



Attrition at Budweiser


By Chad Madding and Jackson Au

Problem

Attrition costs are expensive!

Each year companies lose money due to employee turnover

- Productivity costs
 - Recruitment costs
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Objective: Identify which factors
most likely contributed to
employee attrition

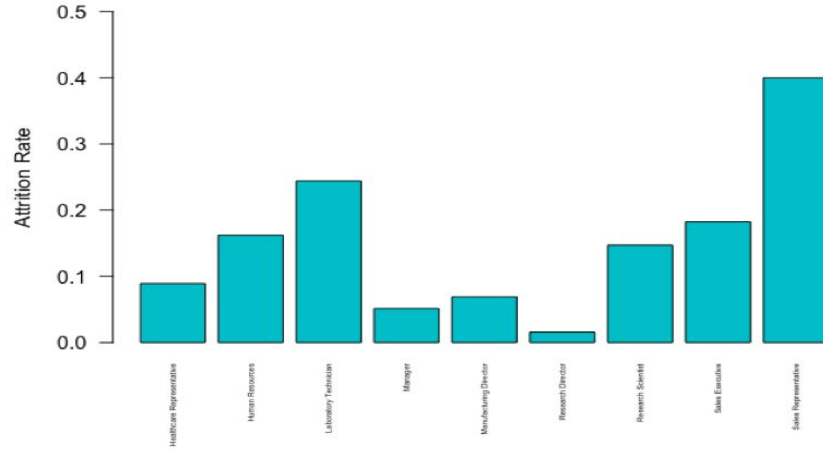
Exploratory Data Analysis

- 1170 employee observations
- 1 response variable (Attrition = YES | NO)
- 31 possible explanatory variables

```
Age
Attrition
BusinessTravel

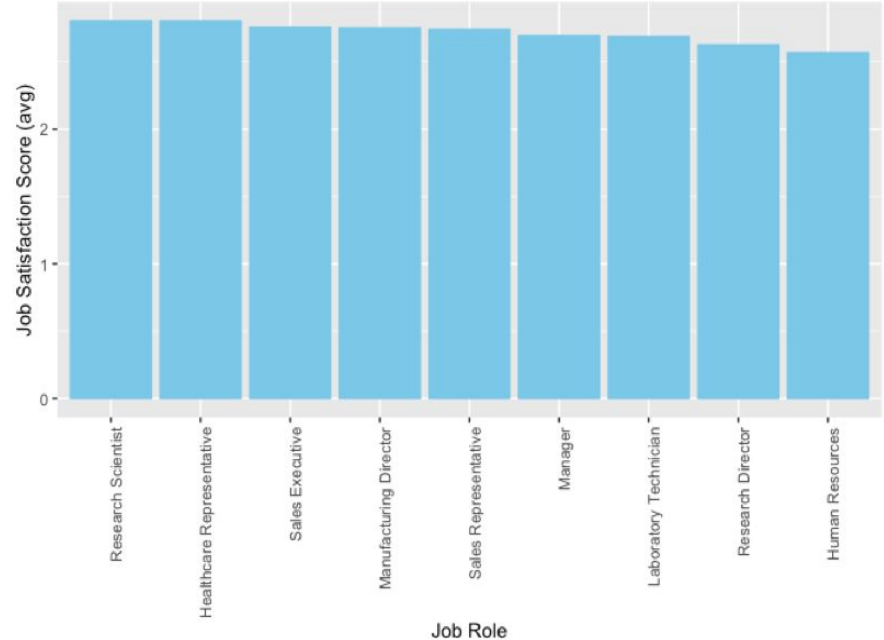
DailyRate
Department
DistanceFromHome
Education
EducationField
EnvironmentSatisfaction
Gender
HourlyRate
JobInvolvement
JobLevel
JobRole
JobSatisfaction
MaritalStatus
MonthlyIncome
MonthlyRate
NumCompaniesWorked
OverTime
PercentSalaryHike
PerformanceRating
RelationshipSatisfaction
StockOptionLevel
TotalWorkingYears
TrainingTimesLastYear
WorkLifeBalance
YearsAtCompany
YearsInCurrentRole
YearsSinceLastPromotion
YearsWithCurrManager
Rand
```

Attrition Rates in Job Roles



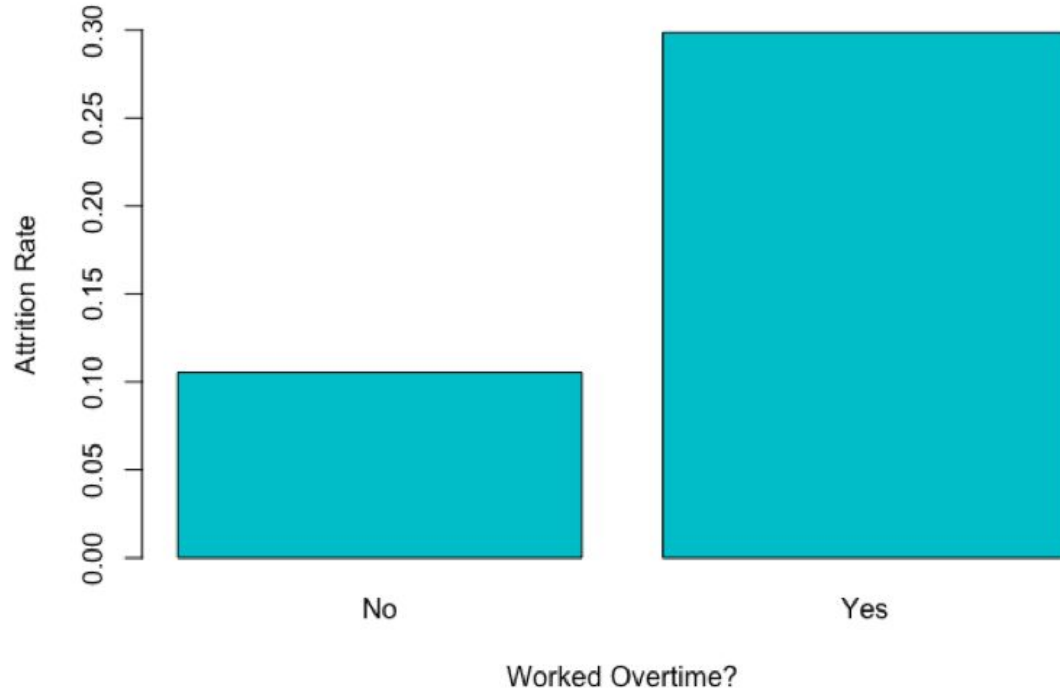
Top Attrition Rates

1. Sales Representative - 40%
2. Laboratory Technician - 24%
3. Sales Executive - 18%
4. Human Resources - 16%



Here we can see that sales representatives, human resources workers, laboratory technicians and sales executive have more attrition than other roles given in the data set.

Attrition Rates in Overtime

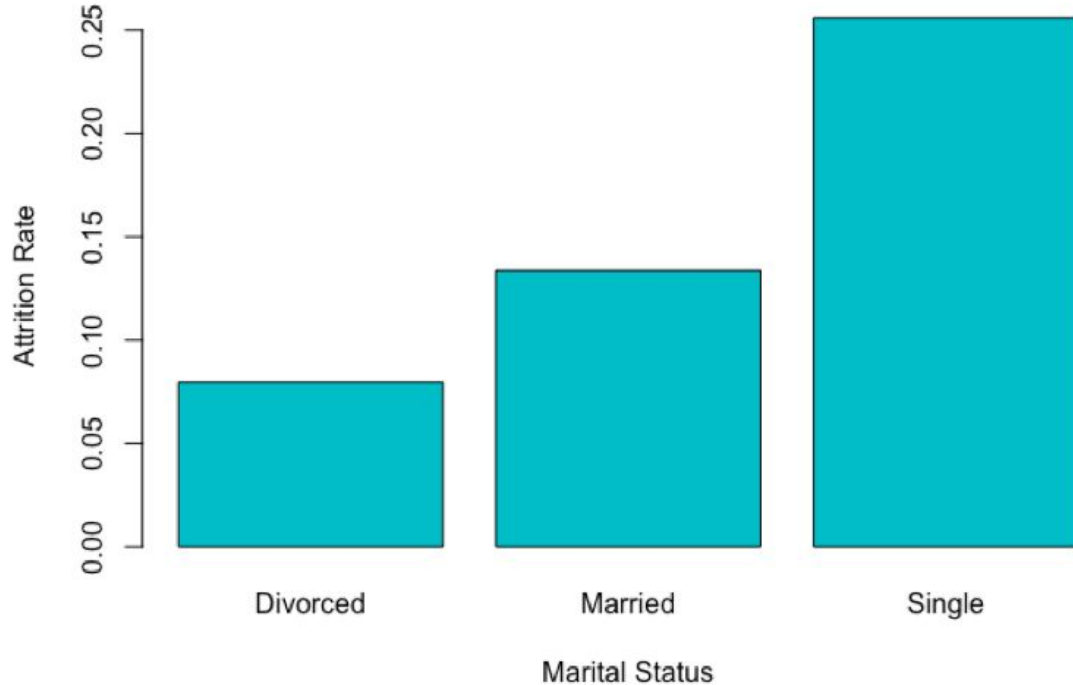


Attrition Rates

1. No - 11%
2. Yes - 29%

This chart shows that people who work overtime have more attrition.

Attrition Rates in Marital Status



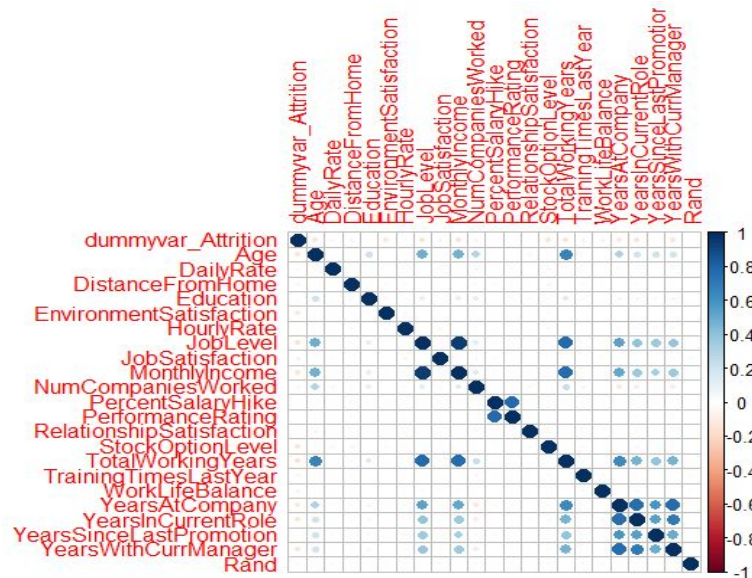
Attrition Rates

1. Single - 26%
2. Married - 13%
3. Divorced - 8%

Single people have more tendency to be subject to attrition.

Correlations in the data

- Lastly, we wanted to identify for possible correlations between explanatory variables
- Turns out there are 7 explanatory variables that are over 0.7 in terms of Pearson's R coefficient!
 - Example: Job Level and Monthly Income





Modeling and Validation time!

Models created

Modeling process involved using the most important explanatory variables to describe the response (Employee Attrition = YES | NO).

- Model 1: 86.3%
- Model 2: 84.7%
- **Model 3: 87.7%**
 - This model performed best with 18 predictors
- Model 4: 86.67%



Recommendations

Target the common predictors across our 4 models:

- Business Travel
- Distance From Home
- Environment Satisfaction
- Job Satisfaction
- Marital Status
- Years Since Last Promotion





Thank you!