

# Employee Retention Strategy Report

Date: June 24, 2025

To: HR Department & Key Stakeholders

From: Kien Nguyen and NIKHIL U Team

Subject: Analysis of Employee Attrition and Recommendations for Improving Retention

## 1. Executive Summary

A mid-sized technology company is looking to proactively improve employee retention by understanding the key factors that drive loyalty and contribute to attrition. This report outlines the results of a data analysis project aimed at identifying these factors and providing actionable insights. By leveraging a dataset of 74,610 employee profiles, we developed a logistic regression model to predict the likelihood of an employee leaving the company.

Our analysis revealed several critical drivers of attrition, including **low job satisfaction, insufficient monthly income, high overtime hours, and poor company reputation**. The predictive model we built can identify employees at risk of leaving with a notable degree of accuracy, allowing for targeted intervention.

This report translates these findings into a set of data-driven recommendations. By focusing on enhancing job satisfaction, reviewing compensation and overtime policies, and strengthening company culture and recognition programs, the company can significantly improve employee retention, foster a more stable workforce, and create a more supportive work environment.

## 2. Problem Statement and Our Approach

The primary objective was to move from a reactive approach to turnover to a proactive strategy for retention. The goal was to identify the key drivers of employee attrition and develop a predictive model to flag at-risk employees.

Our methodology followed a structured, five-step approach:

1. **Data Preparation and Cleaning:** We started by consolidating and cleaning the employee dataset, which included handling missing information and correcting inconsistencies to ensure the quality of our analysis.

2. **Exploratory Data Analysis (EDA):** We conducted an in-depth exploration of the data to uncover trends and relationships. We analyzed how factors like demographics, job role, income, and employee sentiment relate to attrition.
3. **Feature Engineering and Selection:** We transformed the data into a format suitable for modeling and used statistical techniques (Recursive Feature Elimination) to identify the most influential predictors of attrition.
4. **Predictive Modeling:** We built a logistic regression model to predict the probability of an employee leaving. The model was optimized to balance its ability to correctly identify both employees who will stay and those who will leave.
5. **Insight Generation and Recommendations:** Finally, we synthesized the findings from our analysis and the model to develop the actionable recommendations detailed in this report.

### 3. Key Insights from Data Analysis

Our analysis of the employee data revealed several clear trends that correlate with an employee's decision to leave the company.

**Insight 1: Job Satisfaction is a Major Driver of Retention** There is a direct and strong relationship between an employee's stated job satisfaction and their likelihood of leaving. Employees reporting 'Low' or 'Very Low' satisfaction have a significantly higher attrition rate compared to their more satisfied colleagues.

**(Visualization: A bar chart showing the attrition rate for each category of 'Job Satisfaction'. The bars for 'Low' and 'Very Low' would be visibly higher than for 'Medium' and 'High'.)**

**Insight 2: Compensation and Overtime Are Critical Factors** Employees with lower monthly incomes are more likely to leave. This suggests that compensation is a key consideration. Furthermore, employees who work overtime are more prone to attrition, indicating that burnout and work-life imbalance are significant concerns.

**(Visualization: Two side-by-side charts. The first is a histogram showing a higher concentration of attrition at lower 'Monthly Income' brackets. The second is a count plot showing a higher proportion of 'Left' employees among those who work 'Overtime'.)**

**Insight 3: Company Reputation and Recognition Matter** An employee's perception of the company's reputation and the recognition they receive directly impacts their loyalty.

Attrition rates are highest among employees who perceive the company's reputation as 'Poor' or 'Very Poor' and who report receiving 'Low' or 'Very Low' recognition for their work.

**(Visualization: A stacked bar chart illustrating the relationship between 'Company Reputation' and 'Attrition', showing a large red segment (Left) for the 'Poor' reputation categories.)**

#### 4. Predictive Model Performance

We successfully developed a logistic regression model to predict employee attrition. In business terms, the model's performance can be summarized as follows:

- **Accuracy:** The model correctly predicts whether an employee will stay or leave approximately **75%** of the time.
- **Sensitivity (Recall):** The model correctly identifies **78%** of the employees who are actually at risk of leaving. This is crucial for allowing HR to intervene effectively.
- **Precision:** When the model predicts that an employee will leave, it is correct about **50%** of the time.

While the precision indicates that some flagged employees may not leave, the high sensitivity ensures that we are casting a wide enough net to catch most at-risk individuals, allowing for proactive engagement.

#### 5. Summary of Insights and Business Implications

The combined findings from our analysis and predictive model point to a clear picture: employee retention at the company is heavily influenced by a combination of financial, cultural, and personal well-being factors.

- **Financial Strain:** Inadequate compensation is a primary push factor.
- **Work-Life Imbalance:** High overtime contributes to burnout and attrition.
- **Cultural Deficiencies:** A poor company reputation and lack of employee recognition create a negative environment that erodes loyalty.
- **Low Engagement:** Job satisfaction remains a fundamental pillar of employee retention.

These issues not only lead to higher turnover costs but also impact morale, productivity, and the company's ability to attract top talent.

## 6. Data-Driven Recommendations

Based on these insights, we propose the following data-driven recommendations to the HR department:

### 1. Enhance Job Satisfaction and Engagement:

- **Action:** Implement regular "pulse" surveys to monitor job satisfaction in real-time.
- **Rationale:** Our data shows this is a leading indicator of attrition. Early detection of declining satisfaction allows for targeted interventions with specific teams or managers.

### 2. Review Compensation and Overtime Policies:

- **Action:** Conduct a market analysis to ensure compensation packages, especially for lower-income roles, are competitive. Investigate the root causes of high overtime in certain departments.
- **Rationale:** Income is a significant factor in an employee's decision to leave. Addressing overtime can mitigate burnout and improve work-life balance.

### 3. Strengthen Company Culture and Recognition Programs:

- **Action:** Launch initiatives to improve the company's internal reputation, such as transparent communication from leadership. Develop a more structured and consistent employee recognition program that celebrates contributions at all levels.
- **Rationale:** Employees who feel valued and believe in the company's mission are far more likely to stay.

### 4. Leverage the Predictive Model for Proactive Intervention:

- **Action:** Use the developed model to generate a quarterly "at-risk" list of employees. HR business partners can then confidentially engage with the managers of these employees to discuss potential issues and develop retention plans.

- **Rationale:** This allows the company to move from a reactive to a proactive retention strategy, addressing potential issues before an employee decides to leave.

## **7. Conclusion**

The insights derived from this analysis provide a clear roadmap for improving employee retention. By focusing on the key drivers of attrition—satisfaction, compensation, work-life balance, and company culture—and by using predictive analytics to identify at-risk employees, the company can foster a more loyal, stable, and engaged workforce. We recommend implementing these strategies to build a stronger foundation for long-term success.