

HR Employee Attrition Analysis

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Goal of the project

- This project focuses on analyzing Employee Attrition using a simulated dataset that contains detailed information about employees, their roles, demographics, and job-related factors.



Project Implementation Overview

Context Definitions:

Attrition

The reduction in employees or customers over time, often due to resignations, or layoffs.

KPI (Key Performance Indicator)

A measurable value tied to strategic goals, used to assess success (ex customer retention rate, revenue growth).

Metric

A general performance measure that tracks specific processes or outcomes

• Tools used:

Python libraries (Pandas, Seaborn, Matplotlib), MySQL and Tableau.

• Business Understanding/Questions:

How can we monitorize the attrition and the outliers and decrease this metric?

• Technical Approach

- Handling Nulls, empty spaces and duplicates values.
- Exploring the data by using descriptive statistics, frequency tables and grouping categories to measure the attrition and the outliers (using SQL queries and high order python functions).



Challenges and Solutions

Business Understanding

Questions posed were relevant to the attrition analysis, but there was some repetition. The bigger challenge faced was identifying the most impactful internal and external factors.

Solution:

- Started with the README file to understand the scope of the project
- Time Management with Trello Website ensuring timely delivery of the 5-day project



Applied the 5 Whys technique

Crucial to understand the root cause

Project focused on Attrition

Key to identifying its impact on a specified company.

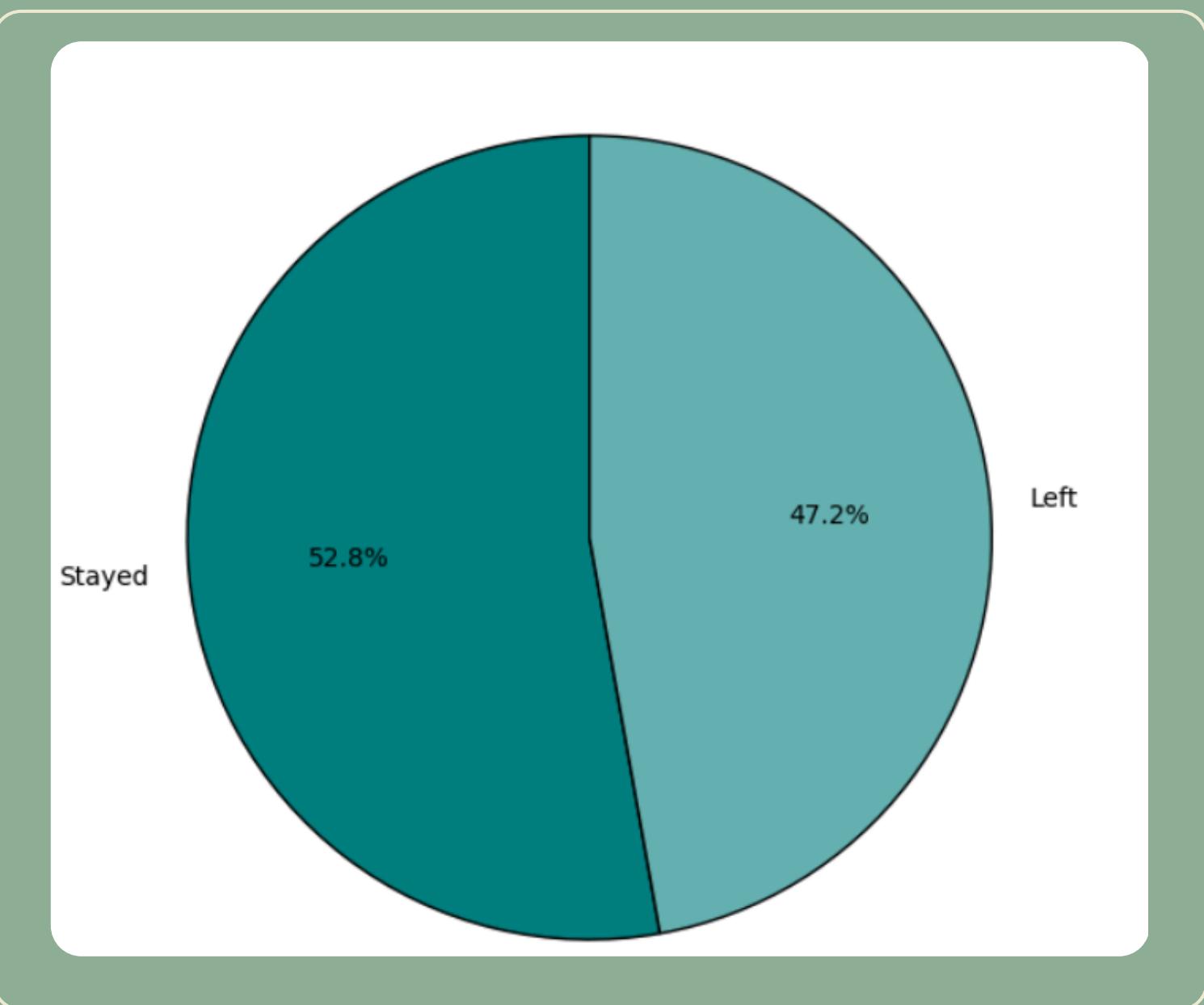
Solution to resolve the attrition

Central question solved. Main objective was not only the solution but methods used to track and prevent the problem before happened.

Employee Attrition Analysis

Summary

- Explored the proportion of attrition to measure the proportion of employees staying vs leaving the company (converted for percentage)
- Data Exploration done, after checking and handling the null values, duplicates and removing the empty spaces (0 values found)

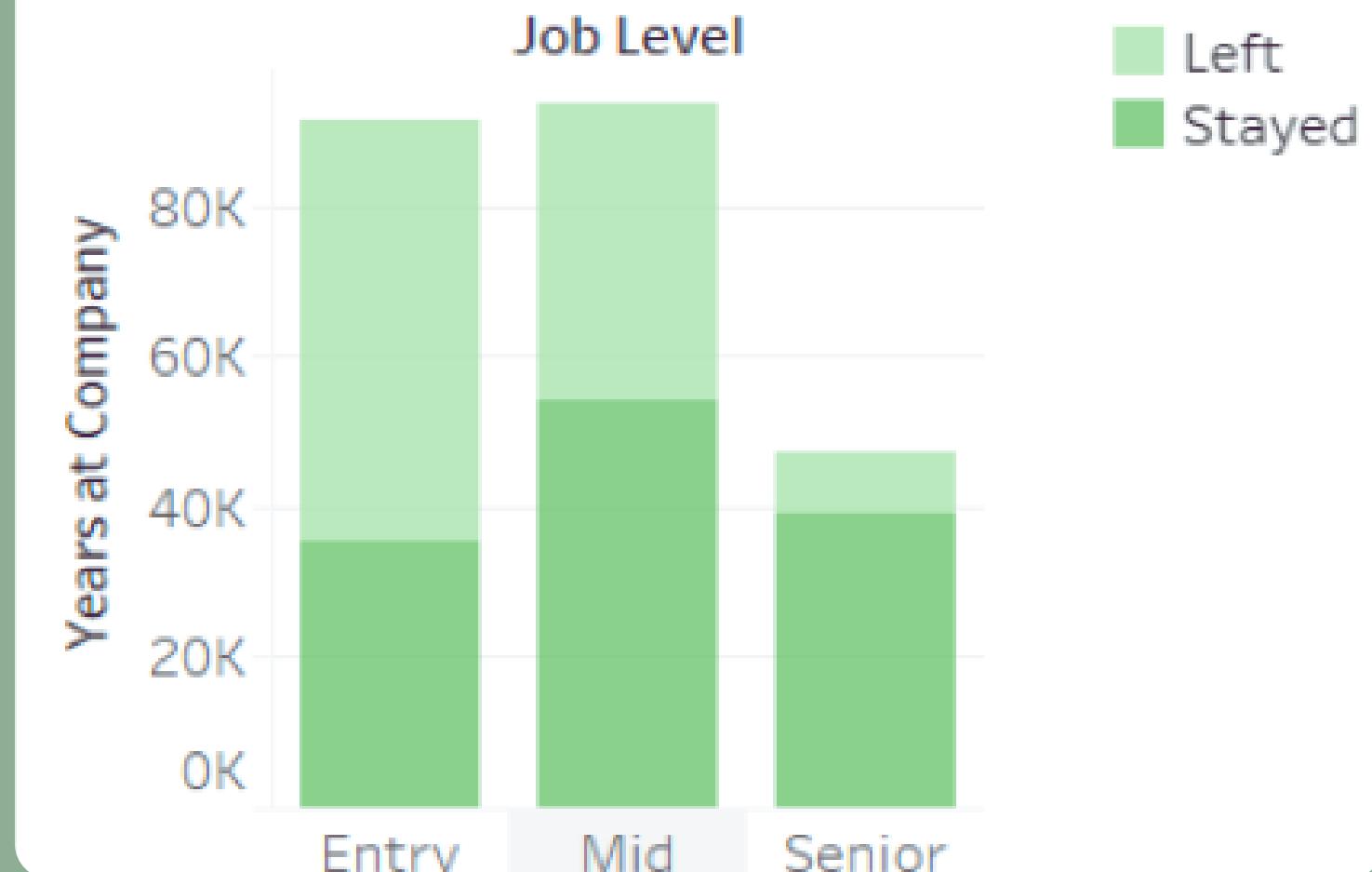


Employee Attrition Analysis

Attrition by Job level

- After concluding that we are having an attrition of 47%, we measured the attrition by job level vs Years at Company.
- The job level is divided into 3 categories: entry level, Mid level and Senior Level (ordinal data).

Attrition by Job Level vs Years at Company



Employee Attrition Analysis

Attrition by Job Satisfaction

- The Job Satisfaction Column is divided into 4 scores: Very high, High, Medium and Low Satisfaction score (used to measure the work satisfaction of the employee)
- All categories shows that we have +50% people leaving the company (and we have more people leaving on the very high category despite the score given by the employees).



Employee Attrition Analysis:

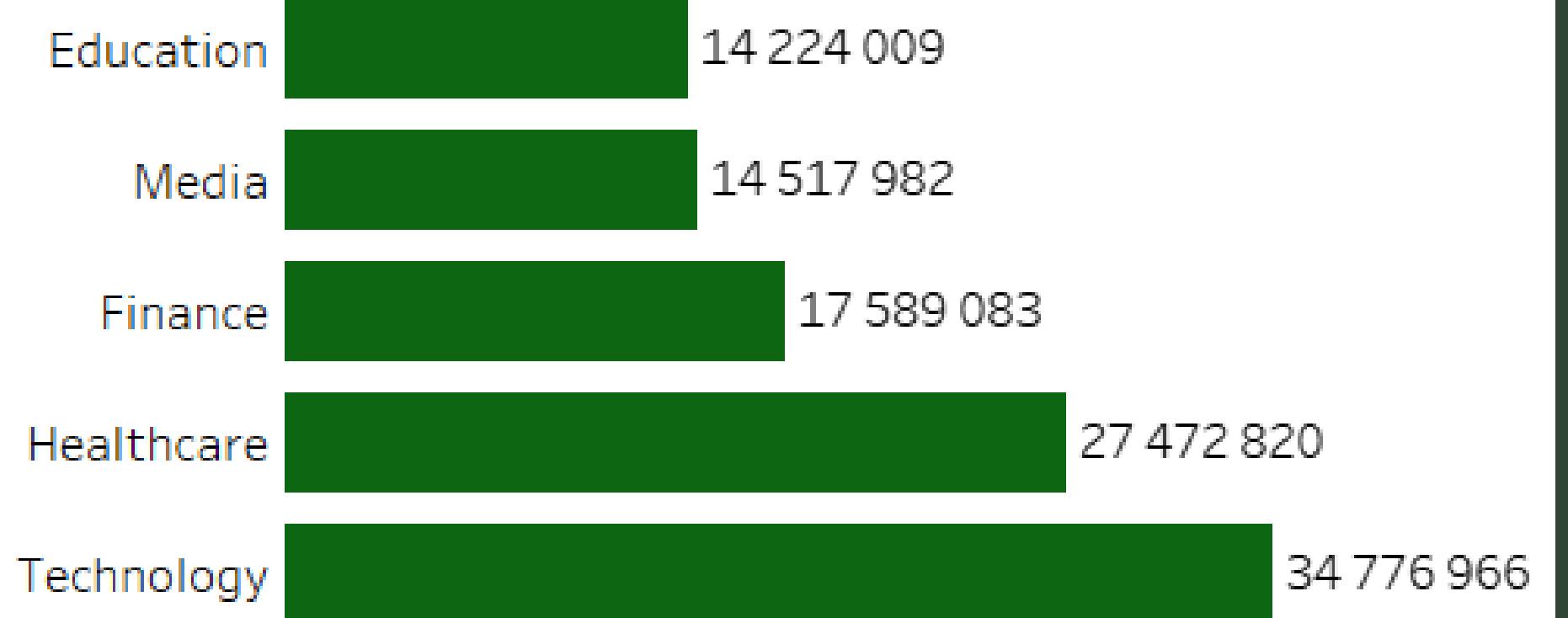
Attrition by Income

The people leaving the company have a lower income compared with the ones who stay (used SQL to measure the proportion).



Revenue by Job Role

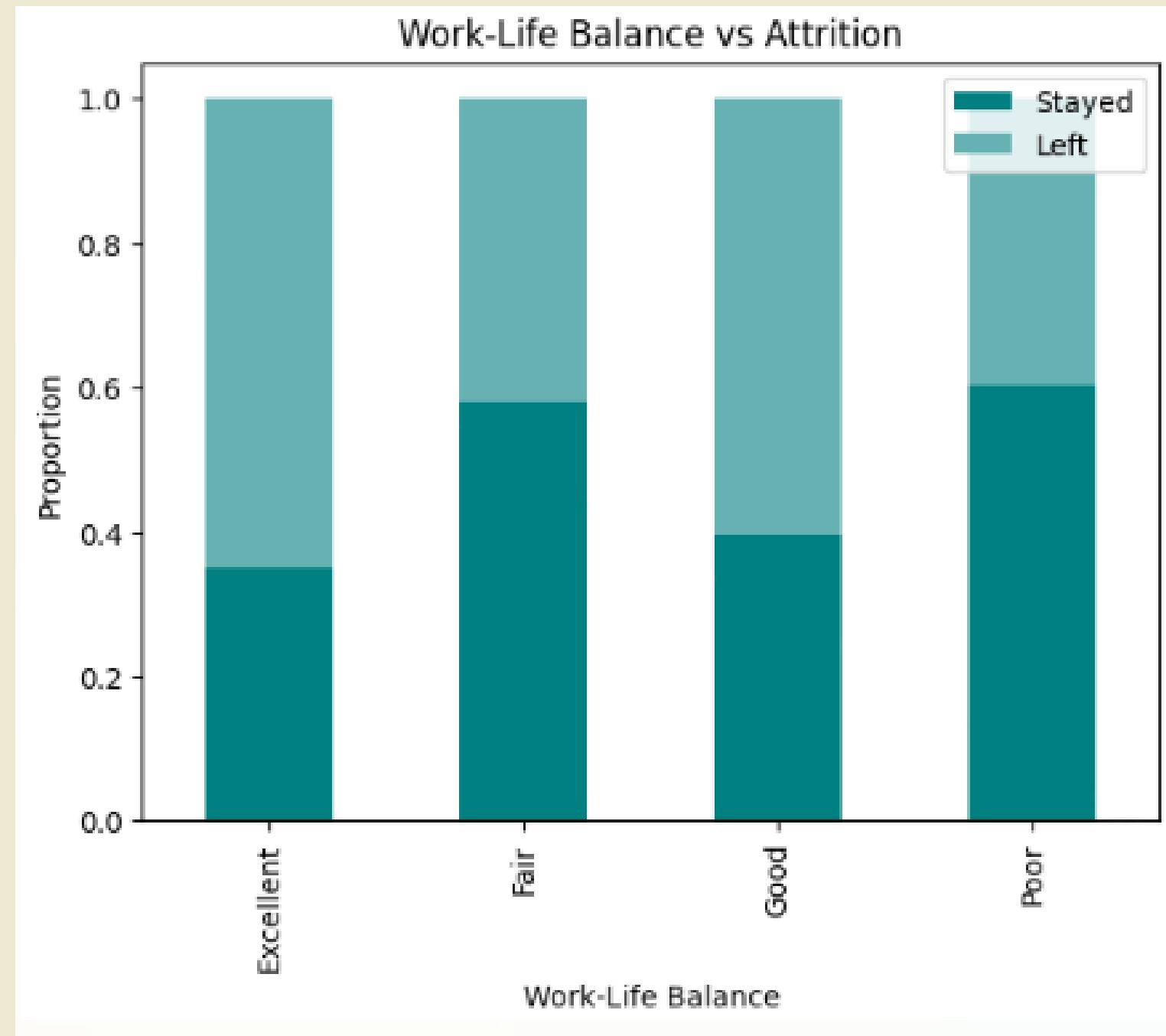
Job Role ≈



From the people leaving the company, the category role with higher attrition are the technology and the healthcare.

Employee Attrition Analysis

Attrition by Work-Life balance



- The Work-Life balance is a external factor but on this context is related with our analysis.
- We can measure if the proportions of employees that left the company were related with the work-life balance.
- Employees that are staying have lower score classifications than the ones that are leaving (with a good/excellent work-life balance)

KPI Employee Engagement Score

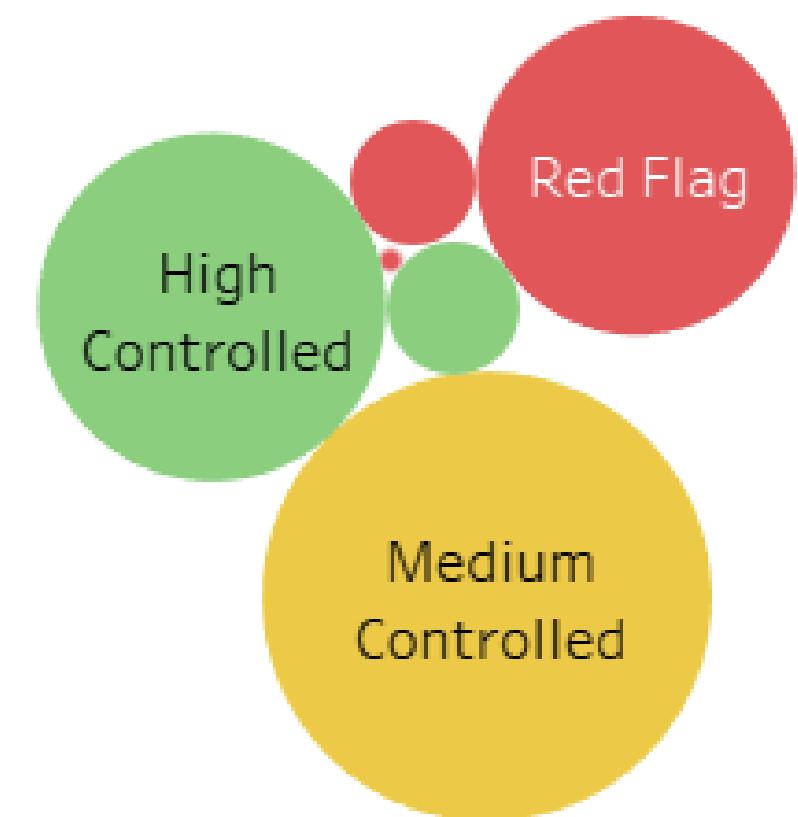
Created a new KPI to control a possible attrition.

The KPI takes on consideration 4 metrics with scores between 1-4.

Scores are divided into 3 categories:

- Below 2.5: Red Flag
- Above 2.5 : Medium Controlled
- Above 3 : High Controlled

Engagement score KPI



Final_KPI

- High Controlled
- Medium Controlled
- Red Flag

Red Flag

All scores below 4 will give a red flag to the business.

Job Role Attrition

This metric will help the business to identify the outliers, areas of attrition (ex. if entry level or on the healthcare/Tecnology sectors)

Solution

Business will open a Retention Process to be reviewed (to avoid attrition).

Conclusion

Key Insights

The analysis done showed that despite we have more people staying, we have a difference of 5% compared with the people leaving.

Main focus are the entry level and medium level, that are the level with more rotation.

The monthly income are higher on the technology and healthcare category and we have more people leaving on those.

KPI engagement score will help on decreasing attrition since will flag the employees with a lower score on work-life balance. monthly income, leadership opportunities and employee recognition.



Thank You



Tableau Dashboard

HR Analytics Attrition | Tableau Public