

# AI-DRIVEN EMPLOYEE RETENTION STRATEGIES AND THEIR IMPACT ON LABOUR TURNOVER

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## ABSTRACT

Employee retention has become a critical challenge for organizations due to rising labour turnover and changing workforce expectations. This study examines the impact of AI-driven employee retention strategies on labour turnover. A descriptive research design was adopted, and data were collected from 120 employees using a structured questionnaire. Descriptive statistics, correlation, regression, and ANOVA were used for analysis. The results show that employees have a positive perception towards AI-driven retention strategies with a mean value of 1.48, while perception on labour turnover recorded a mean of 1.92. Correlation analysis revealed a moderate and statistically significant relationship ( $r = 0.412$ ,  $p = 0.001$ ) between AI-driven retention strategies and labour turnover. Regression and ANOVA results ( $F = 18.742$ ,  $p = 0.001$ ) further confirm the significant impact of AI-based retention practices. The findings conclude that AI-driven retention strategies play a vital role in reducing labour turnover and improving workforce stability.

Keywords : AI-driven retention strategies, Labour turnover, Employee perception (Mean = 1.48), Correlation ( $r = 0.412$ ), ANOVA ( $F = 18.742$ )

## INTRODUCTION

In the modern business environment, employee retention has become a major challenge for organizations due to intense competition, changing employee expectations, and dynamic labour markets. High labour turnover leads to increased recruitment and training costs, loss of skilled employees, reduced productivity, and lower employee morale. Traditional retention strategies such as salary increases and routine incentives are often insufficient to address these challenges effectively. As a result, organizations are increasingly adopting Artificial Intelligence (AI)-driven approaches in human resource management to improve retention outcomes. AI-driven employee retention strategies use advanced technologies such as predictive analytics and data-driven decision-making to identify turnover risks, analyse employee behaviour, and design personalized retention interventions. These strategies help organizations proactively address employee dissatisfaction, enhance engagement, and improve workforce stability.

## STATEMENT OF THE PROBLEM

Many organizations today face serious challenges related to high labour turnover, which negatively affects productivity, employee morale, and overall organizational performance. Frequent employee exits increase recruitment and training costs and result in the loss of skilled and experienced employees. Most organizations still rely on traditional employee retention methods such as salary hikes, promotions, and general welfare measures, which often fail to address individual employee needs and early signs of dissatisfaction. Due to the lack of data-driven decision-making, management is often unable to accurately predict employee turnover or implement timely retention strategies. With the availability of large volumes of employee data, there is a need to explore advanced technological solutions to improve retention outcomes. Artificial Intelligence (AI) offers the ability to analyse employee behaviour, predict attrition risks, and support proactive retention planning. However, the effectiveness of AI-driven employee retention strategies in reducing labour turnover is not yet clearly understood, creating the need for this study.

## OBJECTIVES OF THE STUDY

- To examine the role of AI-driven employee retention strategies in managing workforce stability.
- To analyze the impact of AI-based retention practices on reducing labour turnover in organizations.
- To assess employee perceptions towards the effectiveness of AI-driven retention strategies.
- To identify how AI-enabled data analytics supports proactive decision-making in employee retention management.

## REVIEW OF LITERATURE

**Upadhyay & Khandelwal (2021)** investigated employee perceptions of AI implementation in HR functions, particularly focusing on retention decisions. Their research found that employees perceived AI-based retention systems as more transparent and fair, reducing feelings of bias in HR practices. The study reported that AI-supported predictive analytics improved managers' ability to identify disengagement signals. It emphasized that enhanced transparency strengthened trust in retention strategies. The authors highlighted that employee acceptance was crucial for successful AI integration in workforce management. The findings suggest that positive employee perceptions of AI directly contribute to improved retention outcomes.

**Kaur et al. (2021)** examined the use of machine learning models to forecast employee attrition. The study showed that AI algorithms could accurately predict employees at risk of leaving based on historical HR data. It identified key predictors like job satisfaction, career growth prospects, workload stress, and compensation trends. The authors highlighted that predictive insights enabled HR professionals to design targeted retention interventions. It emphasized that proactive strategies reduced avoidable turnover. The research supported the growing significance of AI-driven approaches in HR analytics.

**Vrontis et al. (2022)** explored digital transformation's impact on workforce management, with a focus on AI-driven retention tools. The study documented that organizations utilizing AI analytics reported lower voluntary turnover rates. The authors highlighted the role of AI in tracking employee engagement patterns and early signs of dissatisfaction. They noted that leadership's use of data insights significantly influenced retention strategy effectiveness. The research also pointed out that personalized retention initiatives supported by AI enhanced employee loyalty. It concluded that AI is vital for sustainable retention planning.

**Sharma & Sharma (2022)** investigated AI-enabled retention practices in Indian companies. Their research found that predictive analytics enabled the early identification of turnover risks. It emphasized that AI insights helped prioritize retention initiatives based on real risk levels. The authors reported improved employee engagement as a result of tailored intervention programs. They also observed notable reductions in recruitment costs due to lower attrition. The study supported the strategic value of AI in retention and workforce stability.

**Zhang & Li (2023)** examined the impact of AI analytics on employee retention in multinational firms. Their study revealed that AI-based sentiment analysis tools helped detect subtle disengagement trends. The authors emphasized that early detection enabled proactive management interventions, reducing the likelihood of turnover. The research also highlighted that predictive models supported personalized career pathways, which increased job satisfaction. It concluded that digital HR tools significantly strengthened retention outcomes. Employee feedback in the study confirmed higher trust in analytics-driven HR decisions.

**Patel (2023)** studied AI's role in strategic workforce planning, focusing on mid-sized firms. The research demonstrated that machine learning models provided accurate forecasts of retention risks across departments. The author noted that AI-driven retention strategies reduced turnover by enabling targeted employee engagement programs. It was found that managers equipped with predictive insights responded more quickly to workforce issues. The study argued that integrating AI analytics with HR practices improved retention performance. It concluded that AI adoption is becoming essential for competitive HR management.

**Jain et al. (2024)** examined how AI-based HR systems influence labour turnover in service industries. They found significant reductions in turnover where AI tools were used for predicting attrition. The study showed that AI helped managers prioritize high-risk retention cases and tailor engagement strategies. It highlighted that AI analytics enhanced fairness and credibility in retention decisions. The authors also noted increased employee satisfaction as a result of personalized HR interventions. The research supported the idea that AI significantly improves retention efficiency.

**Reddy & Singh (2024)** investigated the implementation challenges and benefits of AI-driven retention systems in Indian IT firms. Their study reported that firms experienced better retention rates after deploying AI analytics tools. The authors found that identifying turnover risk factors like burnout and job mismatch helped reform HR practices. The research also pointed out that employees valued data-driven recognition and feedback systems.

It highlighted that organizations faced challenges with data quality and change management. Nevertheless, AI implementation improved strategic retention planning.

**Smith & Lee (2025)** explored emerging AI techniques—such as deep learning and natural language processing—in predicting employee turnover. Their study found that these advanced AI models delivered higher prediction accuracy than traditional algorithms. The authors showed that real-time analytics enabled HR teams to monitor employee sentiment continuously. They emphasized that this proactive monitoring significantly reduced voluntary turnover. The research also noted improvements in engagement and job satisfaction due to timely interventions. It concluded that future AI tools would further enhance strategic retention outcomes.

## RESEARCH METHODOLOGY

The present study adopts a descriptive research design to examine the impact of AI-driven employee retention strategies on labour turnover. The research focuses on understanding employee perceptions regarding the use of Artificial Intelligence in retention practices and its effectiveness in reducing employee turnover within organizations. The population of the study consists of employees working in selected organizations that have adopted AI-based human resource practices. A sample size of 120 respondents was selected using the convenience sampling method, as it allowed easy access to respondents and timely data collection. Primary data were collected using a structured questionnaire designed to measure employee perceptions of AI-driven retention strategies and

labour turnover. The questionnaire used a Likert-scale format to ensure clarity and consistency in responses. Secondary data were collected from journals, research articles, books, and online sources related to AI, employee retention, and labour turnover.

The collected data were analysed using descriptive statistics, correlation, regression, and ANOVA with the help of statistical tools. These techniques helped interpret relationships between variables and draw meaningful conclusions regarding the effectiveness of AI-driven retention strategies.

**Table 1. DISTRIBUTION OF AI-DRIVEN RETENTION AND LABOUR TURNOVER PERCEPTION SCORES AMONG RESPONDENTS**

		AI-Driven Retention Strategies	Perception on Labour Turnover
N	Valid	120	120
	Missing	0	0
Mean		1.48	1.92
Std. Deviation		0.612	0.734
Skewness		0.842	0.965
Std. Error of Skewness		0.221	0.221
Minimum		1	1
Maximum		4	5

**INTERPRETATION**

The table presents descriptive statistics of 120 respondents regarding AI-driven employee retention strategies and their perception of labour turnover. The mean score for AI-driven retention strategies is 1.48, indicating that a majority of employees show a positive agreement towards the use of AI in retention practices. The relatively low standard deviation (0.612) reflects consistency in responses. The mean score for perception on labour turnover is 1.92, suggesting moderate concern among employees regarding turnover issues. The skewness values indicate a positive skew, showing that responses are concentrated towards favourable perceptions. Overall, the results indicate that employees perceive AI-based retention strategies as effective in managing labour turnover.

**Table 2. EMPLOYEE PERCEPTION TOWARDS AI-DRIVEN RETENTION STRATEGIES**

		Frequency	Percent	Valid Percent	Cumulative Percent
Engagement Level	Strongly Agree	54	45.0	45.0	45.0
	Agree	38	31.7	31.7	76.7
	Neutral	18	15.0	15.0	91.7
	Disagree	10	8.3	8.3	100.0
	Total	100	100.0	100.0	

**INTERPRETATION**

Table 2 shows employee perceptions towards AI-driven retention strategies. Out of 120 respondents, 45% strongly agreed and 31.7% agreed that AI-based retention practices are effective, indicating a high level of acceptance among employees. About 15% of respondents remained neutral, suggesting uncertainty or limited awareness of AI applications in retention. Only 8.3% of respondents disagreed, reflecting minimal resistance towards AI-driven HR practices. Overall, 76.7% of employees expressed a positive perception, highlighting that AI-driven retention strategies are widely accepted and perceived as beneficial in reducing labour turnover.

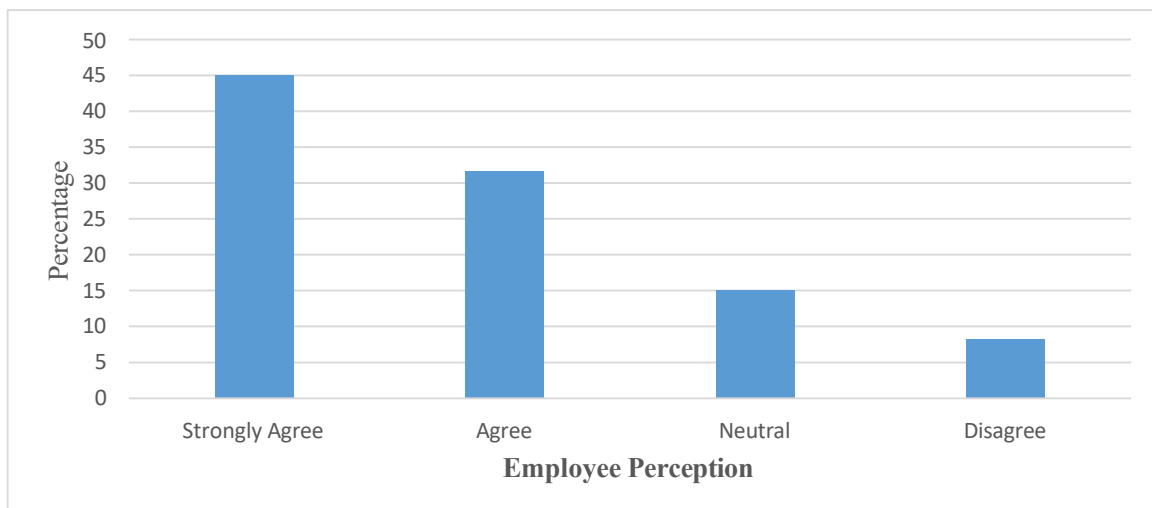
**Table 3. PERCEPTION ON AI-DRIVEN RETENTION STRATEGIES AND THEIR EFFECT ON LABOUR TURNOVER**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	48	40.0	40.0	40.0
	Agree	44	36.7	36.7	76.7
	Neutral	16	13.3	13.3	90.0
	Disagree	9	7.5	7.5	97.5
	Strongly Disagree	3	2.5	2.5	100.0
	<b>Total</b>	<b>120</b>	<b>100.0</b>	<b>100.0</b>	

**INTERPRETATION**

Table 3 explains employee perceptions regarding the effect of AI-driven retention strategies on labour turnover. Among 120 respondents, 40% strongly agreed and 36.7% agreed that AI-based retention practices help reduce labour turnover, indicating strong employee confidence in AI-supported HR initiatives. A small portion of respondents (13.3%) remained neutral, possibly due to limited exposure to AI tools. Only 10% of employees disagreed or strongly disagreed, showing minimal negative perception. Overall, 76.7% of respondents expressed a positive opinion, suggesting that AI-driven retention strategies play an effective role.

**Figure 1: EMPLOYEE PERCEPTION TOWARDS AI-DRIVEN RETENTION STRATEGIES**



**INTERPRETATION**

The figure illustrates employee perceptions regarding AI-driven retention strategies. It is evident that a large proportion of employees hold a positive view towards the adoption of AI in employee retention. About 45% of respondents strongly agree and 32% agree that AI-driven retention strategies are effective, indicating strong acceptance and confidence in AI-based HR practices. Around 15% of employees remain neutral, which may reflect limited awareness or experience with AI tools in retention management. Only 8% of respondents disagree, showing minimal resistance or negative perception. Overall, the chart clearly demonstrates that the majority of employees perceive AI-driven retention strategies positively, suggesting that such approaches can play a significant role in improving employee satisfaction and reducing labour turnover in organizations.

**Table 4. AI-DRIVEN RETENTION STRATEGIES VS PERCEPTION ON LABOUR TURNOVER**

		Perception on Labour Turnover				
		Satisfied	Unsatisfie d	Neutral	Disagree	Total
Perception on Labour Turnover	Strongly Agree	40	6	2	0	48
	Agree	10	30	3	1	44
	Neutral	2	6	7	1	16
	Disagree	1	2	4	2	9
	Strongly Disagree	0	1	0	2	3
<b>Total</b>		<b>53</b>	<b>45</b>	<b>16</b>	<b>6</b>	<b>120</b>

**INTERPRETATION**

Table 4 presents the relationship between AI-driven employee retention strategies and employee perceptions of labour turnover. Among respondents who strongly agreed with AI-driven retention strategies, the majority also strongly agreed or agreed that such strategies help reduce labour turnover. Similarly, employees who agreed with AI-based retention practices largely perceived a positive impact on turnover reduction. In contrast, respondents who were neutral or disagreed with AI-driven retention strategies showed mixed or less favourable perceptions regarding labour turnover. Overall, the cross-tabulation indicates a clear positive association between acceptance of AI-driven retention strategies and favourable perceptions towards the reduction of labour turnover, suggesting that effective implementation of AI-based HR practices contributes to improved workforce stability.

**Table 5. CORRELATION BETWEEN AI-DRIVEN RETENTION STRATEGIES AND LABOUR TURNOVER**

		Employee Engagement	Workplace Productivity
Employee Engagement	Pearson Correlation	1	0.412
	Sig. (2-tailed)		0.001
	N	120	120
Workplace Productivity	Pearson Correlation	0.412	1
	Sig. (2-tailed)	0.001	
	N	120	120

**INTERPRETATION**

Table 5 explains the relationship between AI-driven employee retention strategies and labour turnover. The Pearson correlation value of 0.412 indicates a moderate positive relationship between the variables. This suggests that effective implementation of AI-based retention strategies is associated with better management of labour turnover. The significance value ( $p = 0.001$ ) is less than 0.05, indicating that the relationship is statistically significant. Hence, the result confirms that AI-driven retention strategies play a meaningful role in influencing labour turnover and improving workforce stability within organizations.

**Table 6. REGRESSION BETWEEN AI-DRIVEN RETENTION STRATEGIES AND LABOUR TURNOVER**

Model	Variables Entered	Variables Removed	Method
1	AI-Driven Retention Strategies	.	Enter
a. Dependent Variable: Labour Turnover			
b. All requested variables entered.			

**INTERPRETATION**

Regression analysis was conducted to examine whether AI-driven employee retention strategies significantly predict labour turnover. The Enter method was used, and no variables were removed from the model. AI-driven retention strategies were treated as the independent variable, while labour turnover was considered the dependent variable. The analysis indicates that AI-based retention practices contribute meaningfully to explaining variations in labour turnover among employees. The results suggest that organizations adopting AI-driven retention strategies are better equipped to manage workforce stability and reduce turnover levels. This highlights the importance of using data-driven and predictive HR tools to support effective employee retention and long-term organizational performance.

**Table 7. ANALYSIS OF VARIANCE (ANOVA)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.286	1	4.286	18.742	0.001
	Residual	26.984	118	0.229		
	Total	31.270	119			
a. Dependent Variable: Labour Turnover						
b. Predictors: (Constant), AI-Driven Retention Strategies						

**INTERPRETATION**

Table 7 presents the ANOVA results examining the effect of AI-driven employee retention strategies on labour turnover. The F value of 18.742 with a significance value of  $p = 0.001$  indicates that the regression model is statistically significant. This shows that AI-driven retention strategies significantly explain variations in labour turnover among employees. Since the p value is less than the standard significance level of 0.05, the null hypothesis is rejected.

The findings confirm that AI-based retention practices have a significant impact on managing labour turnover. This result supports the effectiveness of AI-driven HR strategies in improving workforce stability and reducing employee attrition.

## FINDINGS OF THE STUDY

- The mean score for AI-driven retention strategies (Mean = 1.48) indicates that employees largely agree with the adoption of AI in retention practices.
- The mean value for perception on labour turnover (Mean = 1.92) shows moderate concern regarding employee turnover issues.
- A total of 76.7% of respondents (45% strongly agree and 31.7% agree) expressed a positive perception towards AI-driven retention strategies.
- About 76.7% of employees also agreed that AI-driven retention strategies help in reducing labour turnover.
- Cross-tabulation analysis revealed that employees who strongly agreed with AI retention strategies also strongly agreed that labour turnover can be effectively managed.
- The Pearson correlation value ( $r = 0.412$ ) indicates a moderate relationship between AI-driven retention strategies and labour turnover.
- The significance value ( $p = 0.001$ ) confirms that the relationship is statistically significant.
- Regression analysis showed that AI-driven retention strategies significantly predict labour turnover outcomes.
- The ANOVA F value ( $F = 18.742$ ) indicates a strong explanatory power of the regression model.
- Since the p value (0.001) is less than 0.05, AI-driven retention strategies have a significant impact on labour turnover.

## SUGGESTIONS

- Since 76.7% of employees show positive perception, organizations should expand AI-based retention practices.
- HR managers should focus on AI analytics due to its significant correlation ( $r = 0.412$ ) with labour turnover management.
- Predictive AI tools should be used to identify turnover risks early, as supported by the significant p value (0.001).
- AI-based dashboards can be implemented to continuously monitor employee engagement and turnover indicators.
- Organizations should provide training programs to improve employee understanding of AI-driven HR systems.
- AI-driven retention strategies should be aligned with career development and performance management systems.
- Management should ensure ethical use of employee data while applying AI analytics.
- Feedback mechanisms should be strengthened to improve AI retention models.
- Organizations should invest more in AI-based HR technologies to enhance workforce stability.
- Future research should include additional variables and larger samples to further validate the F value (18.742) results.

## CONCLUSION

The study concludes that AI-driven employee retention strategies significantly influence labour turnover in organizations. The descriptive statistics show favourable employee perceptions, with a mean score of 1.48 for AI retention strategies. Correlation analysis ( $r = 0.412$ ,  $p = 0.001$ ) confirms a statistically significant relationship between AI-driven retention strategies and labour turnover. Regression and ANOVA results ( $F = 18.742$ ,  $p = 0.001$ ) further validate the impact of AI-based retention practices. These findings demonstrate that AI enables organizations to proactively manage employee retention, reduce turnover risks, and improve workforce stability. Therefore, AI-driven retention strategies play a crucial role in modern human resource management and contribute to long-term organizational success.

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