

DDS Analytics Talent Management

Attrition Exploratory Data Analysis

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Predicting Attrition

DDS Analytics

DDSAalytics is an analytics company that specializes in talent management solutions for Fortune 1000 companies. Talent management is defined as the iterative process of developing and retaining employees.

Objective

To gain a competitive edge over its competition, DDSAnalytics is planning to leverage data science for talent management. The executive leadership has identified predicting employee turnover as its first application of data science for talent management.

Requirement

Before the business green lights the project, they have tasked our data science team to conduct an analysis of existing employee data. Identify the top three factors that contribute to turnover.

Three Leading Attrition Factors



Leading Attrition Factors



Money

Show Me The \$\$\$

- Income
- Stock Options

Age & Tenure

Time & Experience

- Age
- Years of Service
- Years at Company
- Years in Current Role
- Years with Manager
- Job Level
- Marital Status

Intrinsic Factors

The Human Factor

- Job Involvement
- Job Satisfaction
- Environmental Satisfaction
- Overtime

Factor 1: Money



Money Related Factors

People leaving the company have lower salary.

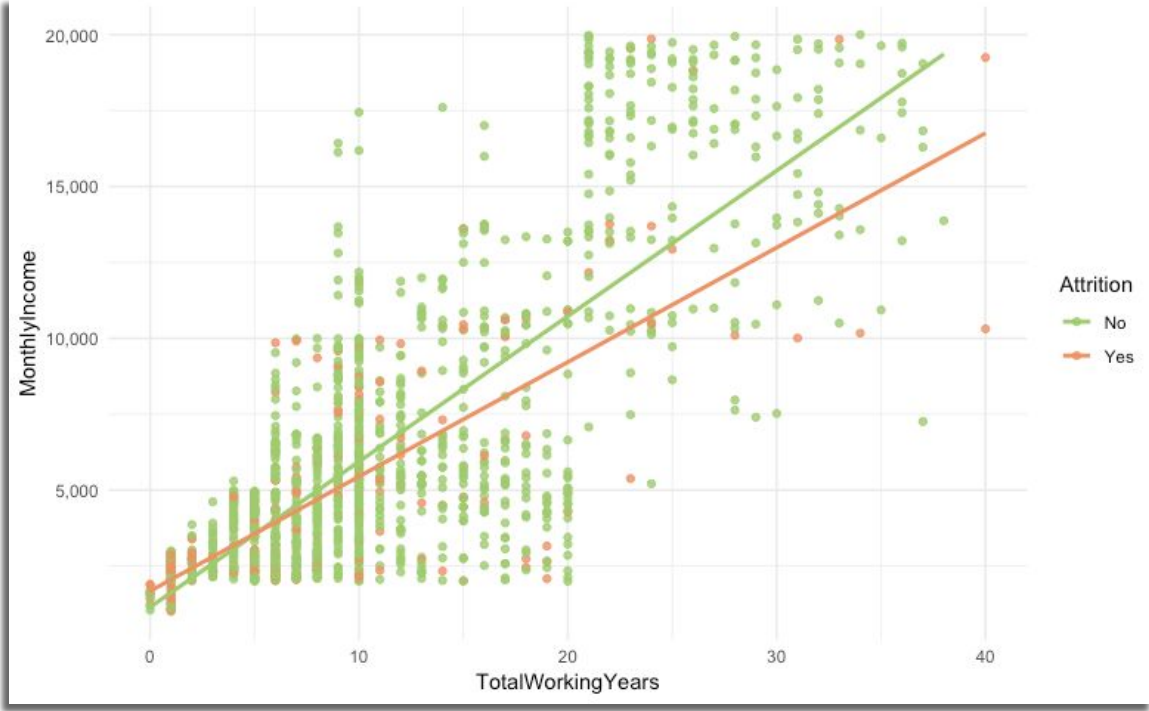
Monthly Income



Money Related Factors

Controlling for
“Working Years”,
people leaving the
company still have
lower salary

Experience and Income

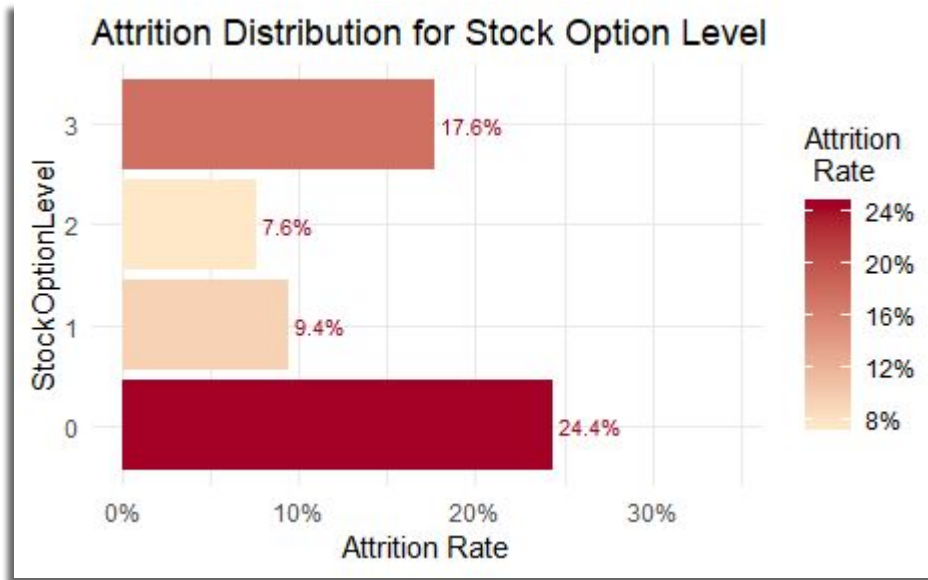


Stock Options

Money Related Factors

People leaving the company have lower stock options (as expected).

Surprising to see employees with Stock Option level = 3 leaving at a higher rate.

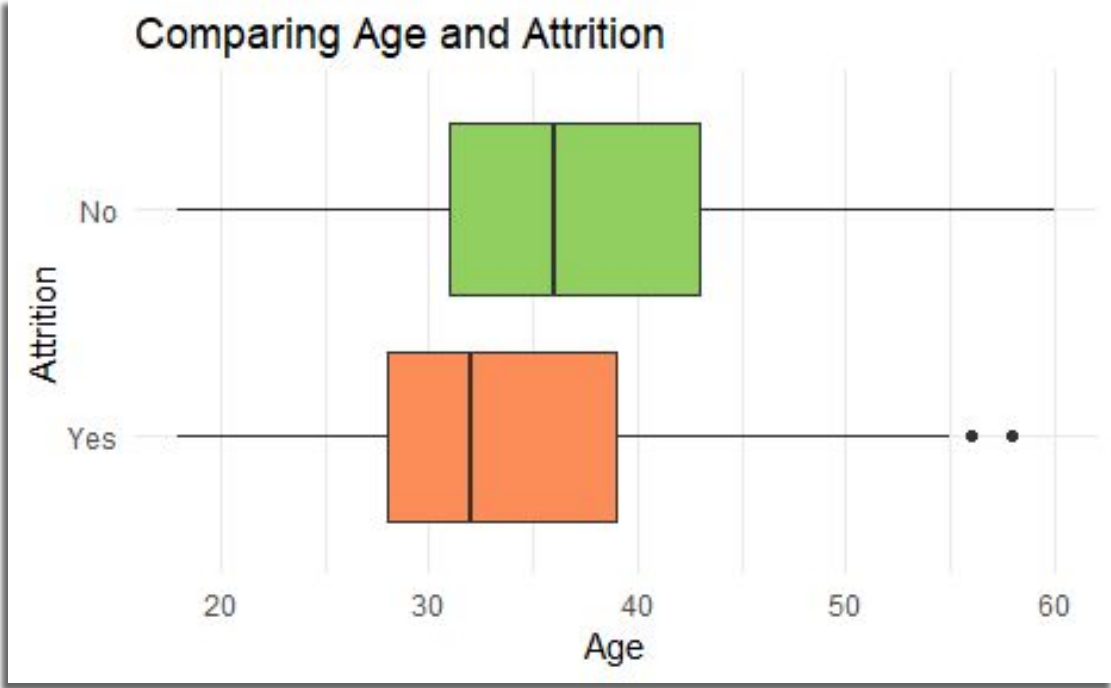


Factor 2: Age and Tenure



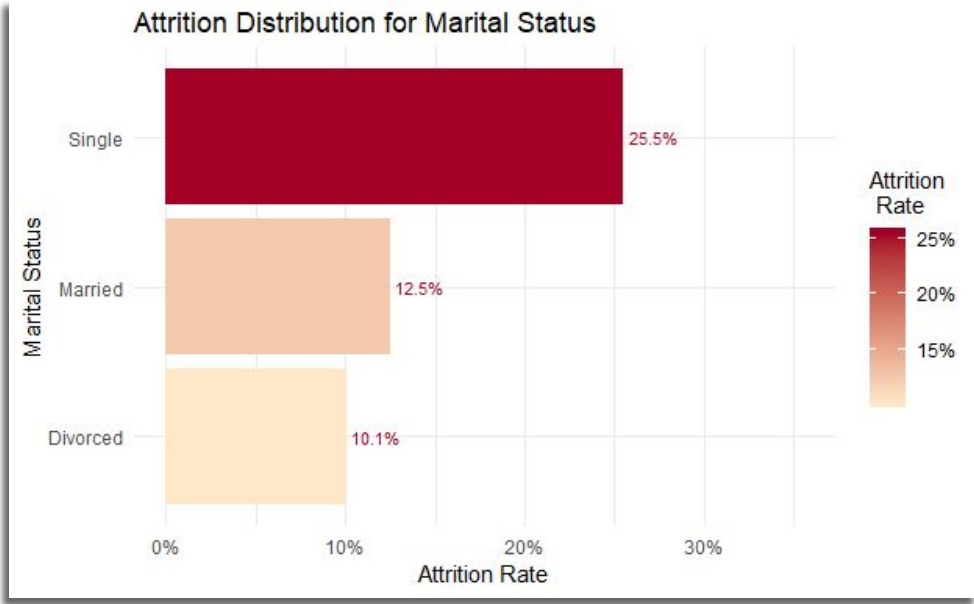
Younger people
tend to leave the
company.

Age and Attrition



Single employees have greater flexibility which could contribute to higher attrition.

Marital Status

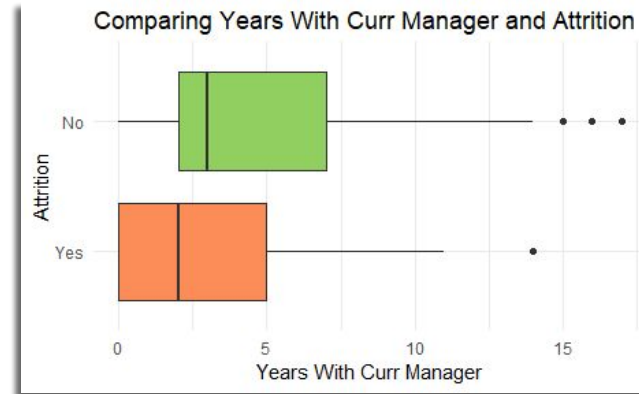
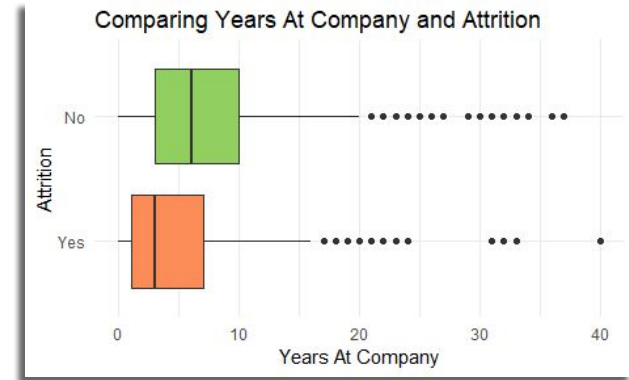
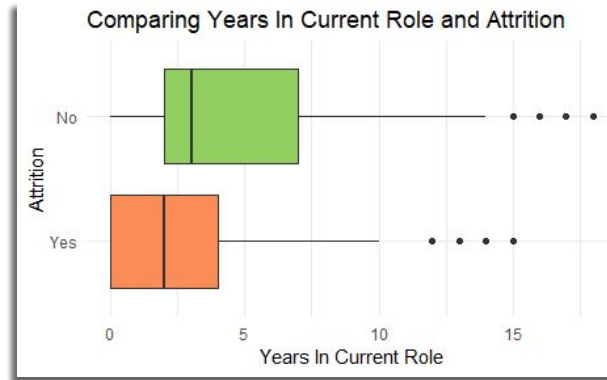


Age and Tenure

People with lower tenure have higher attrition.

This is also true when considering Current Manager and the Current Role

Years at Company



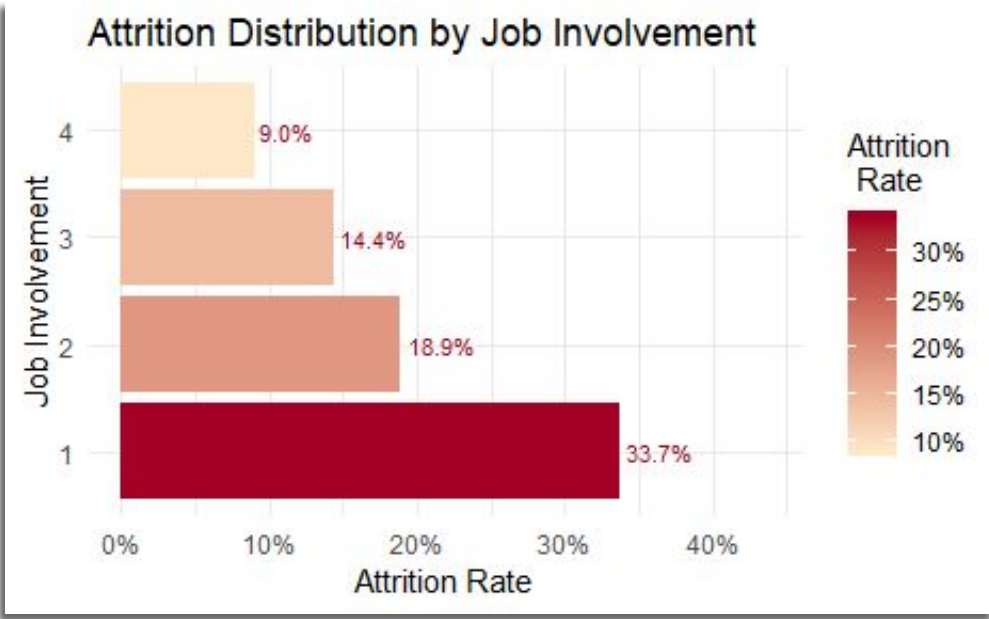
Factor 3: Intrinsic



Intrinsic Factors

Employees who are less involved in their jobs are more likely to leave.

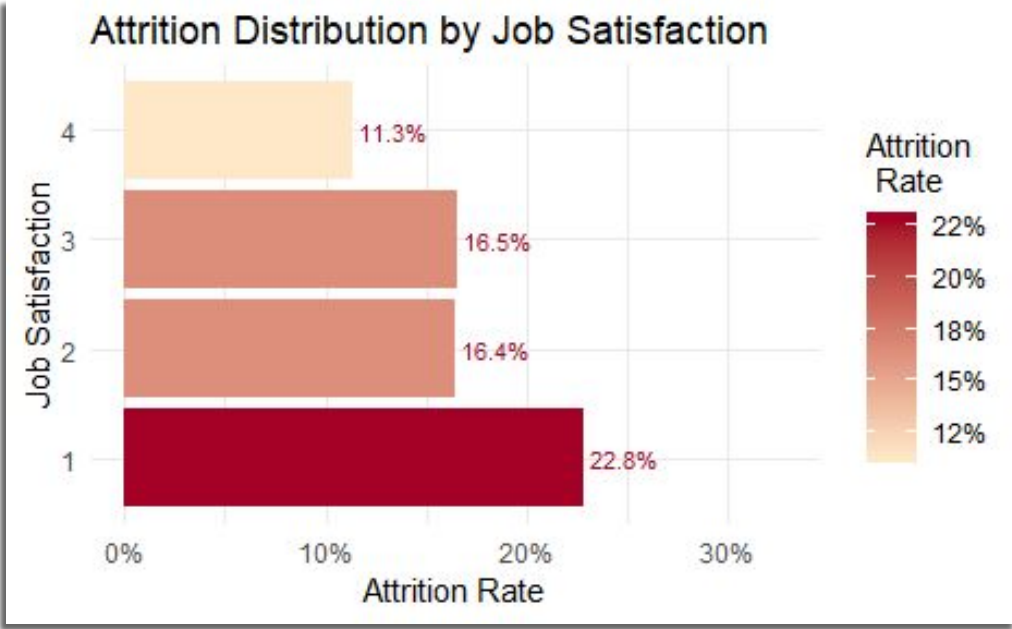
Job Involvement



Intrinsic Factors

No surprises
here... more
attrition for less
satisfied
employees

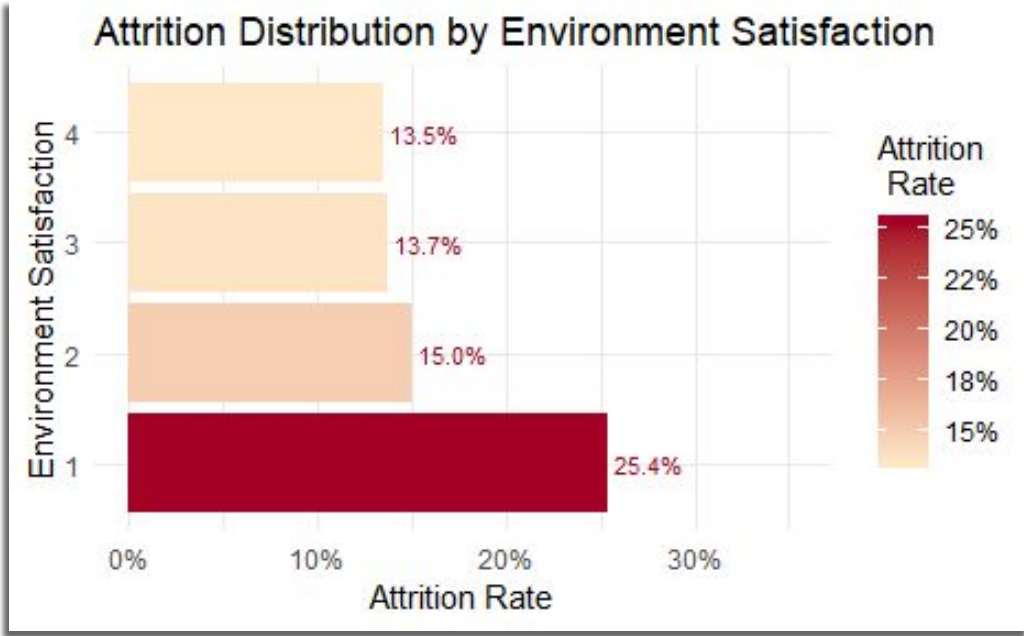
Job Satisfaction



Intrinsic Factors

Environment Satisfaction

Again, employees who are less satisfied with the environment are more likely to leave.

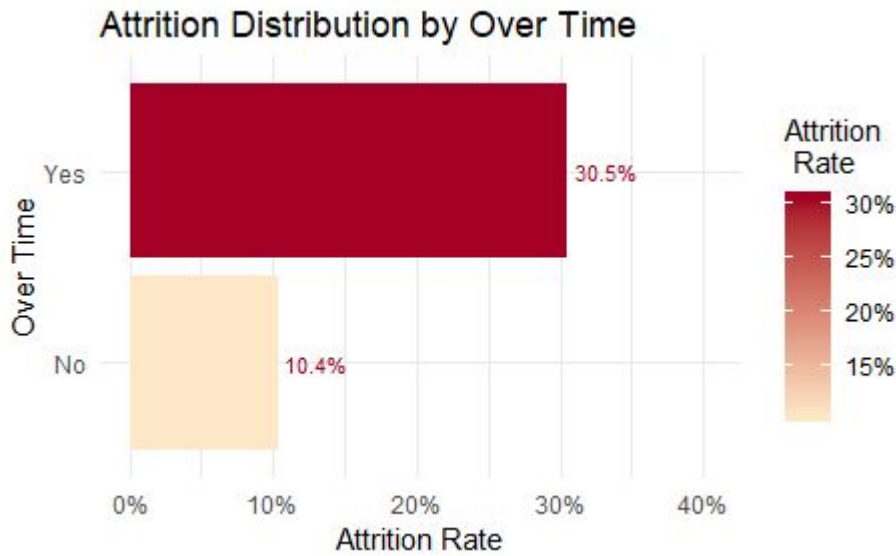


Intrinsic Factors

Employees who do overtime leave at a rate that is 3X higher than those who don't do overtime

Burnout could be a factor

Overtime



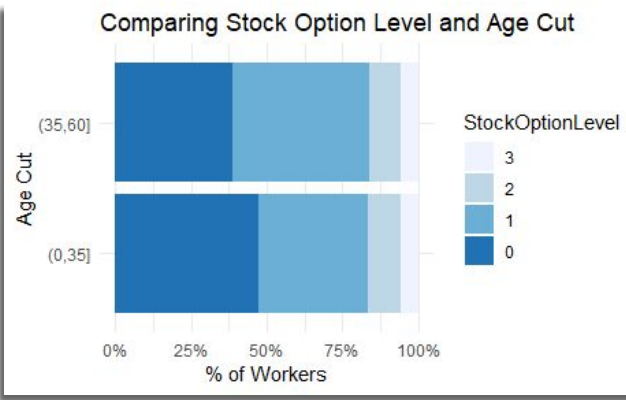
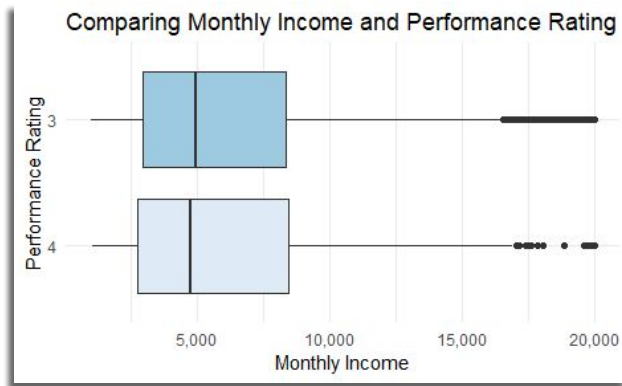
Summary

- Factor 1: Money
 - Lower income leads to higher attrition
- Factor 2: Age
 - Younger employees are more flexible (single) and less likely to be tied to a job
- Factor 3: Intrinsic
 - Low job involvement, satisfaction, and overtime leads to higher attrition



*I
QUIT!!*

Action Plan



- Money Related:
 - Recommend skewing compensation towards higher performing employees
- Age and Tenure related
 - Recommend giving long vesting period stocks to critical young employees
 - Dig deeper into why employees with Stock level = 3 are leaving (is it competitive?)
- Intrinsic Factors
 - Recommend developing mentoring programs to increase job involvement.
 - Stress and burnout mitigation program for overtime employees

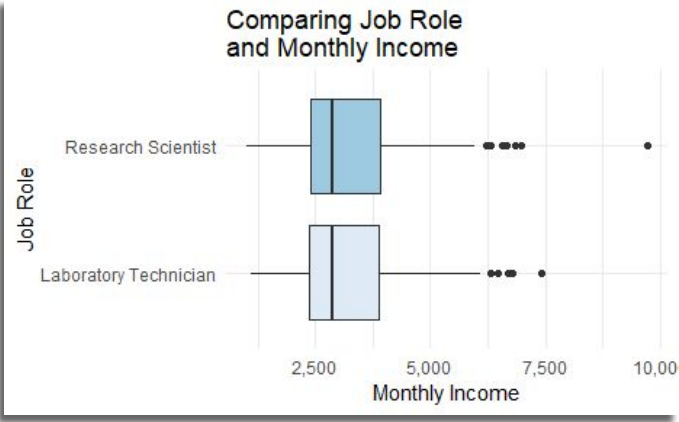
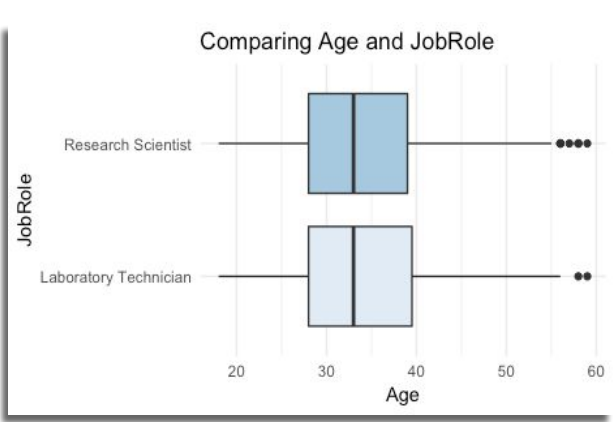
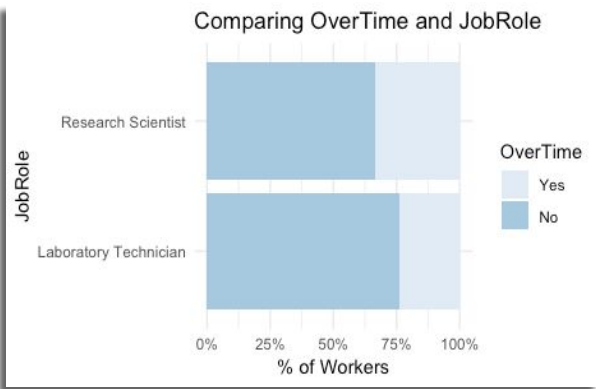
Job Specific Insights

Role Specific Insights

Equal in all aspects - Age, Job Level, Salary, Travel, Overtime, etc.

Lab technicians had 50% more chance of leaving

Lab Technician vs. Research Scientist



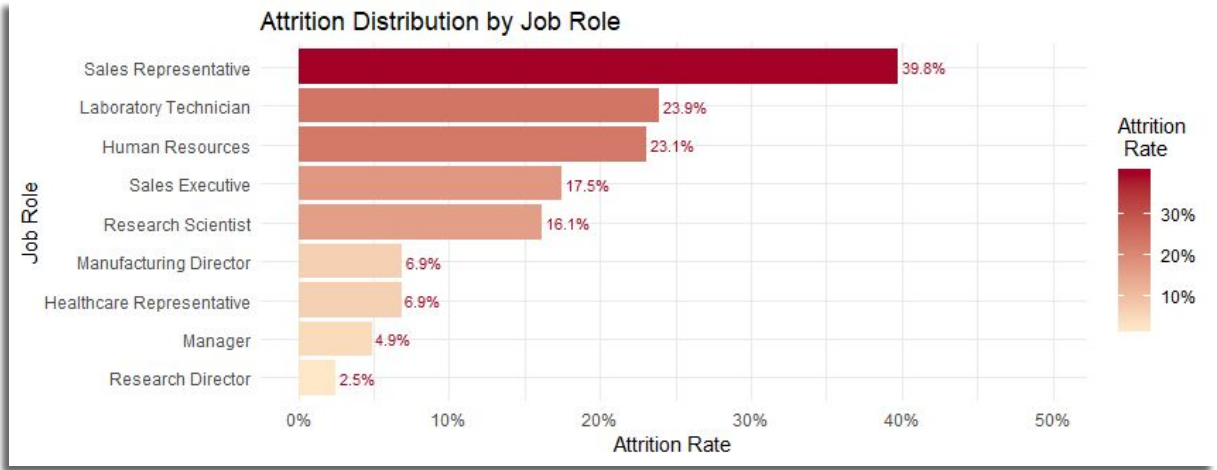
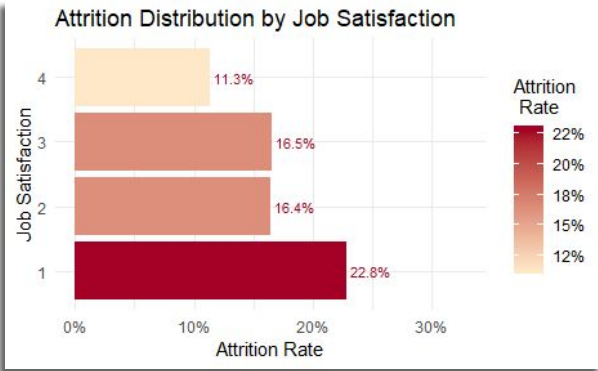
Role Specific Insights

Least satisfied in general

Why? Explore

- People Aspect
- Environment

Human Resources



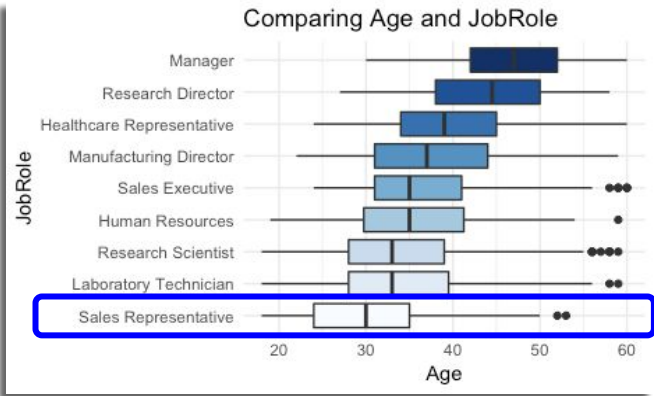
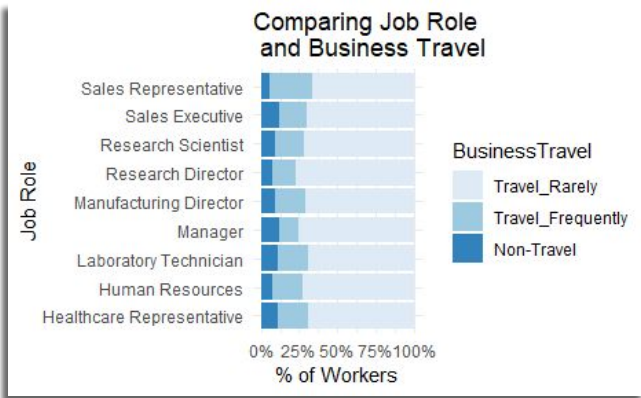
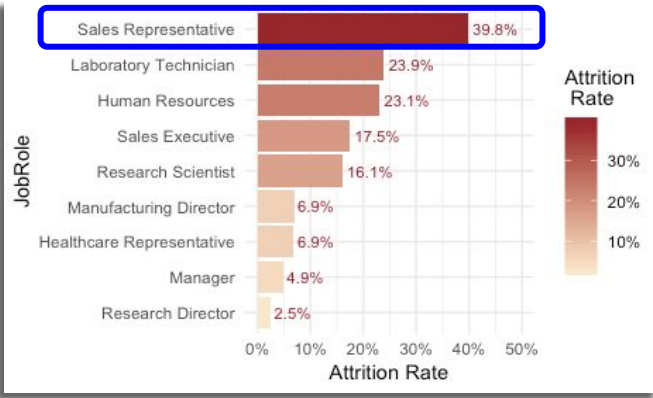
Role Specific Insights

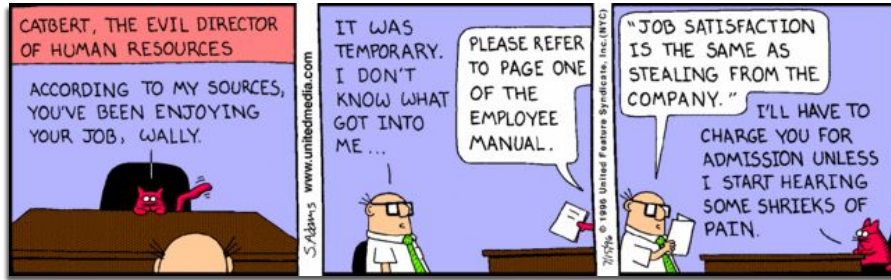
Highest Attrition

Not necessarily
related to travel

Possibly related to
younger population

Sales Reps





Summary

- Lab Technician vs. Research Scientist
 - No obvious reason for higher attrition. More root cause analysis needed.
- Human Resources have high attrition
 - Likely correlated to lower job satisfaction
- Sales Rep have highest attrition
 - Likely correlated to younger age distribution.

Questions

