



THE IMPACT OF ARTIFICIAL INTELLIGENCE ON HUMAN RESOURCE MANAGEMENT PRACTICES WITH SPECIAL REFERENCE TO NOVITECH R&D PVT LTD COIMBATORE DISTRICT

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Article Info

Article History:

Published: 3 July 2026

Publication Issue:

Volume 3, Issue 7
July-2026

Page Number:

21-31

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Abstract:

Artificial Intelligence (AI) has emerged as a transformative technology that is reshaping Human Resource Management (HRM) by improving the efficiency, accuracy and strategic value of HR functions. AI-powered applications such as intelligent recruitment systems, automated resume screening, predictive workforce analytics, performance management tools, personalized learning platforms and employee engagement solutions are enabling organizations to make data-driven decisions while enhancing operational effectiveness. As organizations increasingly embrace digital transformation, understanding the influence of AI on HR practices has become essential for sustaining organizational competitiveness. NoviTech R&D Pvt. Ltd., Coimbatore a technology-focused organization offering AI data analytics and emerging technology solutions, provides an appropriate setting to examine the practical implementation of AI in HR-related activities. Specifically the study investigates the extent to which AI influences recruitment and selection, employee training and development, performance appraisal, employee engagement, talent management and HR decision-making. A descriptive research design is proposed using primary data collected through a structured questionnaire administered to employees, while secondary data are gathered from books, journals, company information and published reports. Appropriate statistical tools such as percentage analysis, mean and standard deviation, t-test and ANOVA analysis may be employed to interpret the findings. The findings will contribute to the growing body of knowledge on AI-enabled HRM and provide practical recommendations for organizations seeking to integrate AI technologies responsibly while preserving the human-centric aspects of workforce management.

Keywords: Artificial Intelligence, Human Resource Management Practices

1. INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has transformed the way organizations operate, compete and manage their workforce. AI refers to the capability of computer systems to perform tasks that traditionally require human intelligence, including learning, reasoning, problem-solving, language processing and decision-making. In the era of Industry 4.0 organizations are increasingly adopting AI-driven technologies to improve operational efficiency, enhance productivity and support strategic decision-making. Human Resource Management (HRM), which plays a crucial role in acquiring, developing and retaining talent has emerged as one of the key functional areas experiencing significant transformation through AI applications.

Human Resource Management has evolved from performing routine administrative functions to becoming a strategic partner that contributes to organizational growth and competitive advantage. The integration of AI into HR practices has enabled organizations to automate repetitive processes, reduce manual errors, improve recruitment accuracy and enhance employee experiences. AI-powered tools such as intelligent recruitment platforms, resume screening software, predictive analytics, chatbots, virtual assistants, performance management systems and learning management platforms have revolutionized the traditional HR landscape. These technologies not only save time and operational costs but also enable HR professionals to focus on strategic initiatives such as employee engagement, leadership development, organizational culture and workforce planning.

Artificial Intelligence is increasingly influencing every stage of the employee life cycle. During recruitment and selection, AI algorithms assist organizations in identifying suitable candidates by analyzing resumes, assessing competencies and predicting job fit. In employee on boarding, AI-based virtual assistants provide personalized guidance, answer employee queries and streamline documentation processes. AI also supports performance appraisal by providing real-time feedback, analyzing employee productivity and identifying areas for improvement. Furthermore AI-driven learning and development systems recommend personalized training programs based on employees' skills, career aspirations and organizational requirements, thereby promoting continuous professional development.

2. IMPORTANCE OF ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCE MANAGEMENT PRACTICES

Improves the Recruitment Process

Artificial Intelligence streamlines recruitment by automating job postings, screening resumes, matching candidate profiles with job requirements and scheduling interviews. This reduces recruitment time, enhances hiring accuracy and helps organizations identify qualified candidates more efficiently.

Enhances Quality of Decision-Making

AI enables HR professionals to make informed decisions by analyzing large volumes of workforce data. Through predictive analytics and data-driven insights, organizations can improve workforce planning, talent management and strategic human resource decisions.

Automates Routine HR Functions

AI reduces the administrative burden by automating repetitive tasks such as attendance tracking, payroll processing, leave management, employee record maintenance and document verification. This increases operational efficiency and allows HR professionals to focus on strategic responsibilities.

Strengthens Employee Performance Management

AI-based performance management systems provide continuous monitoring, real-time feedback and objective performance evaluations. These systems help employees improve their performance while enabling managers to recognize achievements and identify development needs effectively.

Facilitates Personalized Learning and Development

Artificial Intelligence supports employee development by identifying skill gaps and recommending customized training programmes based on individual learning needs and career goals. Personalized learning improves employee competence and organizational productivity.

Enhances Employee Engagement and Experience

AI-powered chatbots, virtual assistants and employee feedback platforms improve communication, provide instant support and address employee concerns promptly. These technologies contribute to higher employee satisfaction, stronger engagement and a positive workplace culture.

Supports Workforce Planning and Talent Retention

AI helps organizations forecast future workforce requirements, identify potential leadership candidates and predict employee turnover using predictive analytics. This enables proactive talent management and improves employee retention strategies.

Promotes Fairness and Reduces Human Bias

When developed and monitored responsibly AI can standardize HR processes such as recruitment, promotions and performance evaluations by focusing on objective criteria. This helps reduce personal bias and promotes transparency and consistency in decision-making.

Improves Organizational Productivity and Efficiency

By optimizing HR processes and reducing the time spent on manual tasks, AI increases overall organizational productivity. HR professionals can devote more attention to employee development, organizational planning, innovation and strategic initiatives.

Supports Digital Transformation and Organizational Competitiveness

Artificial Intelligence enables organizations to adapt to rapidly changing business environments by modernizing HR practices. The adoption of AI enhances organizational agility, strengthens talent management, improves service delivery and provides a competitive advantage in the digital economy.

STATEMENT OF THE PROBLEM

The rapid adoption of Artificial Intelligence (AI) has significantly transformed Human Resource Management (HRM) practices by introducing intelligent solutions for recruitment, employee engagement, performance management,

training and workforce planning. While AI offers numerous benefits, its implementation also presents challenges related to employee acceptance, data privacy, ethical concerns, algorithmic bias, skill requirements and the changing role of HR professionals. Technology-driven organizations are increasingly integrating AI into their HR functions to improve efficiency and support strategic decision-making; however the extent to which these technologies influence organizational performance and employee experiences varies across organizations. Novitech R&D Pvt. Ltd., Coimbatore District, operates in a highly competitive research and development environment where effective human resource management is essential for innovation and sustainable growth. Despite the growing use of AI in HR processes there is limited empirical evidence regarding its impact on HR practices within the organization. Therefore it is necessary to examine how AI influences key HR functions, identify the benefits and challenges associated with its implementation and assess its effectiveness in improving organizational and employee outcomes. The findings of this study are expected to provide valuable insights that will assist the organization in optimizing AI-enabled HR practices while ensuring a balanced approach between technological advancement and human-centered management.

3. REVIEW OF LITERATURE

Malik, Budhwar and Srikanth (2024) examined the growing role of Artificial Intelligence in transforming Human Resource Management from an administrative function into a strategic business partner. Their review highlighted that AI technologies such as machine learning, predictive analytics, intelligent chatbots and natural language processing have improved recruitment, employee selection, workforce planning and talent management. The authors emphasized that AI enables organizations to make faster, data-driven decisions while reducing routine administrative tasks. However they also noted that successful AI implementation depends on employee trust, digital competency, ethical governance and transparent organizational policies. The study concluded that AI should complement rather than replace human judgment, allowing HR professionals to focus on leadership development, employee well-being and strategic organizational growth.

Vrontis et al. (2023) investigated the influence of Artificial Intelligence on modern Human Resource Management through a comprehensive review of digital transformation practices in organizations. The study found that AI has significantly enhanced HR functions by improving recruitment accuracy, automating performance evaluation, supporting personalized employee learning and strengthening workforce analytics. The authors observed that AI-based systems provide valuable insights into employee behaviour, enabling organizations to predict turnover, identify skill gaps and design effective retention strategies. At the same time they emphasized the importance of addressing ethical issues, algorithmic bias, employee privacy and legal compliance to ensure responsible AI adoption. The review concluded that integrating AI with human expertise creates a more agile, efficient and employee-centered HR system.

Chowdhury et al. (2022) reviewed the application of Artificial Intelligence in Human Resource Management and its implications for organizational performance. The authors reported that AI has become an essential tool for automating recruitment, talent acquisition, employee engagement, training, performance management and succession planning.

According to the review AI-driven analytics improve the accuracy of HR decisions by identifying workforce trends and predicting future talent requirements. The study also highlighted that organizations adopting AI experience greater operational efficiency, improved employee productivity and enhanced decision-making capabilities. Nevertheless the authors cautioned that organizations should invest in employee training, digital literacy, ethical AI frameworks and cyber security measures to maximize the benefits of AI while minimizing potential risks. They concluded that AI will continue to reshape HR practices and become an integral component of strategic human resource management.

4. Methodology of the Study

Objectives of the Study

1. To find out demographic profile of the respondents.
2. To assess the overall level of Artificial Intelligence in Human Resource Management Practices.
3. To analysis the differences between the demographic profile and AI on Human Resource Management Practices.
4. To offer recommendations for enhancing AI on Human Resource Management Practices.

Design of Research

The study follows a descriptive research design. This design is appropriate because it facilitates the systematic description and analysis of employees' opinions, experiences and perceptions regarding the implementation of Artificial Intelligence in Human Resource Management practices. It also helps identify the relationship between AI adoption and the effectiveness of HR functions.

Universe of the Study

The universe of the study comprises employees working at Novitech R&D Pvt. Ltd., Coimbatore District, irrespective of their department, designation or years of experience. These employees represent the population from which the respondents are selected for the research.

Sample Size

A total of **60 employees** are selected as respondents for the study. The sample size is considered adequate to obtain reliable information regarding employees' perceptions of AI-based Human Resource Management practices within the organization.

Method of Sampling

The study employs the **simple random sampling method** which provides every employee in the organization with an equal opportunity to participate in the survey. This sampling technique minimizes selection bias and enhances the representativeness of the sample.

Data Gathering Instruments

The primary data are collected using a structured questionnaire consisting of closed-ended questions based on a five-point Likert scale, ranging from "Strongly Agree" to "Strongly Disagree." The questionnaire covers various dimensions of AI in Human Resource Management, including recruitment and selection, employee training, performance appraisal, workforce planning, employee engagement and overall organizational effectiveness. Secondary information is collected from scholarly journals, books, conference proceedings, company publications and authentic online databases.

Research Gap

Although several studies have examined the application of Artificial Intelligence in Human Resource Management across different industries, limited research has focused on AI-enabled HR practices within small and medium-sized research and development organizations in Coimbatore District. Furthermore there is insufficient empirical evidence regarding employees' perceptions of AI implementation, its influence on HR effectiveness and the challenges encountered during its adoption in organizations such as Novitech R&D Pvt. Ltd. This study seeks to bridge this gap by providing organization-specific insights into the impact of AI on Human Resource Management practices.

Tools for Statistical Analysis

The collected data are coded classified and analyzed using appropriate statistical techniques with the support of Statistical Package for the Social Sciences (SPSS). The statistical tools used in the study include percentage analysis to describe respondents' demographic characteristics, Mean and standard deviation to measure respondents' perceptions, Chi-Square test to determine the association between demographic variables and AI-related HR practices, Independent Sample t-test and One-Way Analysis of Variance (ANOVA) to compare group differences Analysis to examine relationships among study variables to determine the influence of Artificial Intelligence on various Human Resource Management practices.

5. Finds of the Study

S.NO	PERSONAL VARIABLES	FREQUENCY	RESPONDENTS	PERCENTAGE %
1	Age	35yrs - 45yrs	47	78%

2	Gender	Female	42	70%
3	Educational Qualification	PG	51	85%
4	Experience	10yrs to 15yrs	52	86%
5	Type of family	Nuclear Family	48	80%
6	Designation	Project Assistant	45	75%
7	Monthly Income	Rs .20,000 to 30000	40	66%
8	Department	Data Analytics	41	68%
9	Place of Residence	Semi-urban	42	70%

- Majority (78%) of the respondents are 35- 45 years age group.
- Majority (70%) of the respondents are female.
- More than half of the respondents (85%) have completed PG degree.
- Majority (86%) of the respondent's are 10yrs to 15yrs experience.
- Majority (80%) of the respondents are nuclear family.
- Majority (75%) of the respondents designations are project assistant.
- More than half of the respondents (66%) are **monthly incomes are Rs.20000 to Rs.30000.**
- Majority (68%) of the respondents working are data analytics department.
- Majority (70%) of the respondents have **place of residence** are semi-urban.

DISTRIBUTION OF THE RESPONDENTS ACCORDING TO THEIR LEVEL OF AI ON HUMAN RESOURCE MANAGEMENT PRACTICES

AI ON HUMAN RESOURCE MANAGEMENT PRACTICES	NO. OF RESPONDENTS	PERCENTAGE (%)
High	15	25
Moderate	34	57
Low	11	18
Total	60	100

Interpretation

According to the above table 57% of respondents have a moderate AI on human resource management practices, 25% have a high level and 18% have a low level.

Difference between of personal profile and level of AI on Human Resource Management Practices

Variables	Statistical tool	Value	Result
Age and AI on Human Resource Management Practices	ANOVA	F= 11.365 P<0.05	Significant
Gender and AI on Human Resource Management Practices	t-test	t = .325 P>0.05	Not- Significant
Education qualification and AI on Human Resource Management Practices	ANOVA	F= .435 P>0.05	Not-Significant
Experience and AI on Human Resource Management Practices	ANOVA	F = 5.644 P<0.05	Significant
Type of family and AI on Human Resource Management Practices	t-test	t= 6.840 P<0.05	Significant
Designation and AI on Human Resource Management Practices	ANOVA	F= .078 P>0.05	Not- Significant
Monthly Income and AI on Human Resource Management Practices	ANOVA	F = 6.868 P< 0.05	Significant
Department and AI on Human Resource Management Practices	ANOVA	F = .248 P> 0.05	Not Significant
Place of residency and AI on Human Resource Management Practices	ANOVA	F = 12.113 P< 0.05	Significant

- There is significant difference in the age and AI on Human Resource Management Practices of the respondents.
- There is no significant difference in the gender and AI on Human Resource Management Practices of the respondents.
- There is no significant difference in the education qualification and AI on Human Resource Management Practices of the respondents.
- There is significant difference in the **experience** and AI on Human Resource Management Practices of the respondents.

- There is significant difference in the type of family and AI on Human Resource Management Practices of the respondents.
- There is no significant difference in the **designation** and AI on Human Resource Management Practices of the respondents.
- There is significant difference in the monthly income and AI on Human Resource Management Practices of the respondents.
- There is no significant difference in the **department** and AI on Human Resource Management Practices of the respondents.
- There is significant difference in the place of residency and AI on Human Resource Management Practices of the respondents.

Recommendation

- Human Resource Management functions such as recruitment, onboarding, performance appraisal, learning and development and employee engagement.
- The organization should conduct regular training programmes and workshops to enhance the AI knowledge and digital competencies of HR professionals.
- Although AI can automate routine processes and improve decision-making, final HR decisions related to recruitment, promotions, disciplinary actions and employee welfare should include human judgment.
- The company should formulate comprehensive policies governing the ethical use of AI in Human Resource Management.
- Awareness programmes should be organized to educate employees about the benefits, limitations and objectives of AI implementation.
- Regular security audits and compliance with applicable data privacy regulations will help safeguard confidential employee information.
- The HR department should leverage AI-driven predictive analytics to forecast workforce requirements, identify future skill needs, detect potential employee turnover and support succession planning.
- AI-based learning platforms should be used to recommend customized training programmes based on employees' skills, job roles and career aspirations.
- The organization should periodically assess the performance and impact of AI applications used in Human Resource Management.
- Organization should encourage a workplace culture that embraces technological innovation, continuous learning and collaboration between employees and AI systems.

6. CONCLUSION

Artificial Intelligence has emerged as a transformative force in Human Resource Management by improving the efficiency, accuracy and strategic value of HR practices. The findings of this study indicate that AI has the potential to enhance key HR functions, including recruitment and selection, employee onboarding, training and development, performance management, workforce planning and employee engagement at Novitech R&D Pvt. Ltd., Coimbatore District. The adoption of AI-driven technologies enables the organization to automate routine administrative tasks, make data-driven decisions, optimize resource utilization and improve the overall employee experience. At the same time the study highlights the importance of addressing challenges such as data privacy, ethical concerns, algorithmic bias and employee acceptance through appropriate policies, continuous training and responsible AI governance. The research concludes that AI should be viewed as a strategic tool that complements human expertise rather than replacing it. By integrating Artificial Intelligence with effective human judgment and organizational values, Novitech R&D Pvt. Ltd. can strengthen its Human Resource Management practices, enhance workforce productivity, foster innovation and achieve sustainable organizational growth in an increasingly competitive digital environment.

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