

EMPLOYEE ATTRITION PREVENTION STRATEGIES

Insights & Recommendations from HR Analytics

Executive Summary

Employee attrition is a key challenge for organizations, leading to increased hiring costs and reduced productivity. This document presents actionable insights and prevention strategies based on predictive analytics using Python (Scikit-learn, Matplotlib) and Power BI dashboards. The analysis helps identify high-risk employees and key drivers of attrition, enabling data-driven HR decisions.

Project Objective

- To predict employee attrition using HR data.
- To identify the most influential features that contribute to attrition.
- To recommend actionable strategies for HR teams to reduce attrition rates.

Key Findings from Data Analysis

- **Top Predictors of Attrition** (via SHAP analysis):
 - Overtime
 - Monthly income
 - Years at company
 - Job role (e.g., Sales Executive, Support staff)
 - Environment satisfaction
 - Distance from home
- **High-Risk Segments:**
 - Employees with less than 2 years of service
 - Single employees with low income

- Employees doing overtime frequently
- Departments with high attrition: Sales, Support

Predictive Model Summary (Python File)

- **Model Used:** Random Forest Classifier
- **Accuracy:** ~84%
- **Evaluation Metrics:**
 - Precision, Recall, F1-score
 - Confusion matrix showing true vs. predicted attrition cases
 - Correlation heatmap

Attrition Prevention Strategies

A. Workplace Policy Improvements

- Implement **flexible work schedules** or hybrid options to reduce stress.
- Monitor and regulate **overtime** hours for work-life balance.
- Create **anonymous feedback channels** for employees to voice concerns.

B. Career Development & Engagement

- Offer **internal mentorship and learning programs**.
- Build **custom career progression paths** with regular 1-on-1 reviews.
- Recognize achievements with **awards and appreciation programs**.

C. Compensation and Benefits

- Revisit **salary bands** for underpaid high-risk roles.
- Provide **performance-based bonuses and retention incentives**.
- Invest in **employee wellness programs**, including mental health.

D. Onboarding and Early Experience

- Strengthen onboarding for new employees with 0–2 years tenure.
- Assign mentors (Training them) during the first six months.
- Conduct pulse surveys in the first 90 days.

Conclusion

Data-driven HR practices can significantly enhance employee retention by proactively identifying and mitigating attrition risks. By acting on key predictors like overtime and satisfaction scores, HR teams can create a healthier, more engaged workforce, ultimately saving costs and boosting productivity.

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Date: 28/06/2025