

Salifort Motors

Employee Retention Project

ISSUE / PROBLEM

Salifort Motors wants to take some initiatives to improve employee turnover rate at the company by answering the question:

What's likely to make the employee leave the company?

RESPONSE

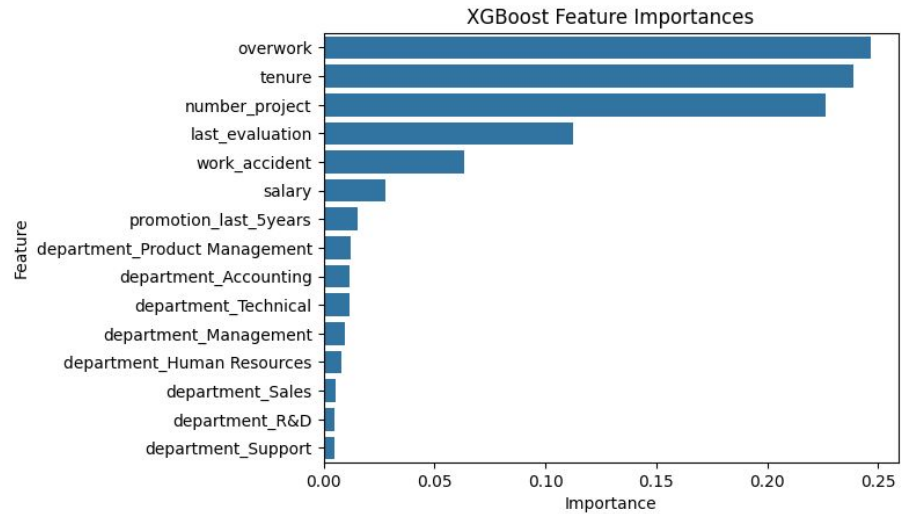
After training and evaluation, the XGBoost model was selected over Random Forest, Decision Tree, and Logistic Regression due to its superior predictive accuracy on employee turnover.

Key problems identified:

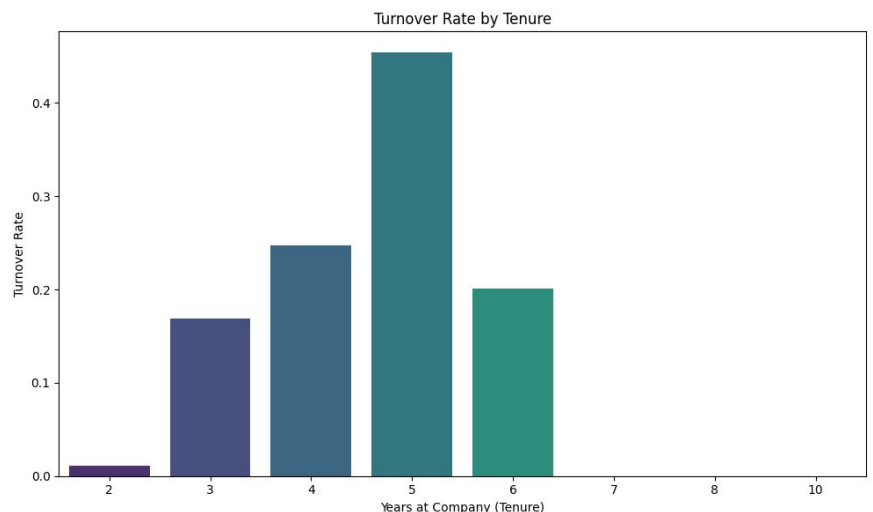
1. Imbalance Between Performance and Recognition
2. Excessive and Poorly Managed Workload

IMPACT

This model helps predict whether an employee will leave and identify which factors are most influential. These insights can help HR make decisions to improve employee retention.



Barplot above shows the most relevant variables used in XGBoost model: 'last_evaluation', 'number_project', 'tenure' and 'overwork'.



Barplot shows the turnover rate across tenure, help identifying the high-risk group

INSIGHTS/NEXT STEPS

- Establish transparent promotion criteria and communicate them clearly.
- Introduce structured performance reviews that include career development planning.
- Launch formal recognition programs (e.g., performance bonuses, awards, public praise).
- Identify high-potential employees early and map them to growth opportunities.
- Implement workload tracking tools to detect and prevent overworking.
- Link additional responsibilities to incentives such as bonuses or career advancement.
- Train managers to identify signs of burnout and redistribute tasks proactively.
- Investigate the delayed resignation pattern and its link to satisfaction and workload.
- Carefully manage data splits and sampling to avoid future information leaking into training.
- Add new features (workload trends, promotion gaps, and interaction terms) to improve model insights.