

Salifort Motors: Employee Turnover Prediction Project

Employee Retention Project Executive summary report for Salifort prepared by the Salifort data team

ISSUE / PROBLEM

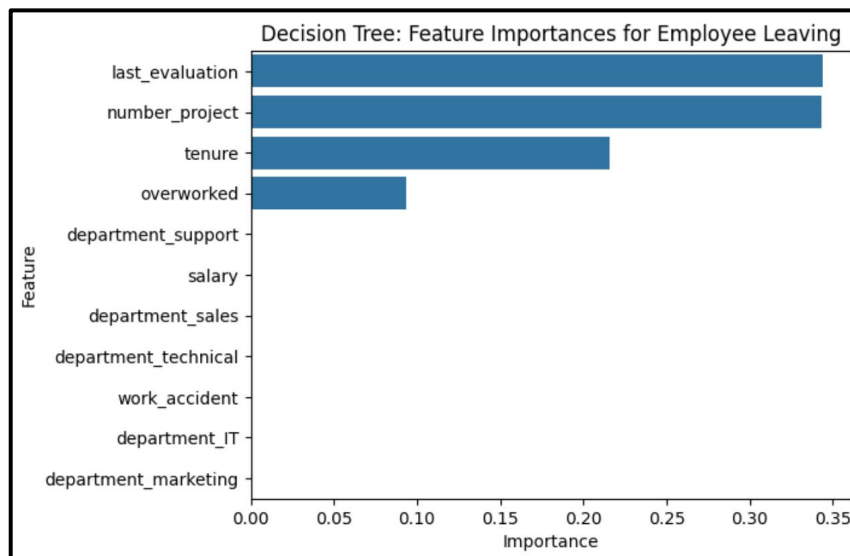
Salifort Motors faces a high turnover rate, increasing costs tied to recruiting, training, and hiring. To boost retention, leadership seeks to understand: **What factors are most likely to cause an employee to leave?** Identifying these will guide retention strategies.

RESPONSE

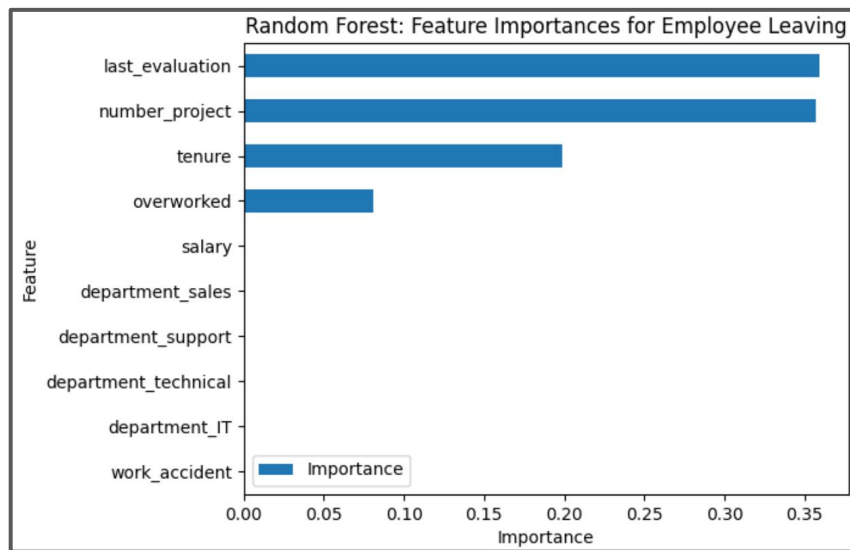
To address high turnover, HR conducted a survey to identify key attrition drivers. I was tasked with analyzing the data and building a model to predict whether an employee will leave. Since the target variable is categorical, I explored both logistic regression and tree-based models. After evaluation, the most effective model was selected to help leadership understand turnover and guide retention efforts.

IMPACT

The second iteration of the Random Forest model outperformed other models and was selected as the champion model. It accurately predicts attrition and identifies key factors driving turnover, enabling HR to implement targeted actions that improve retention and reduce costs.



The bar chart illustrates feature importances from a Decision Tree model used to predict employee attrition. The most influential factors are **last_evaluation**, **number_project**, **tenure**, and **overworked**, suggesting these variables play a key role in determining whether an employee is likely to leave the organization. Other features like department and salary show minimal importance in this model.



The bar chart displays feature importances from a Random Forest model used to predict employee attrition. The top contributing variables are **last_evaluation**, **number_project**, **tenure**, and **overworked**. These features are the same as those emphasized in the Decision Tree model, indicating consistent relevance in identifying employees likely to leave. Other factors such as **salary** and **work_accident** have lower importance in comparison.

KEY INSIGHTS

- Cap the number of projects that employees can work on.
- Consider promoting employees who have been with the company for at least four years, or conduct further investigation about why four-year tenured employees are so dissatisfied.
- Either reward employees for working longer hours, or don't require them to do so.
- If employees aren't familiar with the company's overtime pay policies, inform them about this. If the expectations around workload and time off aren't explicit, make them clear.
- Hold company-wide and within-team discussions to understand and address the company work culture, across the board and in specific contexts.
- High evaluation scores should not be reserved for employees who work 200+ hours per month. Consider a proportionate scale for rewarding employees who contribute more/put in more effort.