Salifort Motors

Employee Retention Project

ISSUE / PROBLEM

Salifort Motors seeks to improve employee retention and answer the following question:

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

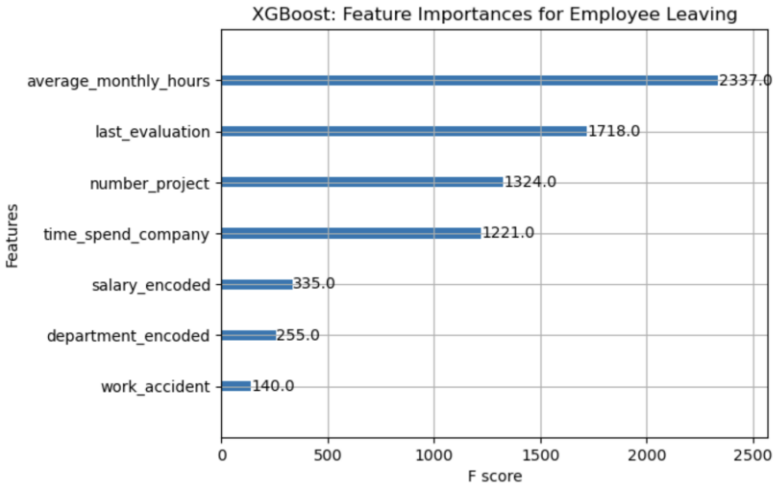
RESPONSE

Advanced algorithms, namely random forest and XGBoost will be implemented for enhanced predictive capabilities.

Preliminary results indicate a slight performance edge for the XGBoost model over the alternatives.

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: `*average_monthly_hours*`, `*last_evaluation*`, `*number_project*`, `*time_spend_company*`, and `*salary_encoded*`.

In the random forest model above, `*last_evaluation*`, `*tenure*`, `*number_project*`, `*overworked*`, `*salary_low*`, and `*work_accident*` have the highest importance. These variables are most helpful in predicting the outcome variable, `*left*`.

KEY INSIGHTS

- Employees handling seven projects and working 260-280 hours/month exhibit significant turnover.
- Departures are notable among individuals managing only two projects, indicating potential retention struggles for newer employees.
- Employees handling three to five projects demonstrate higher retention rates, maintaining an average workload of around 200 hours/month.
- There is a discernible imbalance in salary distribution, especially among high-tenure employees.