Employee Turnover

A key component of success for a business is its ability to train, engage and retain employees. Companies spend a significant amount of resources (money, time, etc) to train new employees (source?). It would be essential then to prevent as much turnover as possible. I propose the question ‘What key factors influence an employee’s exit?’ To accomplish this I am using a dataset called ‘Employee Turnover’ from Kaggle.com. *I am using ‘Employee Turnover’ column as the dependent variable.*

To start with I imported my packages I anticipated needing for this analysis and loaded my csv file. I initially had issues using the ‘read\_csv’ function from pandas due to encoding but once I changed the engine and encoding type it loaded correctly.

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Next I verified there were no null values and checked the datatypes. Some of the columns I wanted to use had an object type so I converted them to an enumeration type.

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The next step was to illustrate the distribution of the predictor variables and create a correlation matrix which I did via heatmap.

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Then to finalize preprocessing the data I scaled it. Scaling the data helps mitigate different ranges the predictor variables might have and standardizes the data as well. Scaling also allows features to be unit-independent.

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Then I ran KNN on the scaled data. Unfortunately the results did not come back as I was hoping. The training score only came back as a .70 while the test set only came back as a .56. Even after playing with the different numbers of neighbors I could not strengthen the KNN score.

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References

<https://www.kaggle.com/datasets/davinwijaya/employee-turnover>

<https://edwvb.blogspot.com/2017/10/employee-turnover-how-to-predict-individual-risks-of-quitting.html>