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The role of Artificial Intelligence in Employee Engagement and Retention

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Abstract:

By increasing employee engagement and strengthening retention tactics, artificial intelligence (AI) is revolutionizing contemporary human resource management (HRM). Chatbots, predictive analytics, machine learning, and personalized learning platforms are examples of AI-powered technologies that assist businesses in better understanding employee needs, enhancing communication, identifying attrition risks, and improving the workplace. This study looks at the advantages, difficulties, and potential applications of AI in employee engagement and retention. The study suggests that although AI greatly improves business performance and employee satisfaction, successful application requires addressing ethical issues with privacy, prejudice, and openness.

Keywords: Predictive analytics, chatbots, human resource management, artificial intelligence, and employee engagement and retention.

I. INTRODUCTION

In the contemporary corporate environment, artificial intelligence (AI) has emerged as one of the most important technological developments. It describes computer systems' capacity to carry out tasks like learning, problem-solving, decision-making, and language comprehension that often call for human intelligence. AI has been extensively used in a number of business domains over the last ten years, including human resource management (HRM), where it helps companies increase productivity, make data-driven choices, and improve the general employee experience.

Two crucial elements that support corporate performance are employee engagement and retention. The degree of dedication, zeal, and emotional attachment that workers have to their jobs and the company is referred to as employee engagement. In general, engaged workers are more driven, productive, and eager to support company objectives. Conversely, employee retention refers to an organization's capacity to hold onto its skilled workers for an extended length of time. High staff turnover can have a detrimental impact on an organization's performance, raise recruitment expenses, and lower productivity.

Artificial intelligence has revolutionized HR procedures by offering creative approaches to staff management. HR workers may better understand employee needs, enhance communication, track engagement levels, and identify employees who could be at risk of leaving the company with the use of AI-powered tools like chatbots, predictive analytics, machine learning, and sentiment analysis. These tools assist companies in taking prompt action to lower employee turnover and increase employee satisfaction.

By suggesting training courses based on workers' abilities and professional objectives, AI also facilitates individualized learning and growth. It offers real-time feedback, supports ongoing performance monitoring, and aids in the development of impartial and equitable evaluation procedures. AI helps businesses make well-informed decisions on employee well-being, rewards, and career development by evaluating employee data. AI also promotes personalized learning and development by recommending training programs based on employees' skills and career goals. It provides immediate feedback, facilitates continuous performance monitoring, and helps create fair and unbiased evaluation processes. By analyzing employee data, AI assists companies in making well-informed decisions on rewards, career growth, and employee well-being. A more committed and engaged workforce is the outcome of this.

The application of AI in HR has many advantages, but there are drawbacks as well, including issues with algorithmic bias, data privacy, and ethics. As a result, businesses need to make sure that AI is applied sensibly and used to supplement human judgment rather than to replace it. This study looks at how artificial intelligence might increase employee retention and engagement. It explores the uses, advantages, difficulties, and potential applications of AI in HRM and emphasizes how AI may assist businesses in developing a loyal, driven, and productive staff.

Statement of Problems:

Increasing competition, shifting employee expectations, and high turnover rates have made employee engagement and retention significant difficulties for companies. Artificial Intelligence (AI) is being used by many companies to enhance employee satisfaction, forecast staff attrition, and assist with HR decision-making. However, it is currently unclear how well AI can improve employee engagement and retention. Thus, the purpose of this study is to investigate how AI might enhance employee engagement and retention while also identifying its advantages and disadvantages.

II. **Review**:

Davenport and Ronanki (2018) investigated the real-world uses of AI in Companies and discovered that it enhances HR operations through automation, predictive analytics, and better decision-making, which enhances employee satisfaction.

Pulido-Martos and Perez-Lozano (2024) HR managers may make better decisions by using machine learning and natural language processing to evaluate and predict employee engagement, according to a review of research on AI and employee engagement.

Arora and Ramesh Babu (2025) examined the application of generative AI in personnel management and came to the conclusion that, although highlighting ethical and privacy issues, AI improves employee engagement and retention by offering personalized learning, predictive analytics, and data-driven HR practices.

Hom and Kiazad (2025) highlighted that a variety of organizational factors affect employee retention and that contemporary technology, such as artificial intelligence (AI), can assist campiness in better understanding employee turnover intentions and creating retention strategies.

Research Gap:

The majority of earlier research has been on particular AI applications in hiring, talent management, or employee engagement. There hasn't been much thorough research done on how AI affects employee engagement and retention at the same time. Thus, this study aims to investigate the advantages and disadvantages of AI in enhancing employee engagement and retention.

RESEARCH METHODOLOGY

3.1Population and Sample

The study is based on a sample of one hundred workers from a variety of companies in a range of sectors. Convenience sampling was used to choose the respondents and get their thoughts on how AI affects employee engagement and retention.

3.2 Data and Sources of Data

A standardized questionnaire that was given to employees was used to gather the study's primary data. To learn more about how employees view artificial intelligence's contribution to employee engagement and retention, the questionnaire included both closed-ended and Likert scale questions.

3.3 Statistical tools and econometric models

Using descriptive statistical techniques including percentage analysis, frequency distribution, mean, and tables, the gathered data was arranged, categorized, and examined. The findings were analyzed in order to comprehend how AI affects employee retention and engagement

3.4 **Ethical Consideration:**

The investigation was carried out in accordance with ethical research procedures. Respondents were made aware of the study's objectives, their answers were kept private, and participation was entirely voluntary. All participants' privacy and identities were protected, and the material gathered was exclusively used for academic purposes.

IV. RESULTS AND DISCUSSION

Table-1: Awareness of Artificial Intelligence in the Workplace.

Response	Frequency	Percentage (%)
Yes	82	82%
No	18	18%
Total	**100**	**100%**

Interpretation: According to the table, 82% of the respondents are aware that artificial intelligence is used at work, whereas 18% are not. This suggests that workers in contemporary companies are more familiar with AI.

Table-2: AI Improves the Employee Engagement.

Response	Frequency	Percentage (%)
Strongly Agree	30	30%
Agree	45	45%
Neutral	15	15%
Disagree	7	7%
Strongly Disagree	3	3%
Total	**100**	**100%**

Interpretation: By improving communication, learning opportunities, and staff assistance, AI increases employee engagement, according to the majority of respondents (75%) who agree or strongly agree.

Table-3: AI Improves the Employee Retention.

Response	Frequency	Percentage (%)
Strongly Agree	28	28%
Agree	47	47%
Neutral	16	16%
Disagree	6	6%
Strongly Disagree	3	3%
Total	**100**	**100%**

Interpretation: According to the results, 75% of respondents think AI helps retain employees by increasing work satisfaction and lowering attrition.

Correlation Analysis

Table-4: Correlation Between AI and Employee Engagement.

Variable	AI	Employee Engagement
AI	1.000	0.682**
Employee Engagement	0.682**	1.000

Note: At the 0.01 level (2-tailed), the correlation is significant.

Interpretation: Employee engagement and artificial intelligence have a substantial positive association, according to the Pearson correlation coefficient (r = 0.682). Employee engagement tends to rise along with the deployment of AI.

Table-5: t-test

Particulars	Values
Sample Size	100
Mean	4.10
Standard Deviation	0.78
t-value	5.42
Degrees of Freedom (df)	99
P-Value	0.000

Decision: The null hypothesis is rejected since the p-value (0.000) is less than 0.05.
Interpretation: The findings show that staff retention is significantly improved by artificial intelligence. AI-based HR procedures raise employee retention by enhancing performance, organizational commitment, and employee happiness.

Hypothesis:

H_0: Artificial intelligence and employee engagement do not significantly correlate.
H_1: Artificial intelligence and employee engagement are significantly correlated.

Test	Correlation	p-value	Decision
Person Correlation	0.682	0.001	Reject H_0

Interpretation:
The null hypothesis is rejected since the p-value (0.001) is less than 0.05. Thus, there is a strong positive correlation between employee engagement and artificial intelligence.

Findings:

- According to the report, 82% of participants are aware that artificial intelligence is being used at work.
- The majority of respondents (75%) concurred that via improving communication, learning opportunities, and HR support, artificial intelligence raises employee engagement.
- According to the study, 75% of participants think that AI increases job satisfaction and lowers employee turnover, which helps with employee retention.
- Greater use of AI is linked to increased employee engagement, according to the correlation analysis, which revealed a substantial positive relationship ($r = 0.682$) between AI and employee engagement.
- Since the p-value (0.001) was below the 0.05 significance threshold, the hypothesis testing results supported a meaningful relationship between AI and employee engagement.
- With a p-value of 0.000, the one-sample t-test showed that artificial intelligence significantly improves staff retention, rejecting the null hypothesis.
- Overall, the results indicate that the use of AI in HRM has a favorable impact on employee retention and engagement, which supports better organizational performance.

Conclusion:
By increasing employee engagement and retention, artificial intelligence has emerged as a crucial tool in contemporary HRM. The study's conclusions show that AI helps businesses improve communication, offer individualized training and development, promote employee satisfaction, and facilitate sound decision-making. Additionally, the statistical research showed a strong influence of AI on staff retention and a significant positive association between AI and employee engagement.
Although AI offers several benefits, organizations should address challenges such as data privacy, ethical concerns, and employee trust to ensure its successful implementation. AI should be used to support human decision-making rather than replace it. Overall, the study concludes that the effective adoption of Artificial Intelligence can help organizations build a more engaged, satisfied, and committed workforce, leading to improved organizational performance and long-term success.

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