Salifort Motors Employee Retention

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ISSUE / PROBLEM

Salifort Motors wants to better understand employee retention. They want an answer to the following question:
What's likely the reason for an employee to leave the company ?

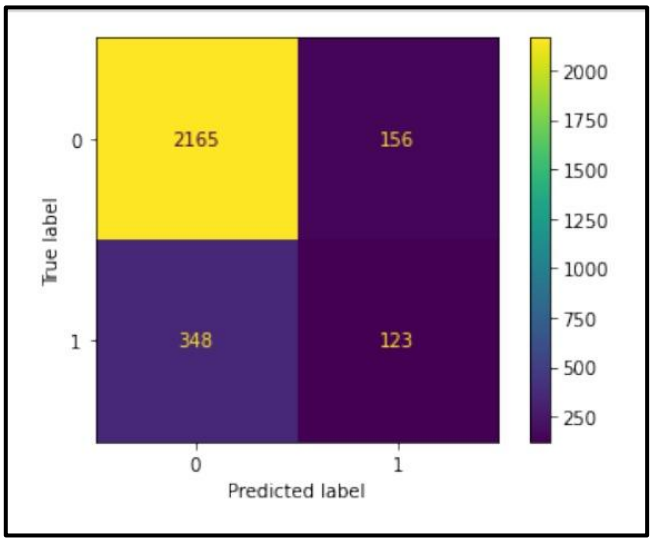
RESPONSE

From looking at the data we will build a logistic regression model because our outcome variable is categorical.

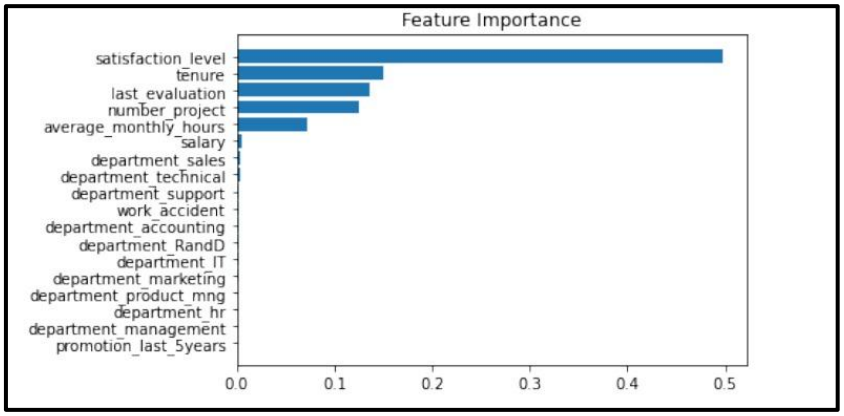
IMPACT

This model can help discover whether an employee will leave or not and which factors can lead them to make such a decision. The insights found with this model can help the HR department make informed decisions based on employee retention.

Logistic Regression Confusion Matrix



As seen above, the model accurately predicted 2165 **True Negatives**, employees who did not leave the company in the top left hand corner. Also, accurately predicted 123 **True Positives**, employees who did leave the company in the bottom right corner, known as True Positives. This model, is ideal if you want to predict whether an employee will stay at the company, but if we want to accurately predict whether someone will leave we might want to choose a higher level model such as a tree based model to achieve a higher accuracy.



From the model we can see above that the following features display the most importance: 'satisfaction_level', 'tenure', 'last_evaluation', 'number_project', and 'average_monthly_hours'.

These variables showed to be the most valuable in predicting the outcome variable 'left', which tells us whether an employee left the company or stayed.

KEY INSIGHTS

In order to retain employees, we can implement the following:

- Cap the number of projects that employees can work on so that burn out does not occur.
- 4 year employees seem to have extremely low satisfaction scores, we should think about promoting employees who have been at the company for 4 years or longer. Now, if this is not an option then further research can be done to understand why employees at a 4 year mark are so dissatisfied.
- Most employees at this company had been overworked, so either provide them a reward from their time and effort and do not require them to work such extensive hours.
- Consider informing employees on overtime policies if they are not familiar with them.
- A scale should be put in place for evaluation scores and not explicitly given to those who work 200 + hours per month!