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A Study on the Role of AI and Robotics in HRM Practices in the IT Sector in India

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ABSTRACT

The Indian IT sector has experienced rapid growth, bringing with it a strong push toward integrating Artificial Intelligence (AI) and robotics into various organizational functions. Among these, Human Resource Management (HRM) has become a key area of transformation. This study explores how AI is reshaping HRM practices, particularly in recruitment, performance evaluation, and employee engagement. Through a mixed-methods approach involving surveys and interviews with HR professionals and employees in mid-to-large IT firms, the research uncovers the real-world benefits, such as improved efficiency and smarter decision-making, as well as concerns like reduced human interaction, job security fears, and ethical issues. The findings show that while AI brings valuable support to HR tasks, its true success depends on how well it is aligned with human values—transparency, empathy, and trust. By highlighting employee experiences and organizational readiness, this study offers practical insights for HR leaders, policymakers, and researchers seeking to navigate the evolving landscape of AI in HRM.

Keywords: *Artificial Intelligence, Human Resource Management (HRM), Indian IT Sector, Robotics, Recruitment Automation, Performance Management*

INTRODUCTION

In India's fast-growing IT sector, AI and robotics are transforming how companies manage their people. These technologies are making HR tasks like recruitment faster and more accurate, reducing errors, and improving decision-making. AI isn't just automating work; it's helping HR teams find the right candidates, personalise employee experiences, and focus on strategic initiatives rather than routine chores. This shift is creating more efficient and human-cantered workplaces, but it also brings challenges like job insecurity and the need for new skills. As AI continues to evolve, understanding its real impact on employees and HR practices is crucial

OBJECTIVES OF THE STUDY

- To analyse the impact of AI and robotics on core HRM functions
- To identify the benefits and challenges of integrating AI and robotics in HRM practices
- To examine employee perceptions and acceptance of AI and robotics in the workplace
- To explore the ethical, social, and emotional implications of AI and robotics adoption in HRM
- To propose future research frameworks for effective AI and robotics integration in HRM

LITERATURE REVIEW

The integration of Artificial Intelligence (AI) and robotics in Human Resource Management (HRM) has gained significant attention in recent years. Kalukuri. (2024) conducted a systematic review analysing the impact of AI and robotics on various HR functions, revealing that AI enhances efficiency in recruitment and administration but raises concerns about job displacement and the urgent need for HR upskilling. Similarly, Shahid. (2025) highlighted. Through a bibliometric and systematic review that while AI-driven processes improve objectivity in performance evaluation and training, they may inadvertently reduce employee engagement, with readiness to adopt such technologies varying across cultures and generations. Vrontis(2023) systematically examined intelligent automation's impacts on HR strategies and activities, identifying that although AI and robotics facilitate job replacement and decisionmaking, technological and ethical challenges persist. Harthi (2024) reviewed AI's role in enhancing talent acquisition and

employee engagement, emphasising that integration strategies are vital for organisational effectiveness. Rahman. (2025) compiled existing literature on robot HRM, pointing out that despite robotics enhancing recruitment and performance evaluation, employees often resist due to fears of job loss and lack of trust in automation. Kaur (2025) explored the challenges of integrating robotics within HR frameworks, revealing that automation streamlines processes but simultaneously creates skill gaps and ethical concerns. Singh and Chouhan (2023) examined the role of emotional and social intelligence in adopting AI for HRM, suggesting that while AI aids in payroll and recruitment, human emotional intelligence remains crucial for effective implementation. Overall, existing literature underscores the operational benefits of AI and robotics in HRM but indicates critical gaps in understanding employee acceptance, emotional impacts, and structured upskilling frameworks necessary for successful integration.

RESEARCH GAP

Citations	Author/Year	Research Design	Objective	Findings
Kalukuri 2024	Kalukuri Princy Niveditha 2024	Systematic review	To analyse the impact of AI and robotics on HRM practices like recruitment, training, performance management, and retention.	AI improves efficiency in recruitment and administration; however, raises concerns of job displacement and the need for upskilling HR staff.
Shahid 2025	Sehrish Shahid 2025	Bibliometric Systematic review	To review humanrobot collaboration in HRM functions and its influence on change readiness.	AI enhances objectivity but can reduce employee engagement; readiness varies with culture and generational factors.
Vrontis 2023	Demetris Vrontis 2023	Systematic review	To understand impacts of intelligent automation (AI and robotics) on HR strategies and activities.	AI and robotics affect job replacement, collaboration, and HR decision-making; technological and ethical challenges remain.
AlHarthi 2024	Tharaya Said AlHarthi 2024	Literature review	To gain insights on AI's impact on talent acquisition, employee engagement, and organisational effectiveness.	AI transforms traditional HRM; enhances decisionmaking but demands integration strategy to manage changes effectively.
Rahman 2025	Imtiazur Rahman 2025	Frameworkbased systematic review	To compile existing literature on robot HRM and propose practical steps forward.	Robotics improves recruitment and evaluation but employees resist due to fear of job loss and lack of trust.

CONCEPTUAL MODEL

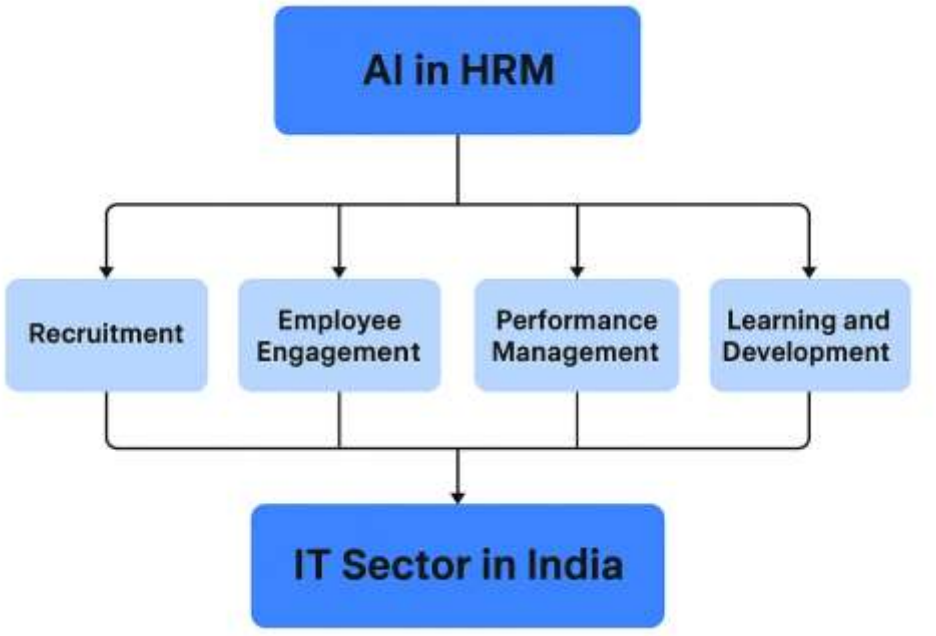

Figure no. 1 Showing Conceptual Model of AI in HRM

PROBLEM STATEMENT

The Indian IT sector continues to grow at a rapid pace, and organizations are under constant pressure to attract, retain, and manage talent efficiently. In many companies have started integrating Artificial Intelligence (AI) into their Human Resource Management (HRM) practices to streamline processes such as recruitment, performance evaluation, and employee engagement. While this shift promises increased efficiency and data driven decision making, it also raises critical concerns about the impact on human connections, employee trust, job security, and ethical use of personal data. Despite the growing interest, there is a noticeable lack of comprehensive research that explores how AI is actually transforming HR functions in Realtime, especially from the perspectives of both HR professionals and employees within India's diverse and fast evolving IT industry. This creates a gap in understanding the practical challenges, benefits, and long-term implications of AI in HRM, which this study aims to address.

RESEARCH METHODOLOGY

AI is shaping HRM practices in the Indian IT sector, This study adopts a mixed-methods approach, combining both quantitative and qualitative data to gain a well-rounded understanding of the topic. This method allows the research to not only measure the extent of AI adoption but also to capture the experiences and perspectives of those directly involved—HR professionals and employees.

- **Research Design:**

A descriptive and exploratory research design will be used. The descriptive part focuses on identifying current AI applications in HR, while the exploratory aspect helps uncover deeper insights about employee attitudes, organizational readiness, and ethical concerns surrounding AI use in HRM.

- **Data Collection Methods:**

- **Quantitative Data:**

A structured survey questionnaire will be administered to HR managers and employees working in IT companies across India. The questionnaire will include both closed ended and Likert scale questions to assess their experiences with AI in areas such as recruitment, performance appraisal, and employee engagement.

- **Qualitative Data:**

To complement the survey, semi structured interviews will be conducted with selected HR professionals and employees. These interviews aim to understand the human side of the transformation such as trust, resistance, and cultural alignment by giving space for personal narratives and reflections.

- **Sampling**:

Sampling Method:

A purposive sampling technique will be used to target midsized to large IT firms that have implemented Ai based HR tools.

- **Sample Size:**

Approximately 62 survey respondents

- **Data Analysis:**

Quantitative data will be analysed using descriptive statistics and regression analysis to test relationships between AI use and HR outcomes

Qualitative data will be examined using thematic analysis to identify common patterns, concerns, and opportunities that emerge from participants' experiences.

- **Ethical Considerations:**

Participants will be informed about the purpose of the research, and their responses will be kept confidential. Informed consent will be obtained before participation, and anonymity will be maintained throughout the study.

DATA ANALYSIS AND INTERPRETATION (SURVEY FINDINGS)

The primary data for this research was collected from 62 responses in various IT companies. The data was analyzed using simple statistical tools, and the results are presented below:

- **Demographic Profile of Respondents**

- **Age Group Distribution**

The majority of respondents are below 25 years, indicating a young workforce sample with limited professional experience. Few respondents belong to the 45-54 years and 55+ years, suggesting that perceptions are primarily from early-career professionals.

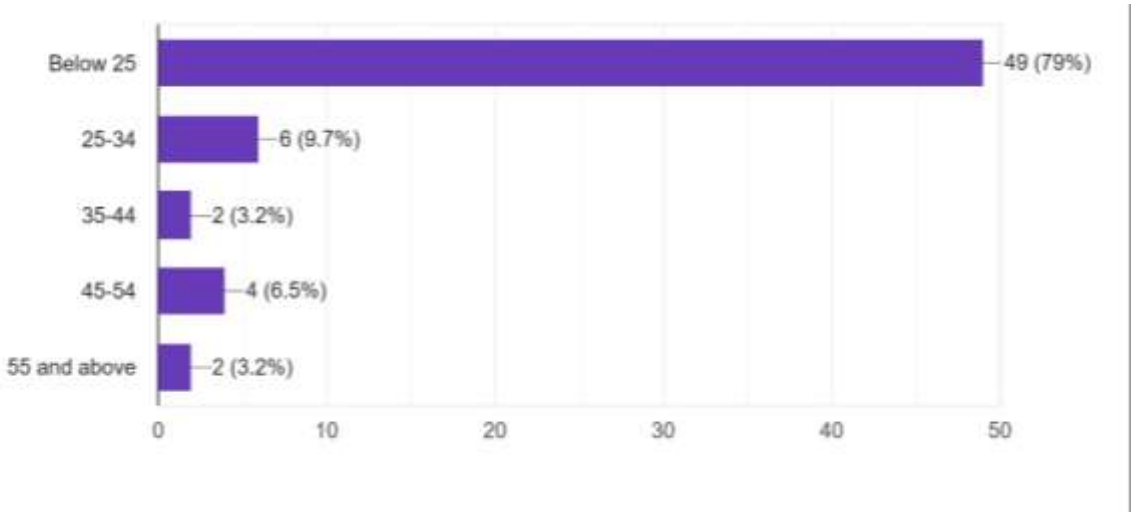

Figure no. 2 Showing Demographic Profile of Respodents

Interpretation:
The dominance of the below 25 age group implies that opinions may reflect openness to technology but also fear of job security, given limited workplace exposure.

- **AI/Robotics Usage in HR Functions**

AI is majorly used in Recruitment & Selection, Training & Development, Performance Management, and Payroll & Compensation. Very few organisations use robotics extensively.

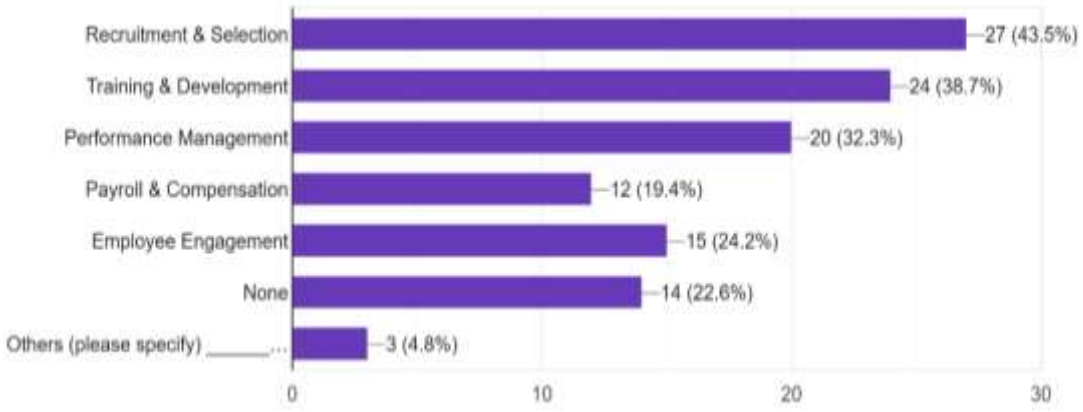

Figure no.3 showing AI/Robotics Usage in HR Functions

Interpretation:

This indicates AI is integrated into talent acquisition, training, and performance evaluation processes, while robotics adoption is still nascent in HRM practices within IT sectors.

- **Perceived Benefits of AI and Robotics Integration**

Respondents strongly agree that AI improves speed and accuracy of HR processes. Faster processes, cost reduction, data-driven decisions, and better employee experience emerged as primary benefits.

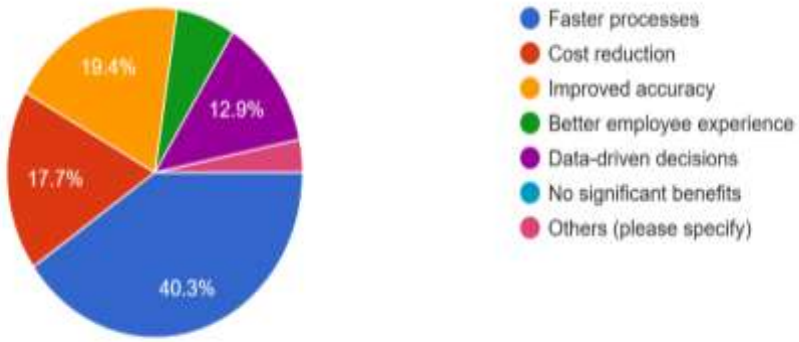

Figure no. 4 showing Perceived Benefits of AI and Robotics Integration

Interpretation:

AI is perceived to streamline workflows, reduce manual errors, and enhance decision-making quality, validating its operational advantage in HRM functions.

- **Challenges Faced by Organisations**

Lack of technical expertise is the most cited barrier. High implementation costs, data security concerns, ethical concerns, and employee resistance are significant challenges.

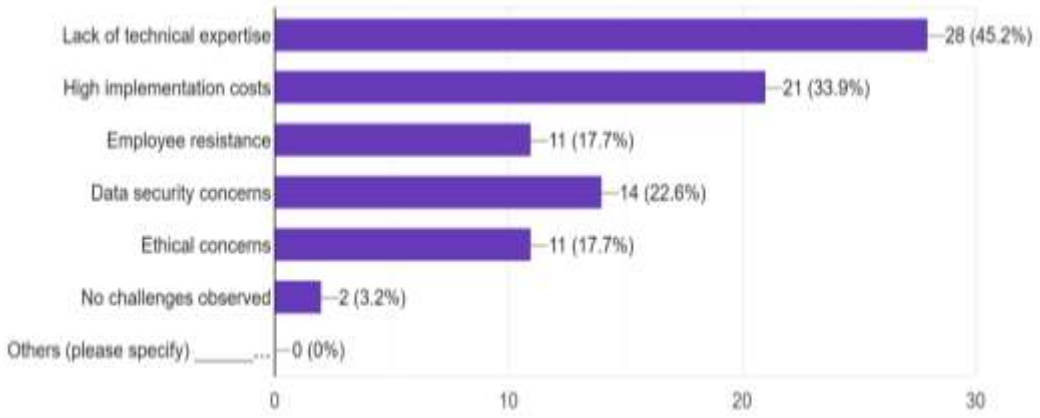

Figure no. 5 Challenges Faced by Organisations

Interpretation:

The technological integration is beneficial, skill gaps, financial constraints, and ethical dilemmas hinder seamless AI and robotics adoption in HRM practices.

- **Employee Perceptions and Psychological Impacts**

Many respondents agree that AI and robotics create job insecurity or fear of displacement.Some believe AI will create future job opportunities, indicating mixed perceptions. Comfort levels vary from comfortable, neutral, to uncomfortable, with training inadequacy frequently highlighted.

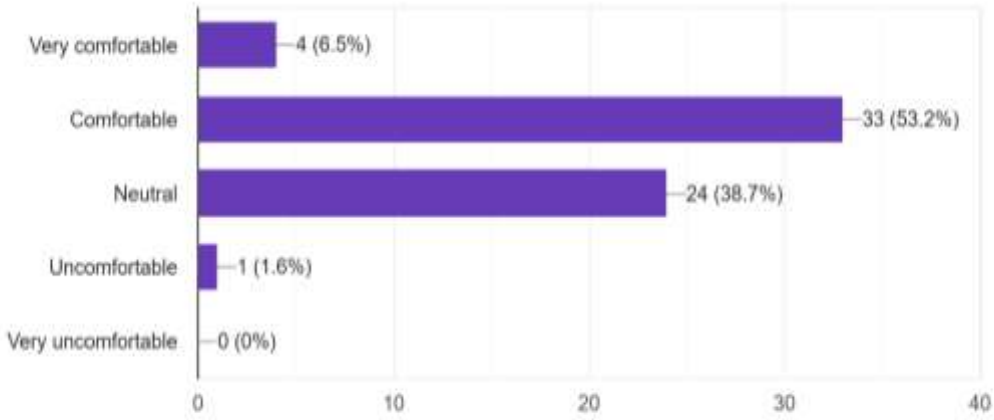

Figure no. 6 showing Employee Perceptions and Psychological Impacts

Interpretation:

There exists an ambivalent attitude among employees towards AI, where operational benefits are recognised, but job security and emotional acceptance remain concerns.

- **Ethical, Social, and Emotional Concerns**

The majority agree that AI decisions lack empathy and reduce human interaction at work.Data privacy and ethical guidelines are deemed essential for AI and robotics integration.

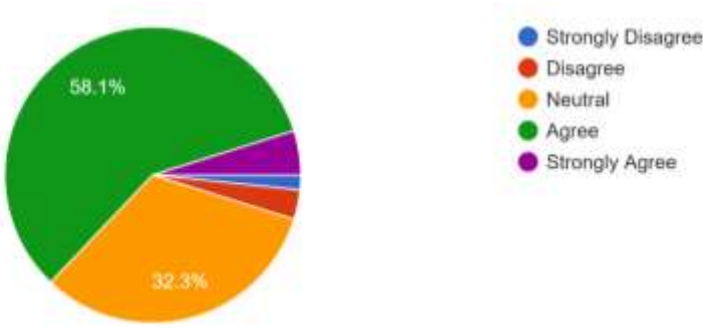

Figure no. 7 Ethical, Social, and Emotional Concerns

Interpretation:
Employees expect AI usage to be ethical, secure, and human-centric, highlighting the need for balanced AI-human collaboration strategies.

CONCLUSION

This study reveals that AI and robotics are steadily reshaping HRM practices within India's IT sector. Employees and HR professionals recognise the benefits of these technologies, such as improved speed, accuracy, and better decision-making in recruitment, training, and performance management. AI helps make processes faster and more data-driven, enhancing overall efficiency.

A significant number of employees fear job insecurity due to automation. There is also a lack of adequate training and technical expertise, which affects confidence in using AI effectively. Ethical issues and reduced human interaction were frequently mentioned, showing that while AI has operational advantages, its human impacts cannot be ignored.

LIMITATIONS OF THE STUDY

- Geographic Limitation: Most responses were from Bengaluru and nearby regions, limiting representation from other IT hubs in India.
- Sample Size Constraints: The survey covered around 62 respondents, which provides valuable insights but may not fully capture the experiences of the wider IT workforce.
- Self-reported Data Bias: Findings are based on individual perceptions, which personal opinions, awareness, or experiences with AI may influence.
- Rapid Technological Changes: As AI and robotics continue to evolve quickly, some insights may become outdated over time, requiring continuous research.

PRACTICAL IMPLICATIONS

The findings of this study are that while AI and robotics are improving HR processes by making them faster and more data-driven, organisations need to prioritise their human impact to ensure success. HR leaders should focus on creating a balanced approach where technology supports rather than replaces human judgment, ensuring employees feel valued and secure. Providing regular training and clear communication about how AI tools work can build employee trust and reduce fears of job loss. Organisations should also develop policies that address ethical concerns and data privacy to create a safe and transparent environment for AI integration. For policymakers, it is crucial to establish robust legal and ethical guidelines that protect employees while allowing innovation to thrive. Overall, the use of AI in HR should aim not just for efficiency but also for enhancing employee experiences and workplace well-being.

FUTURE RECOMMENDATIONS

- Conduct studies in diverse sectors to broaden understanding.
- Track AI impacts over time to see evolving effects.
- Explore how AI affects empathy and human connection in workplaces.
- Develop training frameworks to build AI confidence among employees.
- Investigate ways AI and humans can work together effectively in HRM.

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