

Attrition Prevention Suggestions – HR Analytics Project

Project Overview

In this project, I analyzed employee data from the IBM HR dataset to identify factors contributing to employee attrition. Using data exploration, machine learning, and SHAP value analysis, I gained insights into the most common reasons employees leave the company and proposed strategies to reduce attrition.

Key Findings

1. **Sales Department Has High Attrition**

I observed that the Sales department had a significantly higher attrition rate compared to others, like R&D or HR.

2. **Lower Salary → Higher Attrition**

Employees in the lowest monthly income bracket were more likely to leave.

3. **OverTime Strongly Increases Risk of Leaving**

Most employees who worked overtime eventually left the organization.

4. **Lack of Promotions Increases Attrition**

Employees who had not been promoted in more than 3 years showed a higher tendency to leave.

5. **Job Role Matters**

Specific roles such as “Laboratory Technician” and “Sales Representative” were associated with higher attrition.

Suggestions to Reduce Attrition

Based on the above findings, I propose the following solutions:

- **Salary Adjustments for Lower Bands**

Review compensation for employees in lower salary bands and adjust where necessary to reduce dissatisfaction.

- **Manage Overtime More Effectively**

Monitor and control overtime work. Consider flexible work policies to promote work-life balance.

- **Career Growth Opportunities**
Implement timely promotions and internal job rotation to give employees growth paths.
- **Focus on High-Risk Job Roles**
Offer training, mentorship, and recognition programs for roles with higher attrition.
- **Conduct Regular Surveys and Check-ins**
Use anonymous feedback tools to detect early signs of disengagement and act proactively.

Conclusion

By combining machine learning predictions with business insights, I believe HR teams can better understand which employees are at risk and take early action to retain them. This will reduce costs, improve employee satisfaction, and support long-term business growth.