RICHARD'S & SONS ATTRITION RATE MODEL

Phil Conrad Kirundi

BUSINESS UNDERSTANDING

Overview

This project is aim to develop a binary classification

problem to help predict the attrition rate in Richard’s & Sons Co.

and essentially help the company improve their methods of employees’ retention.

BUSINESS UNDERSTANDING

Problem Statement

The company, Richard's & Son's company is facing a problem of attrition in which many employees are resigning/quitting from the company. The executives are concerned and would like to know if the rate of attrition will increase in the future. This project will help them understand the reasons behind this catastrophe while also creating a proper working environment for its employees.

BUSINESS UNDERSTANDING

Objectives/Goals

In this project, we are interested in finding answers to the following questions:

1. Find out why the rate of attrition has increased.
2. Develop a model that will accurately predict future rate of attrition.
3. Find a probable solution to reduce attrition.

DATA UNDERSTANDING

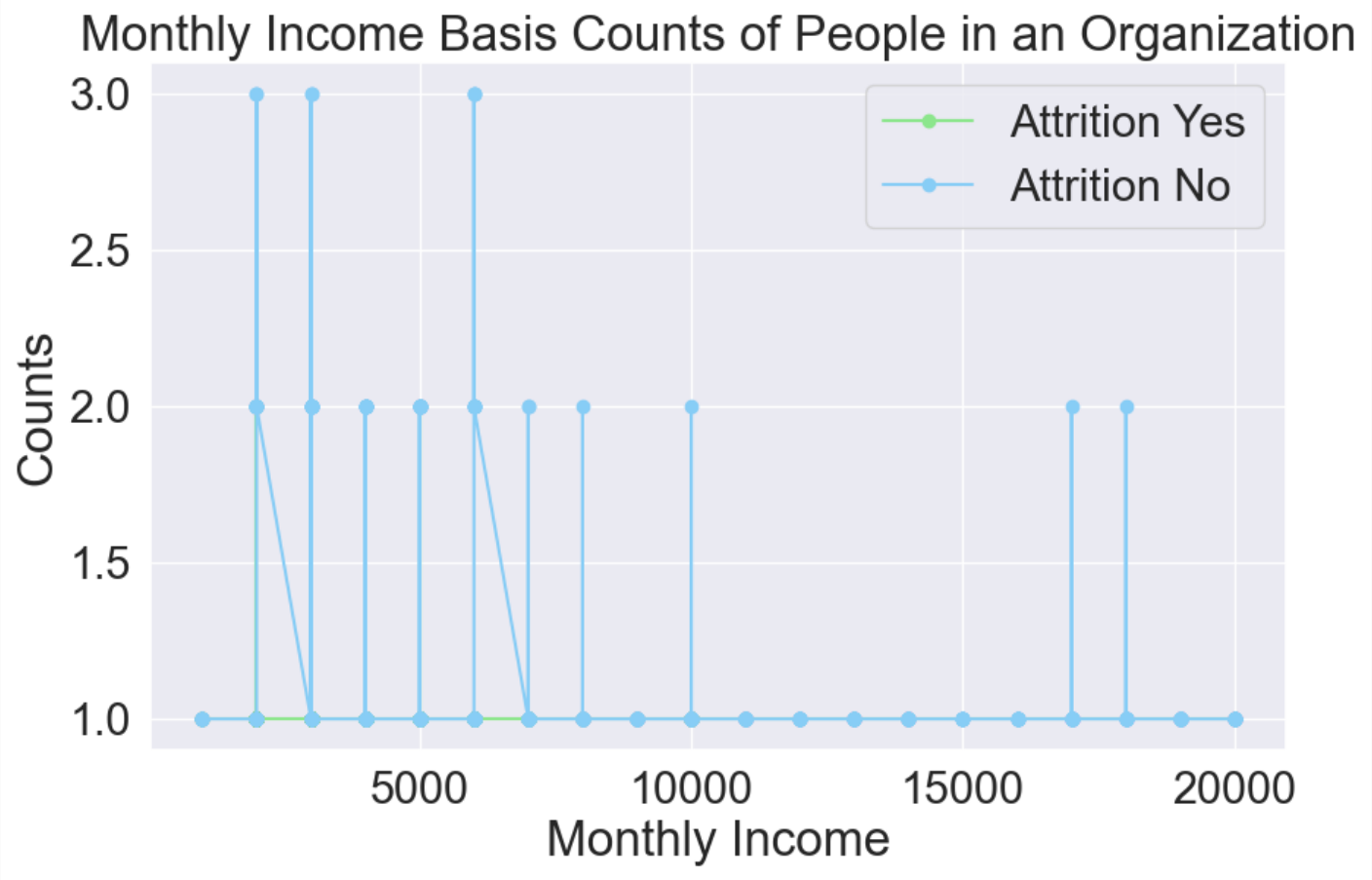
We will be using the HR Attrition Dataset for this project.

There are 1470 records in the dataset with 35 columns (with 26 columns as numeric and 9 as categorical columns)

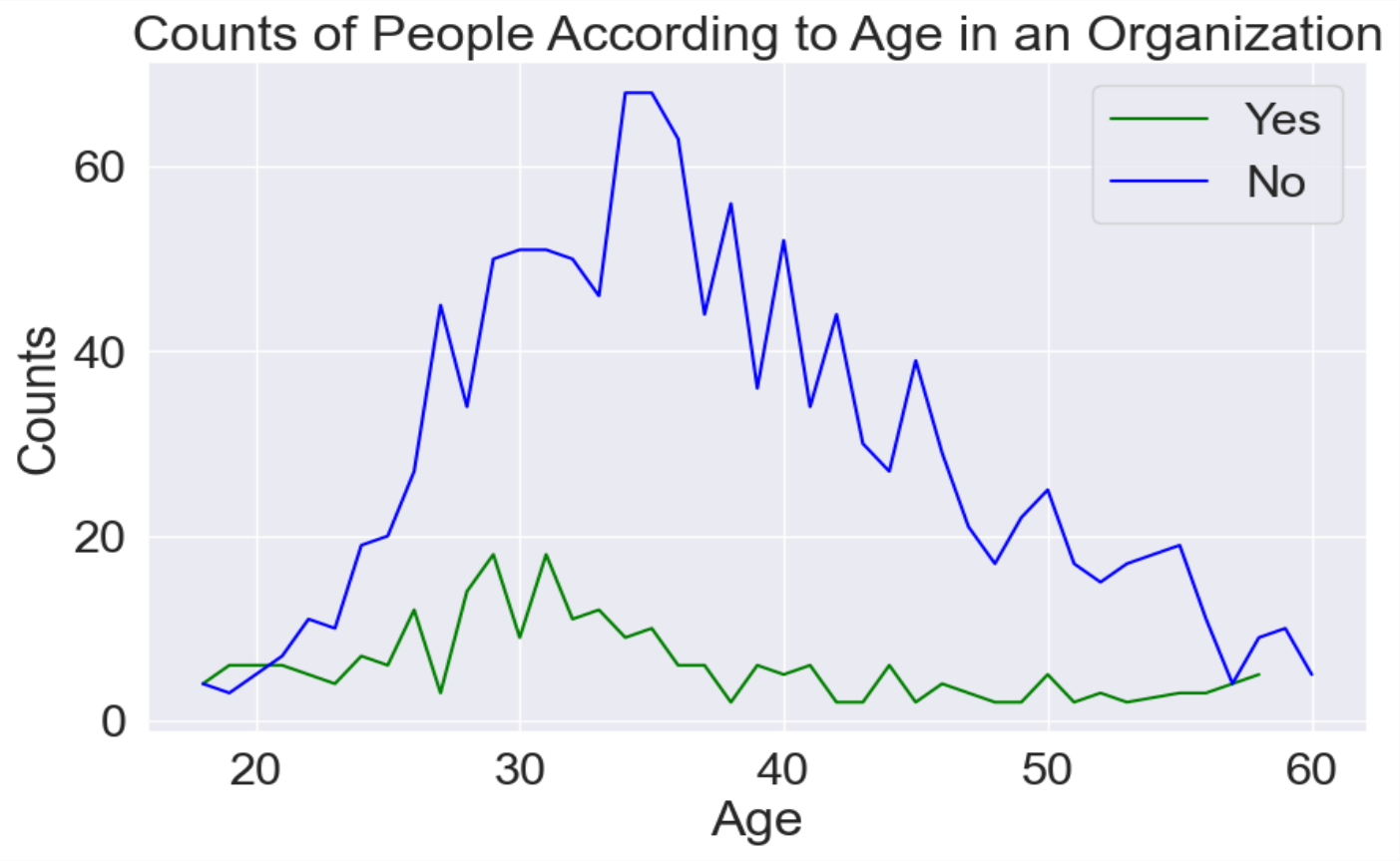
DATA VISUALIZATION

There are a couple of questions that we needed to ask and we could answer them through visualizations (charts & graphs)

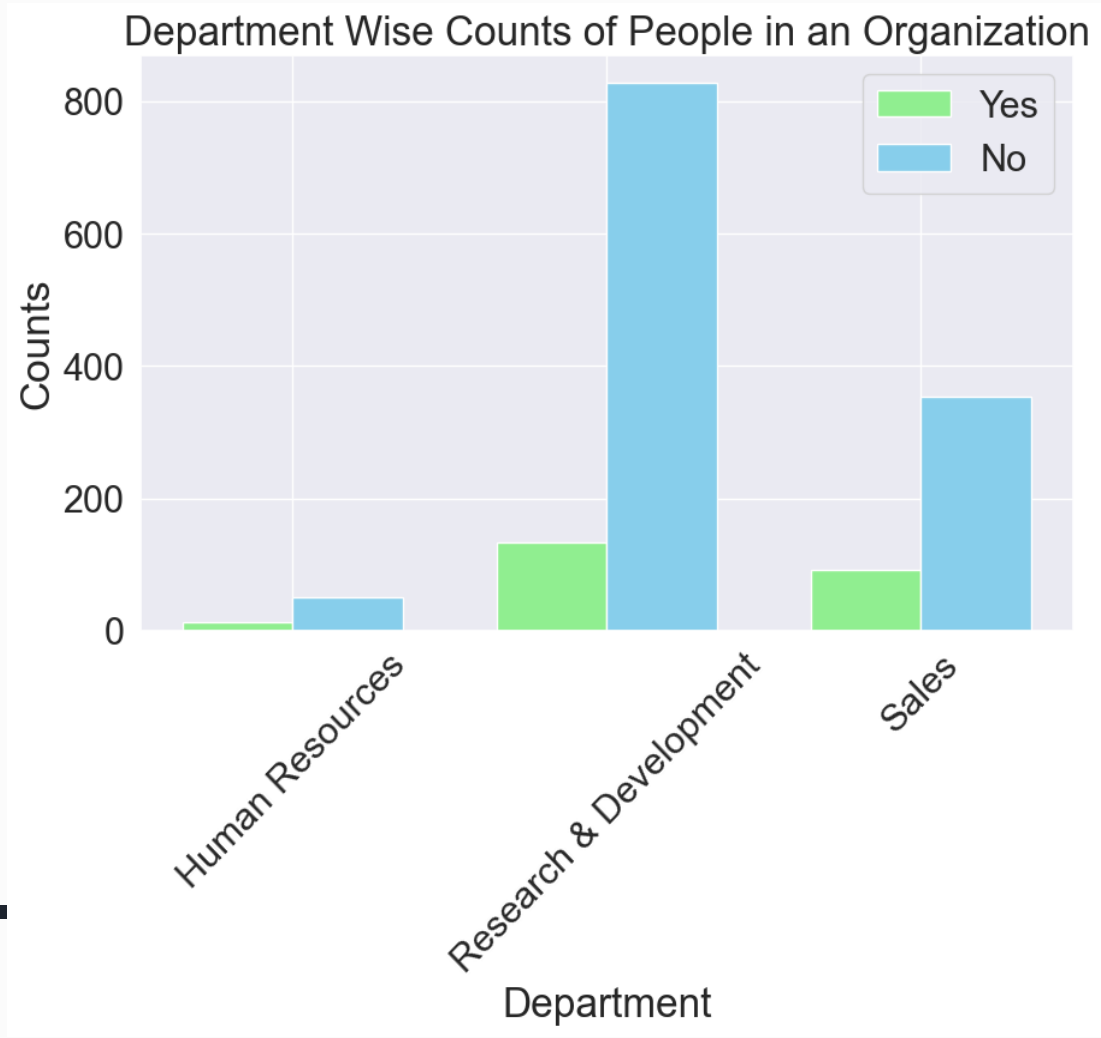
Is the Monthly Income the main factor towards employee attrition?



How is attrition dependent on Age?

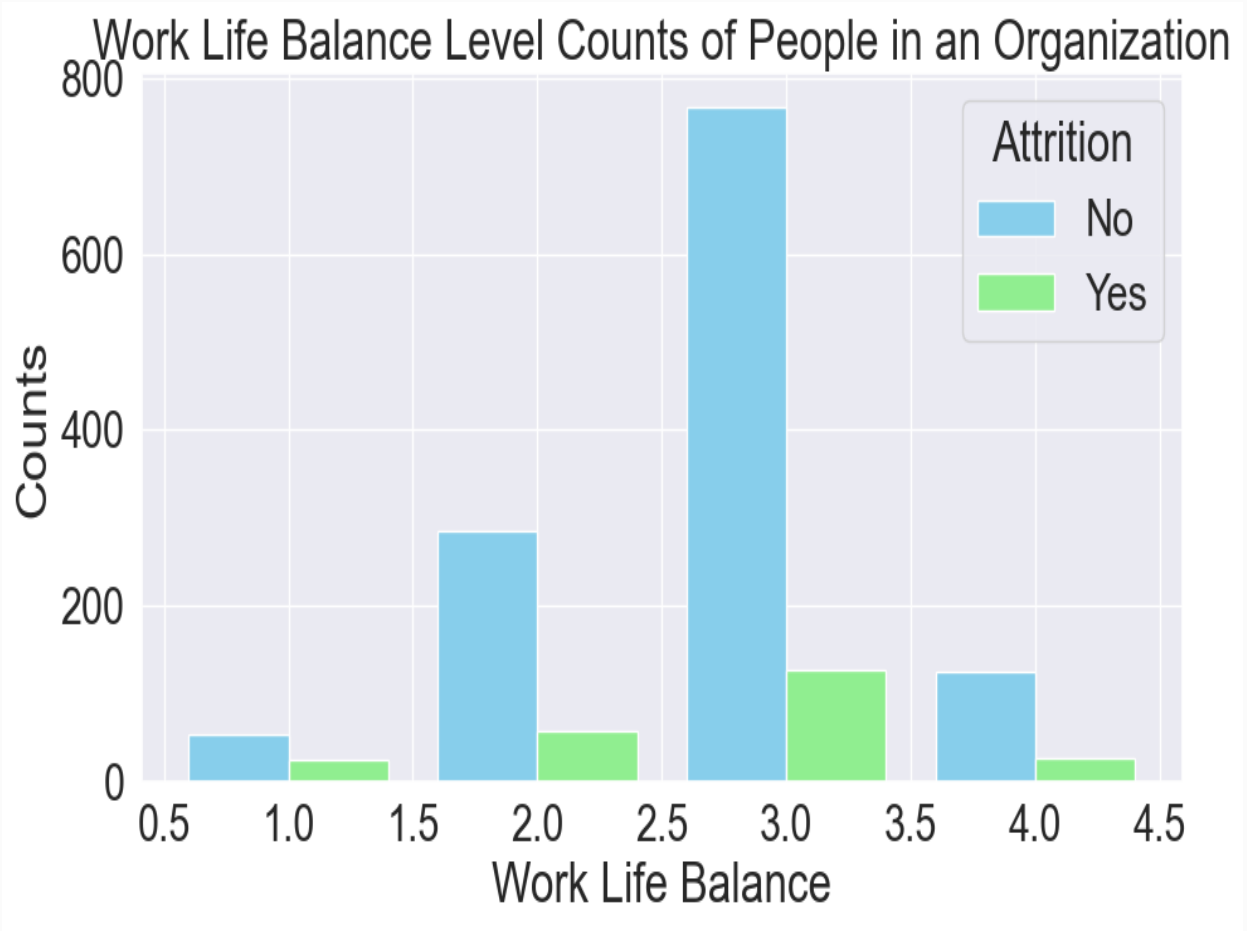


Does the Work department impact attrition?



How does Work Life Balance impact the overall attrition rates?

How does Job Satisfaction impact attrition?



DATA MODELLING

Algorithms used;

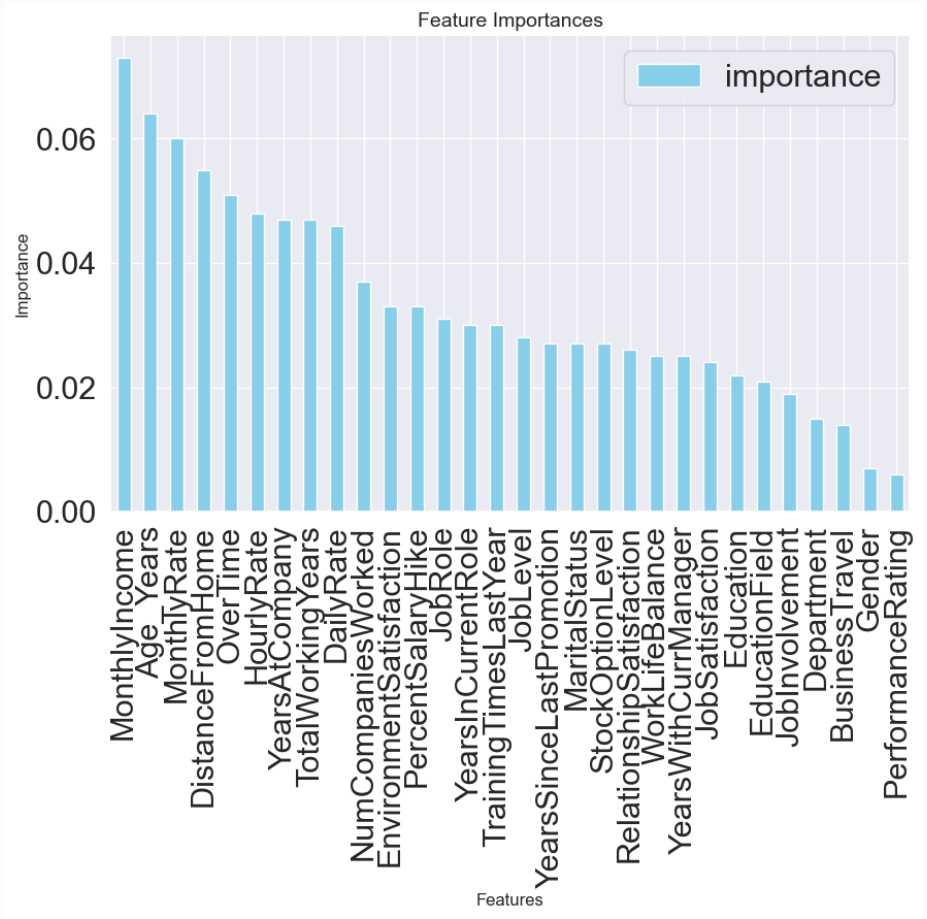
- Logistic Regression
- Decision Tree Classifier
- Random Forest Classifier

Metrics used;

- Recall & Accuracy - focuses on the model's ability to correctly identify positive cases.

RANDOM FOREST CLASSIFIER WAS THE APPROACH THAT WAS MOST ACCURATE WITH 86% ACCURACY WHICH WAS THE BEST OUT OF THE THREE.

It was then used to identify the most important features that would help predict attrition rate.



CONCLUSION

1. The developed model achieved an accuracy of 86%, indicating that it has good predictive power.
2. Factors such as job level, monthly income, and age were found to be important predictors of employee attrition.
3. The company can use the model to identify employees who are at high risk of leaving and take proactive measures to retain them.
4. Possible strategies for improving employee retention include offering competitive compensation and benefits packages, providing opportunities for career growth and development, and fostering a positive work environment.

CONCLUSION

Overall, our analysis highlights the importance of leveraging HR analytics to gain insights into workforce trends and patterns, and ultimately to make strategic decisions that can improve employee retention and reduce the costs associated with employee turnover.