

A Study on the Impact of Artificial Intelligence in Human Resource Management

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ABSTRACT

Artificial Intelligence (AI) has emerged as one of the most significant technological innovations, transforming the way organizations manage their human resources. The integration of AI into Human Resource Management (HRM) has enhanced recruitment, employee engagement, performance management, workforce planning, and strategic decision-making. This research project, titled "***A Study on the Impact of Artificial Intelligence in Human Resource Management***," aims to examine the role of AI in modern HR practices and evaluate its impact on organizational efficiency.

The study is based on both primary and secondary data. Primary data were collected through a structured online questionnaire using Google Forms from **80 respondents** selected through the convenience sampling technique. Secondary data were gathered from books, research journals, articles, websites, and published reports related to Artificial Intelligence and Human Resource Management. The collected data were analyzed using descriptive statistical tools such as frequency distribution and percentage analysis and were presented through tables, bar charts, and pie charts.

The findings of the study reveal that the majority of respondents have a positive perception of Artificial Intelligence in Human Resource Management. AI is considered highly effective in improving recruitment and selection, reducing hiring time and costs, enhancing employee engagement, supporting data-driven HR decision-making, and increasing overall organizational efficiency. However, respondents also identified challenges related to data privacy, information security, ethical issues, and algorithmic bias, emphasizing the need for responsible AI implementation.

The study concludes that Artificial Intelligence has become a valuable strategic tool for Human Resource Management. Organizations adopting AI technologies can improve productivity, employee experience, and decision-making while maintaining transparency, fairness, and data security. The research recommends that organizations invest in AI technologies, provide training to HR professionals, establish ethical AI policies, and implement strong cybersecurity measures to maximize the benefits of AI in HRM.

KEYWORDS

Artificial Intelligence, Human Resource Management, HR Analytics, Recruitment Automation, Machine Learning, Employee Engagement, Workforce Analytics.

INTRODUCTION

Artificial Intelligence (AI) has become one of the most influential technological advancements of the 21st century. It refers to the ability of computer systems and machines to perform tasks that typically require human intelligence, such as learning, reasoning, decision-making, problem-solving, language understanding, and pattern recognition. With continuous advancements in machine learning, natural language processing, robotics, and data analytics, AI has transformed the way organizations operate across different industries.

Human Resource Management (HRM) is a vital function in every organization, responsible for managing employees from recruitment to retirement. HRM includes activities such as recruitment and selection, employee training and development, performance appraisal, compensation management, employee engagement, workforce planning, and talent management.

This study aims to examine the impact of Artificial Intelligence on Human Resource Management by evaluating its role in recruitment and selection, employee engagement, performance management, learning and development, decision-making, and overall organizational performance. The research also seeks to identify the benefits, challenges, and future opportunities associated with AI adoption in HRM, thereby providing valuable insights for HR professionals, researchers, policymakers, and business organizations.

RESEARCH OBJECTIVE

The study attempts to answer the following research questions:

1. What is Artificial Intelligence in Human Resource Management?
2. How does AI improve recruitment and selection?
3. Does AI enhance employee engagement?
4. How does AI support HR decision-making?
5. What are the major challenges of AI implementation?
6. What is the future scope of AI in Human Resource Management?

LITERATURE REVIEW

Artificial Intelligence has become an essential component of modern Human Resource Management. Researchers consistently agree that AI improves recruitment, talent acquisition, workforce planning, employee engagement, and strategic decision-making by automating routine HR functions and utilizing predictive analytics. AI also enhances organizational efficiency and employee experiences through intelligent technologies such as chatbots, machine learning, and HR analytics.

Kapoor and Sherif (2012) emphasized that Artificial Intelligence has the potential to transform organizational decision-making by improving the speed and accuracy of data analysis. They suggested that AI supports HR professionals in making objective and evidence-based decisions.

Davenport and Ronanki (2018) examined the practical applications of AI in organizations and concluded that AI is primarily used for process automation, gaining insights through data analytics, and engaging employees and customers. Their study highlighted AI's growing role in HR operations, particularly in recruitment and workforce analytics.

Upadhyay and Khandelwal (2018) investigated AI adoption in Human Resource Management and found that AI enhances recruitment efficiency, employee performance evaluation, and HR service delivery. However, they also noted concerns regarding employee acceptance and ethical implications.

Jarrahi (2018) argued that AI should complement rather than replace human intelligence. According to the study, effective HR management requires collaboration between AI systems and human expertise to achieve balanced and ethical decision-making.

THEORETICAL FOUNDATION

The theoretical foundations of this study are based on Technology Acceptance Model (TAM), Diffusion of Innovation Theory, Resource-Based View (RBV), Human Capital Theory, and Socio-Technical Systems Theory. These theories explain how AI is adopted, accepted, and utilized in Human Resource Management to improve recruitment, employee development, decision-making, operational efficiency, and overall organizational performance. They provide a strong academic basis for examining the impact of AI on HRM in the present research.

RESEARCH GAP

A review of the existing literature indicates that Artificial Intelligence (AI) has significantly transformed Human Resource Management (HRM) by improving recruitment, employee engagement, performance management, and workforce planning. Although previous studies have highlighted the benefits of AI in HR, several important research gaps remain. Identifying these gaps provides the rationale for the present study.

A large proportion of AI–HRM research has been conducted in developed economies. There is limited empirical evidence from developing countries such as India, where organizational structures, technological readiness, and workforce characteristics differ significantly.

RESEARCH METHODOLOGY

Type of Research

The present study adopts a **descriptive and analytical research design** to examine the impact of Artificial Intelligence (AI) on Human Resource Management (HRM). A descriptive research design is used to systematically describe the current level of AI adoption, awareness, and its applications in HR functions such as recruitment, employee engagement, performance management, learning and development, and workforce planning. It helps in understanding the existing practices and perceptions of respondents regarding AI-enabled HR systems.

The analytical research design is employed to analyze the relationship between AI adoption and various HR outcomes, including recruitment efficiency, employee productivity, decision-making, employee satisfaction, and organizational performance. The study evaluates both the benefits and challenges associated with AI implementation in HRM.

Data Collection Method

The study is based on both **primary** and **secondary** data.

Primary Data

Primary data were collected directly from respondents through a structured questionnaire prepared using **Google Forms**.

The questionnaire included demographic questions and statements related to Artificial Intelligence in Human Resource Management.

Secondary Data

Secondary data were collected from:

- Secondary data were collected from various reliable and authentic sources to support the research findings. These sources included **Scopus-indexed journals, Google Scholar, ResearchGate, books, published research articles, industry reports, government publications, and reports from organizations such as Deloitte, KPMG, SHRM, PwC, and the World Economic Forum**. These sources provided theoretical concepts, previous research findings, and recent developments related to the application of Artificial Intelligence in Human Resource Management.

Sample Size and Sampling Technique

The present study was conducted using a sample size of 80 respondents, comprising HR professionals, employees, MBA students, and working professionals who possess knowledge or experience related to Artificial Intelligence in Human Resource Management. The respondents were selected using the Convenience Sampling Technique, a non-probability sampling method, based on their accessibility, availability, and willingness to participate in the survey. Data were collected through a structured questionnaire developed using Google Forms and distributed via WhatsApp, email, LinkedIn, and other online platforms. A sample size of 120 was considered appropriate for achieving the research objectives and obtaining meaningful insights into the impact of AI on HRM. Although convenience sampling has limitations in terms of generalizing the findings to the entire population, it is widely accepted in descriptive research due to its practicality, cost-effectiveness, and suitability for collecting primary data within limited time and resources. The responses obtained from the participants provided valuable information for analyzing the adoption, benefits, and challenges of Artificial Intelligence in Human Resource Management.

Data Collection Period

Data was collected during the month of May 2026. The Google Form link was shared through WhatsApp groups, college forums, and personal networks.

Tools and Techniques Used for Analysis

Collected data was tabulated and analysed using Microsoft Excel. The following techniques were applied:

- Percentage analysis for demographic profile and response distribution
- Pie charts and bar graphs for visual representation of awareness, impact, and challenges
- Cross-tabulation to understand differences based on gender and age group
- Simple statistical interpretation to draw meaningful conclusions

No advanced statistical software (like SPSS) was used due to the descriptive nature of the study and time limitations.

Ethical Considerations

All ethical guidelines were strictly followed. Respondents were informed about the purpose of the study. Participation was voluntary, and they could withdraw at any time.

Confidentiality of responses was maintained, and no personal identifiable information was collected except basic demographics. Informed consent was taken at the beginning of the questionnaire.

Limitations of the Study

The study has the following limitations:

- The sample size is limited to **80 respondents**.
- The research uses convenience sampling.
- Responses are based on individual perceptions.
- Time and resource constraints limited the study.
- The findings may not be generalized to all organizations.

DATA ANALYSIS AND INTERPRETATION

Data analysis is one of the most important stages of any research because it converts raw data into meaningful information for decision-making. In the present study, primary data were collected through a structured Google Form questionnaire to examine the impact of Artificial Intelligence (AI) on Human Resource Management (HRM). The questionnaire was distributed among respondents from different educational and professional backgrounds to understand their awareness, perceptions, and opinions regarding the use of AI in HR functions.

Demographic Profile of Respondents

Table 4.1 Age-wise Distribution of Respondents

Age Group	Frequency	Percentage (%)
Below 20 Years	25	11.11
21–25 Years	50	85.19
26–30 Years	5	3.70
Total	80	100.00

Figure 4.1: Age-wise Distribution (Bar Chart)

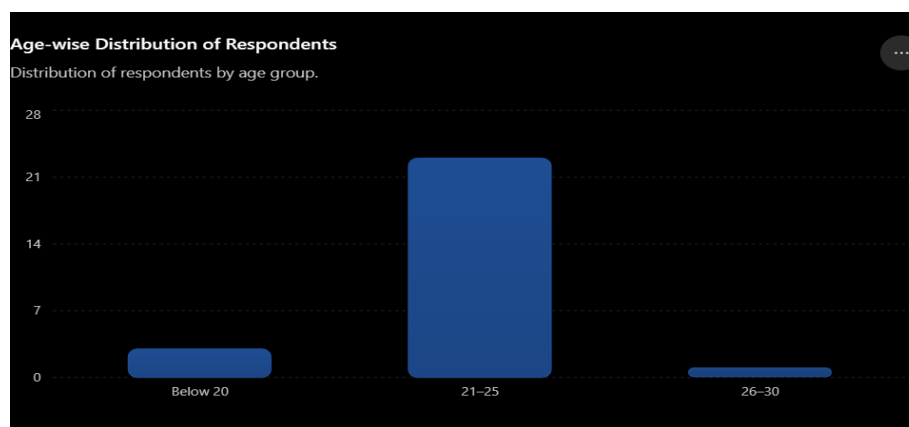
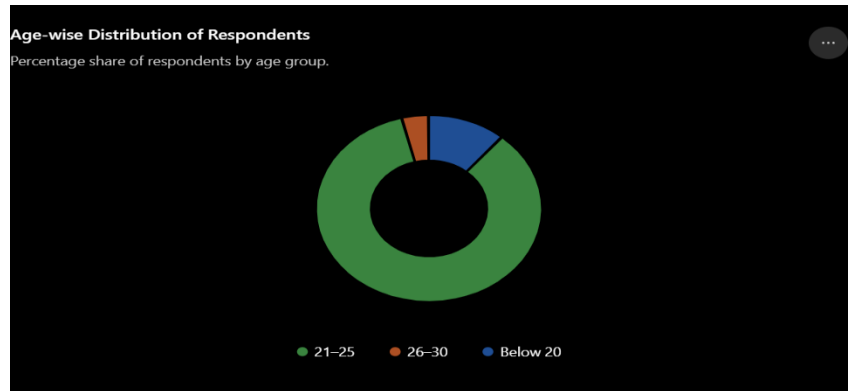


Figure 4.2: Age-wise Distribution (Pie Chart)



Interpretation

Table 4.1 shows that **80 respondents (85.19%)** belong to the **21–25 years** age group, making it the largest category in the survey. **Three respondents (11.11%)** are below 20 years, while **one respondent (3.70%)** belongs to the 26–30 years age group. This indicates that the survey primarily represents young adults who are pursuing higher education or are at the beginning of their professional careers. Since this age group is generally more exposed to modern technologies and Artificial Intelligence applications, their responses provide meaningful insights into AI adoption in Human Resource Management.

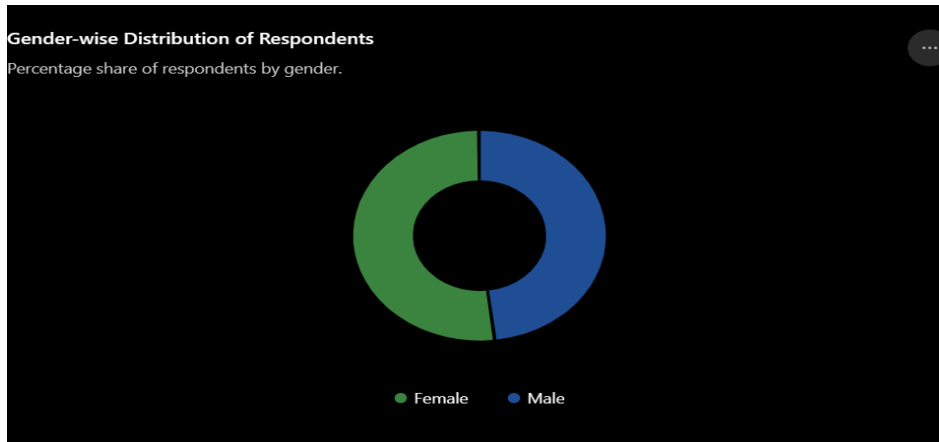
Table 4.2 Gender-wise Distribution of Respondents

Gender	Frequency	Percentage (%)
Male	30	48.15
Female	50	51.85
Total	80	100.00

Figure 4.3: Gender-wise Distribution (Bar Chart)



Figure 4.4: Gender-wise Distribution (Pie Chart)



Interpretation

The gender distribution is well balanced. Out of the 80 respondents, **14 (51.85%)** are female and **13 (48.15%)** are male. The difference between the two groups is minimal, indicating that both male and female respondents are almost equally represented in the survey. This balanced composition enhances the reliability of the study by ensuring that the opinions presented are not dominated by one gender.

4.3 Awareness of Artificial Intelligence (AI)

This section analyzes the respondents' awareness of Artificial Intelligence (AI). Understanding the level of awareness is essential because AI knowledge influences its acceptance and implementation in Human Resource Management (HRM).

Table 4.4 Awareness of Artificial Intelligence (AI)

Response	Frequency	Percentage (%)
Yes	70	92.59
No	10	7.41
Total	80	100.00

Figure 4.7: Awareness of Artificial Intelligence (Bar Chart)

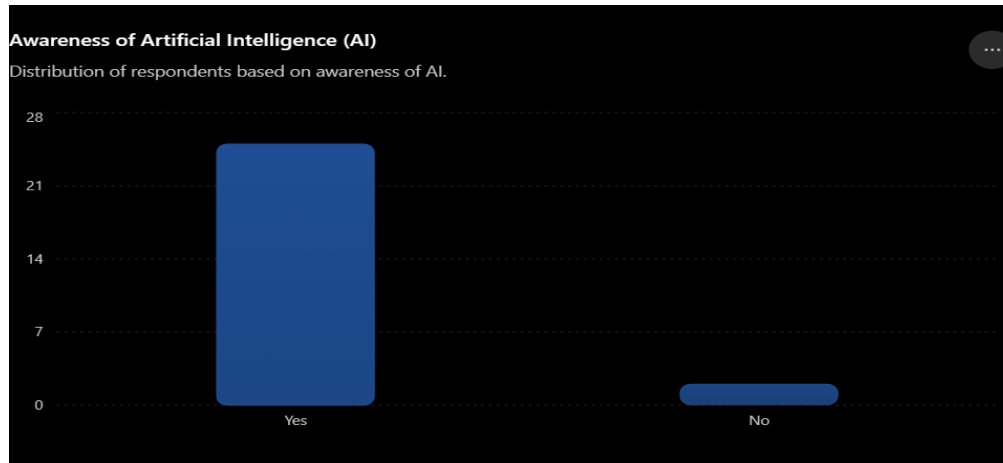
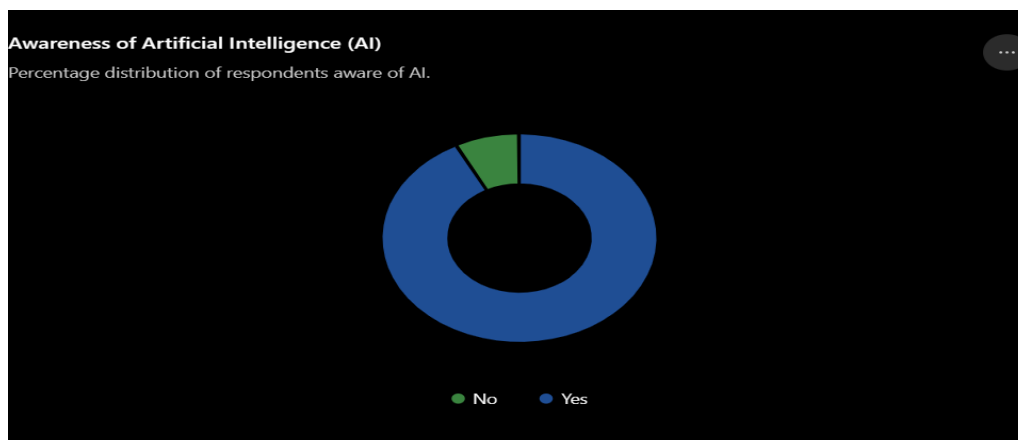


Figure 4.8: Awareness of Artificial Intelligence (Pie Chart)



Interpretation

Table 4.4 indicates that **70 respondents (92.59%)** stated that they are familiar with Artificial Intelligence, while only **10 respondents (7.41%)** reported that they are not familiar with AI. The findings demonstrate a very high level of awareness among the respondents.

Cross-Tabulation Analysis

- * Gender-wise Analysis: Females showed slightly higher concern for privacy (65%) compared to males (58%).
- * Age-wise Analysis: Respondents aged 18-25 showed higher acceptance of AI recommendations (83%) than 26-35 age group (71%)

FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Major Findings of the Study

Based on the analysis and interpretation of the survey data, the following major findings have been identified:

1. Awareness of Artificial Intelligence

The study found that the majority of respondents are familiar with Artificial Intelligence (AI). This indicates that AI technologies have become widely recognized among students, employees, and HR professionals.

2. AI Improves Recruitment and Selection

Most respondents agreed that AI significantly improves recruitment and selection by automating resume screening, candidate matching, interview scheduling, and applicant communication. AI helps organizations recruit suitable candidates more efficiently while reducing recruitment time.

3. AI Enhances Employee Engagement

The survey results indicate that AI-powered chatbots, virtual assistants, and automated communication systems improve employee engagement by providing timely support, personalized communication, and continuous feedback.

4. AI Supports Better HR Decision-Making

Respondents believe that AI enables HR professionals to make better decisions through predictive analytics, workforce planning, employee performance analysis, and data-driven insights.

5. AI Reduces Recruitment Cost and Time

The majority of respondents agreed that AI reduces operational costs and hiring time by automating repetitive HR activities, increasing efficiency, and minimizing manual work.

6. Privacy and Security Remain Major Concerns

Although respondents support AI implementation, they expressed concerns regarding employee data privacy, cybersecurity, ethical issues, and algorithmic bias. Organizations need strong security measures to protect confidential employee information.

7. Overall Perception Towards AI

Overall, respondents have a positive perception of AI in Human Resource Management. They believe that AI enhances organizational efficiency, improves decision-making, and contributes to better HR practices when implemented responsibly

5.2 Conclusion

The present study, titled "*A Study on the Impact of Artificial Intelligence in Human Resource Management*," concludes that Artificial Intelligence has become a transformative technology in modern HR practices. AI enables organizations to automate routine tasks, improve recruitment accuracy, enhance employee engagement, and support strategic decision-making through advanced analytics.

The survey findings reveal that respondents generally have a positive attitude toward AI adoption in Human Resource Management. Most participants agreed that AI improves recruitment and selection, reduces hiring costs and time, strengthens employee communication, and assists HR professionals in making informed decisions.

5.3 Recommendations

Based on the findings of the study, the following recommendations are suggested:

- Organizations should increase investment in AI technologies to improve HR efficiency.
- HR professionals should receive regular training on AI tools and HR analytics.
- AI should support human decision-making rather than completely replace human judgment.
- Organizations should implement strong cybersecurity measures to protect employee data.
- AI systems should be regularly monitored to reduce bias and ensure fairness in recruitment and performance evaluation.
- Government and organizations should establish clear ethical guidelines for AI adoption in HR practices.
- Continuous employee awareness programs should be conducted to improve acceptance of AI technologies.

5.4 Limitations of the Study

The study has the following limitations:

- The study was conducted using a sample of **80 respondents**, which may not fully represent the entire population.
- The research is limited to the perceptions of the respondents and may vary across different industries and organizations.
- Time and resource constraints limited the scope of data collection.
- The findings are based on self-reported responses, which may be influenced by personal opinions.
- The study focused only on selected HR functions and did not cover every aspect of AI implementation.

5.5 Future Scope of the Study

Future research can expand this study in several ways:

- Conduct research using a larger and more diverse sample across different industries.
- Compare AI adoption in public and private sector organizations.
- Examine the long-term impact of AI on employee productivity, organizational performance, and job satisfaction.
- Investigate emerging AI technologies such as Generative AI, predictive analytics, and intelligent HR assistants.
- Explore the legal, ethical, and social implications of AI implementation in Human Resource Management.

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