

Employees' Perceptions of AI-Driven HRM Practices: A Study of Differences Across Demographic Characteristics

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ABSTRACT

Artificial Intelligence (AI) has become & also increasingly becoming a part of human resource management (HRM), particularly in areas such as recruitment, employee development of employees, performance management, employee engagement and workforce planning. As organizations adopt AI-based HR practices, employees' perceptions of these practices become important as their acceptance and experience may differ according to their personal and professional background. This paper examines whether employees' perceptions towards AI-driven HRM practices differ across selected demographic characteristics. The study was conducted among employees working in the IT sector in Delhi/ NCR region, and data were collected from 400 respondents. A questionnaire was developed to study the Overall perception towards AI-driven HRM practices & was measured using a structured scale. One-way ANOVA was used to examine differences in perception across gender, age, qualification, work experience and designation groups. The findings show that perception does not differ significantly across gender, work experience and designation. However, a statistically significant difference was observed across age groups, with the difference specifically occurring between Age Group 1 and Age Group 4. The findings suggest that employees generally have relatively similar perceptions towards AI-driven HRM practices irrespective of their gender, experience and designation, but age may have some influence on how employees perceive AI-based HR practices, including recruitment, training etc.

Keywords: Artificial Intelligence, Human Resource Management, AI-driven HRM, Employee Perception, Demographic Characteristics, IT Sector.

Introduction

Artificial Intelligence has become an important part of modern organisations. Its use in Human Resource Management has changed from a traditional administrative style to a proactive approach to bring efficiency to every HRM function, including recruitment, employee learning, performance evaluation, employee support and workforce planning. AI-based systems can help HR departments handle large amounts of employee data, identify suitable candidates, recommend learning opportunities and also support decision-making.

However, the successful use of AI in HRM does not depend only on the availability of technology. Employees play an important role in the implementation of AI in the organisations. Each employee perceives the technology differently, as they have their own level of comfort with the use of technology, trust and understanding of AI-based HR practices. Few employees may find adoption of AI

useful for making HR processes faster and more efficient, while others are more concerned about the privacy, fairness, monitoring or the possibility of replacement of human beings.

Employee characteristics may also influence these perceptions. Age, gender, work experience and organisational position can shape how employees interact with technology and how they respond to changes in the workplace. Employees from different age groups, for example, may have different levels of familiarity with digital technologies. Similarly, employees with greater work experience or those occupying different positions may view AI-supported HR decisions differently.

The present study is about examining the employees' perceptions towards AI-driven HRM practices across selected demographic characteristics, including gender, age, work experience and designation.

Review of Literature

Arora and Mittal (2024) examined employees' perceptions of the changes that AI can bring to different HR functions, including talent acquisition, training and development, and performance management. They found that perceptions of AI-driven changes were associated with employees' intention to adopt the technology, particularly artificial intelligence. The study also highlighted the importance of trust an employee has in AI technology. It can be interpreted that the employees who are more willing to adopt AI actually believe that adoption of AI would improve their efficiency in performing tasks.

Recruitment and selection have received considerable attention because AI is increasingly being used to screen applications and support candidate selection. Cai, Zhang and Zhang (2024) analysed how people perceive fairness when AI replaces human decision-makers while shortlisting resumes. Their findings showed that the use of AI in resume screening can affect perceptions of fairness. This is important because recruitment decisions directly affect individuals, and employees or applicants may be uncomfortable with AI when they are not clear about how decisions are made. The study shows that efficiency alone may not be enough for successful AI adoption; fairness and transparency also matter.

AI is also becoming relevant to employee development and career-related decisions. Köchling, Wehner and Ruhle (2025) examined employee reactions to the use of AI in career development. Their study found that reducing human involvement in career decisions could lower perceived fairness and increase feelings of privacy intrusion. Fairness and privacy concerns were also related to employees' reactions towards the organization. The study highlights that employees may be concerned when AI uses personal information to support decisions about their career or promotion.

Performance management is another HR function where employee perception is important. AI can be used to analyse performance data, provide feedback and support evaluation. However, employees may question whether an AI system can understand factors that are difficult to measure, such as individual circumstances, effort and interpersonal skills. Recent research on responsible AI in HRM shows that fairness, perceived justice, trust and privacy are among the major concerns associated with AI-based HR decisions. The review by Köchling and colleagues also suggests that AI-related HR research needs to pay greater attention to how employees experience these systems rather than focusing only on their technical capabilities.

Revillod (2025) examined trust in AI-based HR tools and its relationship with perceived usefulness, fairness and privacy concerns. The findings indicate that employees' trust in AI is closely connected with how useful and fair they consider the technology to be. This supports the view that employees evaluate AI not only on the basis of its contribution to improve efficiency but also the privacy & security concerns associated with it. Their personal experience of fairness, privacy and transparency also influences their perception of the technology.

The broader literature also explained the importance of maintaining a balance between adoption of technology and human involvement for performing a particular task. Lukaszewski and Stone (2024) discussed the ethical challenges associated with AI and machine learning in HRM, particularly concerns related to privacy, bias, discrimination and inaccurate information. They suggested that these issues can lead to poor situations for organisations if AI is introduced without sufficient attention being given to its human impact and the ethical consequences.

Trust, fairness, privacy, transparency and human involvement are increasingly important in understanding employees' responses to AI. However, much of the recent research examines perceptions within individual HR functions, such as recruitment, career development or performance evaluation. Comparatively less attention has been given to employees' overall perception of AI-driven HRM practices across different HR functions and whether these perceptions differ according to demographic characteristics. This provides a useful research gap for the present study, which examines employees' overall perceptions towards AI-driven HRM practices across gender, age, work experience and designation.

Objective of the Study

The objective of the study is to examine whether employees' perceptions towards AI-driven HRM practices differ across selected demographic characteristics including gender, age, experience & level of designation

Research Methodology

A quantitative approach is followed for this study. A structured questionnaire was framed to collect information from employees regarding their perceptions towards AI-driven HRM practices. 400 responses were collected by filling out the Google Form in online mode. The respondents were grouped according to their gender, age, qualification, work experience and designation.

Employees' perception towards AI-driven HRM practices was measured using a structured set of 20 statements. These statements included important components of perception, including ethical concerns, security, and work-life balance. Responses were collected on a Likert scale ranging from strongly disagree to strongly agree. After that, we calculated the overall score of perception by taking the average of the scores of each statement of perception, where a higher score means that there is a more favourable overall perception towards AI-driven HRM practices.

Data Analysis

To analyse the collected data, first the reliability of the statements is checked. For further analysis, descriptive and inferential statistical techniques were used to determine the role of demography in determining the perception; Analysis of Variance (ANOVA) was conducted. If, the result of ANOVA result was statistically significant, Tukey's HSD post-hoc test was used to identify which specific groups differed from each other. A significance level of 5% ($p < .05$) was considered for hypothesis testing.

Table 1: Reliability Analysis of Perception

	Mean	SD	Cronbach's α
Scale	3.73	0.411	0.853

The reliability of the 20 items measuring employees' overall perception towards AI-driven HRM practices was assessed using Cronbach's Alpha. The obtained Cronbach's Alpha value was 0.853. The value of **0.853** indicates that the overall 20-item perception scale is highly reliable and suitable for further analysis. The overall mean score was **3.73**, with a standard deviation of **0.411**. The relatively low standard deviation also indicates that the responses were reasonably consistent across the respondents. We can infer that the perception items can be considered as a reliable scale for measuring employees' overall perception towards AI-driven HRM practices in the present study.

Descriptive Statistics of Overall Perception across Gender Groups

Gender	N	Mean	SD
Male	204	3.77	.400
Female	193	3.70	.421
Others	3	3.75	.450

The difference in the mean scores across the three groups is quite small. This suggests that respondents from different gender groups had broadly similar perceptions towards AI-driven HRM practices. Although male respondents recorded the highest mean score, the difference between male and female respondents is only 0.07, which is relatively small.

The standard deviation values are also low, ranging from 0.400 to 0.450. This indicates that the responses within each gender group were reasonably close to their respective mean scores. In simple terms, respondents within each group showed a fairly consistent pattern in their perceptions.

Descriptive Statistics of Overall Perception across age Groups

Age Group	Frequency	Mean	SD
21–30 years	172	3.73	.423
31–40 years	65	3.78	.396
41–50 years	94	3.69	.418
Above 50 years	69	3.75	.389

The table shows that respondents aged 31–40 years reported the highest mean perception score (3.78), followed by those above 50 years (3.75), aged 21–30 years (3.73), and aged 41–50 years (3.69). The differences in mean scores are small, indicating that employees across all age groups had broadly similar and positive perceptions towards AI-driven HRM practices. The low standard deviation values also suggest consistency in responses within each group.

Descriptive Statistics of Overall Perception across various levels of experience

Experience	Frequency	Mean	SD
Less than 2 Years	82	3.68	.440
2-5 Years	132	3.76	.386
6-10 Years	119	3.73	.430
More than 10 years	67	3.74	.392

The table shows that respondents with **2–5 years of experience** reported the highest mean perception score (3.76), followed by those with **more than 10 years** (3.74) and **6–10 years** of experience (3.73). Respondents with less than 2 years of experience had the lowest mean score (3.68).

Overall, the differences in mean scores are small, suggesting that employees across different experience levels had **fairly similar and positive perceptions towards AI-driven HRM practices**. The SD values are also relatively low (0.386–0.440), indicating that responses within each group were reasonably consistent

Descriptive Statistics of Overall Perception across various levels of qualification

Education	Frequency	Mean	SD
UG	44	3.74	.380
PG	134	3.74	.435
Professional Certifications	146	3.73	.408
Diploma Holders	76	3.73	.398

The table shows that respondents with **UG and PG qualifications** recorded the highest mean perception score (3.74), while those with **professional certifications and diplomas** had a slightly lower mean score (3.73). The difference between the groups is extremely small, indicating that respondents across different educational backgrounds had **almost similar and positive perceptions towards AI-driven HRM practices**.

The SD values range from 0.380 to 0.435, suggesting that the responses within each education group were reasonably consistent. Overall, **educational qualification does not appear to create much difference in the average perception scores** in this sample.

Descriptive Statistics of Overall Perception across various levels of designation

Designation	Frequency	Mean	SD
Executive	167	3.71	.384
Sr Executive	122	3.77	.407
Manager	74	3.70	.447
Sr Manager	37	3.78	.470

The table shows that Senior Managers reported the highest mean perception score (3.78), closely followed by Senior Executives (3.77). Executives recorded a mean score of 3.71, while Managers

had the lowest score (3.70). The differences between the groups are small, indicating that respondents across different designations had fairly similar and positive perceptions towards AI-driven HRM practices.

The SD values range from 0.384 to 0.470, suggesting that responses within the different designation groups were reasonably consistent. Overall, the findings show that designation does not appear to make a major difference in employees' overall perception, based on the descriptive results.

H1: There is no significant difference in employees' perceptions towards AI-driven HRM practices across different gender groups.

	Sum of Squares	df	Mean Square	F	p
Gender	0.534	2	0.267	1.58	.207
Residuals	66.961	397	0.169		
a) Dependent Variable: Overall perception					
b) Independent Variable: Gender					

ANOVA test was conducted to examine whether employees' perceptions towards AI-driven HRM practices differ across gender groups. The results indicated that the differences in overall perception across the gender groups were not statistically significant, $F(2, 397) = 1.580$, $p = .207$. Thus, we can say that employees' perceptions of AI is not dependent on the gender they belong to.

H2: There is no significant difference in employees' perception towards AI-driven HRM practices across different age groups.

	Sum of Squares	df	Mean Square	F	p
Age group	1.89	3	0.631	2.9	.035
Residuals	86.16	396	.218		
a) Dependent Variable: Overall perception					
b) Independent Variable: Age group					

The results of ANOVA test indicate a statistically significant difference in employees' overall perception towards AI-driven HRM practices across different age groups, $F(3, 396) = 2.90$, $p = .035$. Since the p-value is below the 0.05 significance level, the null hypothesis (H2) is rejected. This suggests that employees perceive AI adoption in a different way as per their age groups. To identify the specific age groups contributing to this significant difference, a Tukey post-hoc analysis was conducted.

Post Hoc Comparisons - Age_Group

Age Group Comparisons	Mean Difference	P -value	Significant
Age 1 vs Age 2	0.139	.180	No
Age 1 vs Age 3	0.138	.251	No
Age 1 vs Age 4	0.239	.019	Yes
Age 2 vs Age 3	-0.0001	1.000	No
Age 2 vs Age 4	.100	.444	No
Age 3 vs Age 4	.100	.524	No

Post-hoc comparisons using the Tukey HSD test indicated that the overall perception score was significantly different between Group 1 and Group 4 ($p = .019$). No other pairwise comparisons reached statistical significance ($p > .05$).

So, we can conclude that the perception scores of age group 1 (21-30 years) are significantly different from the perception scores of group 4 (above 50 years).

H3: There is no significant difference in employees' perceptions towards AI-driven HRM practices for different qualification groups.

	Sum of Squares	df	Mean Square	F	p
Qualification	0.0159	3	0.00529	0.0310	.993
Residuals	67.4793	396	0.17040		
a) Dependent Variable: Overall perception					
b) Independent Variable: Qualification					

ANOVA test was conducted to examine whether employees' overall perceptions towards AI-driven HRM practices differed according to their educational qualifications. The results revealed no statistically significant difference among the educational groups, $F(3, 396) = 0.031$, $p = .993$. Since the p -value exceeds the 0.05 significance level, the null hypothesis is not rejected. This analysis did not find a statistically significant difference across educational groups.

H4: There is no significant difference in employees' perception towards AI-driven HRM practices for different experience levels.

	Sum of Squares	df	Mean Square	F	p
Experience	0.317	3	0.106	0.623	.600
Residuals	67.178	396	0.170		
a) Dependent Variable: Overall perception					
b) Independent Variable: Experience					

ANOVA was conducted to examine whether employees' perceptions towards AI-driven HRM practices differed significantly across experience groups. The results indicated that the differences in cumulative perception across the four experience groups were not statistically significant, $F(3, 396) = 0.623$, $p = .600$. Thus, the findings suggest that employees' perceptions towards AI-driven HRM practices do not vary significantly according to their level of work experience.

H5: There is no significant difference in employees' perceptions towards AI-driven HRM practices for different designation levels.

	Sum of Squares	df	Mean Square	F	p
Designation	0.477	3	0.159	0.939	.422
Residuals	67.018	396	0.169		
a) Dependent Variable: Overall perception					
b) Independent Variable: Designation					

ANOVA test was conducted to examine whether employees' perceptions towards AI-driven HRM practices differed across designation groups. The results indicated that the differences in overall perception across the four designation groups were not statistically significant, $F(3, 396) = 0.939$, $p = .422$. Thus, employees' perceptions towards AI-driven HRM practices did not differ significantly according to their designation.

Findings and Discussions

Demographic Characteristic	P value	Finding
Gender	.207	Not significant
Age	.035	Significant
Work Experience	.600	Not significant
Designation	.422	Not significant
Education	.993	Not significant

The findings of the present study indicate that age is the only demographic characteristic that produces a statistically significant difference in employees' overall perceptions towards AI-driven HRM practices. In contrast, no significant differences were observed across work experience groups. The finding related to age is consistent with the broader literature on workplace technology adoption. Fazi, Zaniboni, and Wang (2025), in their review of 51 empirical studies, reported evidence of age-related differences in several technology adoption factors, including attitudes towards technology, performance expectancy, effort expectancy and facilitating conditions. These differences suggest that employees of different age groups may develop different perceptions and responses towards workplace technologies.

Similarly, Morris and Venkatesh (2000) found that age influenced employees' responses to workplace technology. Their study showed that younger and older employees differed in the factors influencing their technology adoption decisions. Younger employees were more strongly influenced by their attitudes towards technology, whereas older employees were more influenced by social norms and perceived behavioural control. A meta-analysis by Hauk, Hüffmeier, and Krumm (2018) also reported a relationship between chronological age and technology acceptance, particularly through perceived ease of use.

The significant effect of age found in the present study may therefore reflect differences in employees' exposure to technology, familiarity with digital systems and expectations regarding technology at different stages of their working lives. However, work experience represents a different characteristic from chronological age. Length of professional experience does not necessarily indicate an employee's level of familiarity with recent AI-based technologies, as employees with different years of experience may have similar exposure to AI-enabled systems within their current organizations.

The non-significant result for work experience in the present study therefore suggests that the number of years an employee has spent in employment may not, by itself, be sufficient to explain differences in perceptions towards AI-driven HRM practices. Rather, employees' perceptions may be influenced more by age-related differences and their exposure to contemporary digital technologies. This finding should, however, be interpreted within the context of the present sample taken in IT sector & can't infer that experience level doesn't have a significant role in determining the perception of AI.

Conclusion

Among the demographic characteristics examined, only age shows a statistically significant difference in employees' overall perceptions towards AI-driven HRM practices. Differences across gender, work experience, designation and educational qualification are not statistically significant in this sample.

Practical Implications

The findings have several practical implications for HR managers.

First, organisations should focus on creating **clear and transparent communication** about AI-based HR systems for all employees rather than assuming that perceptions will differ substantially by age, gender or designation.

Second, since age differences were statistically significant, organizations can consider **age-sensitive training and orientation programmes** when introducing AI-driven HR practices. Employees who are less familiar with newer technologies may benefit from additional demonstrations, training and opportunities to ask questions.

Third, the absence of significant differences based on experience and designation suggests that AI-related training should not be restricted only to senior or junior employees. A common understanding of AI-based HR processes across organizational levels may be more useful.

Finally, HR managers should continue to pay attention to issues such as **trust, transparency, privacy, fairness and human interaction**, as these factors can influence employees' acceptance of AI-driven HR practices regardless of demographic background.

Limitations and Future Research

The study has some limitations. First, the research is based on employees from the IT sector, and therefore the findings may not be directly applicable to other sectors. Second, the study uses selected demographic characteristics and does not consider other factors that may influence perception, such as previous experience with AI, level of AI knowledge, organizational culture or perceived usefulness of AI.

Future studies can examine these factors and compare employees across different industries. Longitudinal studies can also be conducted to determine whether employees' perceptions change as organizations increase their use of AI in HRM.

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