDINGS

The study findings reveal that there is no significant association between gender and the perception that AI tools reduce manual workload in HR operations, as both male and female respondents expressed similar levels of agreement toward the usefulness of AI in reducing HR workload. This indicates that employees, irrespective of gender, generally accept the role of AI in improving HR efficiency. The correlation analysis further shows a significant positive relationship between employees' positive attitude toward AI in HR and their comfort in using AI-based HR systems. Employees who view AI positively are more confident and comfortable while using AI technologies in HR functions. Overall, the findings suggest that employees have a favorable perception of AI adoption in HR operations and are willing to adapt to AI-based systems in the workplace.

SUGGESTIONS

- AI Training and Awareness – Organizations should provide regular training programs to help employees understand and effectively use AI tools in HR operations.
- Employee Engagement – Companies should encourage employee participation and feedback while implementing AI systems to improve acceptance and trust.
- Efficient AI Integration – HR departments should integrate AI gradually into daily operations to ensure smooth adaptation and better performance.
- Productivity Improvement – Organizations should utilize AI for repetitive and time-consuming HR tasks to improve overall organizational productivity.
- Equal Access to Technology – Companies should ensure that both male and female employees receive equal opportunities to work with AI-based HR systems.
- Continuous Monitoring – HR management should regularly evaluate the effectiveness of AI tools to identify areas for improvement and better efficiency.
- Strategic Decision-Making – Organizations should combine AI insights with human judgment to make accurate and balanced HR decisions.

CONCLUSION

The study findings reveal that there is no significant association between gender and the perception that AI tools reduce manual workload in HR operations, as both male and female respondents expressed similar levels of agreement toward the usefulness of AI in reducing HR workload. This indicates that employees, irrespective of gender, generally accept the role of AI in improving HR efficiency. The correlation analysis further shows a significant positive relationship between employees' positive attitude toward AI in HR and their comfort in using AI-based HR systems. Employees who view AI positively are more confident and comfortable while using AI technologies in HR functions. Overall, the findings suggest that employees have a favorable perception of AI adoption in HR operations and are willing to adapt to AI-based systems in the workplace.

REFERENCES

- [1] Chandrasekar, S., & Natarajan, R. (2021). Statistical interpretations on stress management in KISCOL industry of Nagapattinam district. *Journal of Computational and Theoretical Nanoscience*, 18(3), 620–626.
- [2] Tabor-Błażewicz (2023), *Artificial Intelligence in Human Resource Management: Opportunities and Challenges*, www.researchgate.net
- [3] Sharma and Gupta (2025), *AI Adoption in HR: Impact on Recruitment, Performance Management and Employee Engagement*, www.scholar.google.com

- [4] Dr. Priyanka Kurup (2025), *AI and Automation in HR Practices: A Quantitative Study on Organisational Efficiency and Employee Perception*, www.doi.org/10.34218/IJMHRM_16_03_006
- [5] Dr. Shreya Panwar (2023), *Perception of Artificial Intelligence Towards the Development of Human Resource Management Practices*, www.doi.org/10.55041/IJSREM26995
- [6] Aydın Eray and Ismail (2023), *The Effect of Artificial Intelligence Usage on Human Resources Management*, www.doi.org/10.1007/978-3-030-66218-9_8
- [7] Mohamed Isthiyaq et al. (2023), *The Impact of AI Adoption on HRM*, www.doi.org
- [8] G.Karthiga, R.Karthi & P.Balaishwarya (2015). Recruitment and Selection Process, International Journal of Scientific and Research Publication, 5(4).