



# Employee Attrition Analysis

Presented By: Christine Chen

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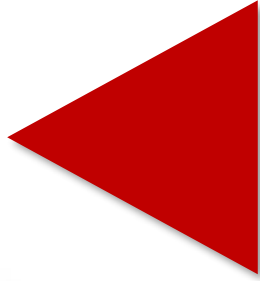
# Business Problems



- Is the attrition rate in the company high? Why?
- Who is most likely to leave the job?
- Which aspects should the company focus on to reduce the employee attrition?



# Exploratory Data Analysis



- Tools:



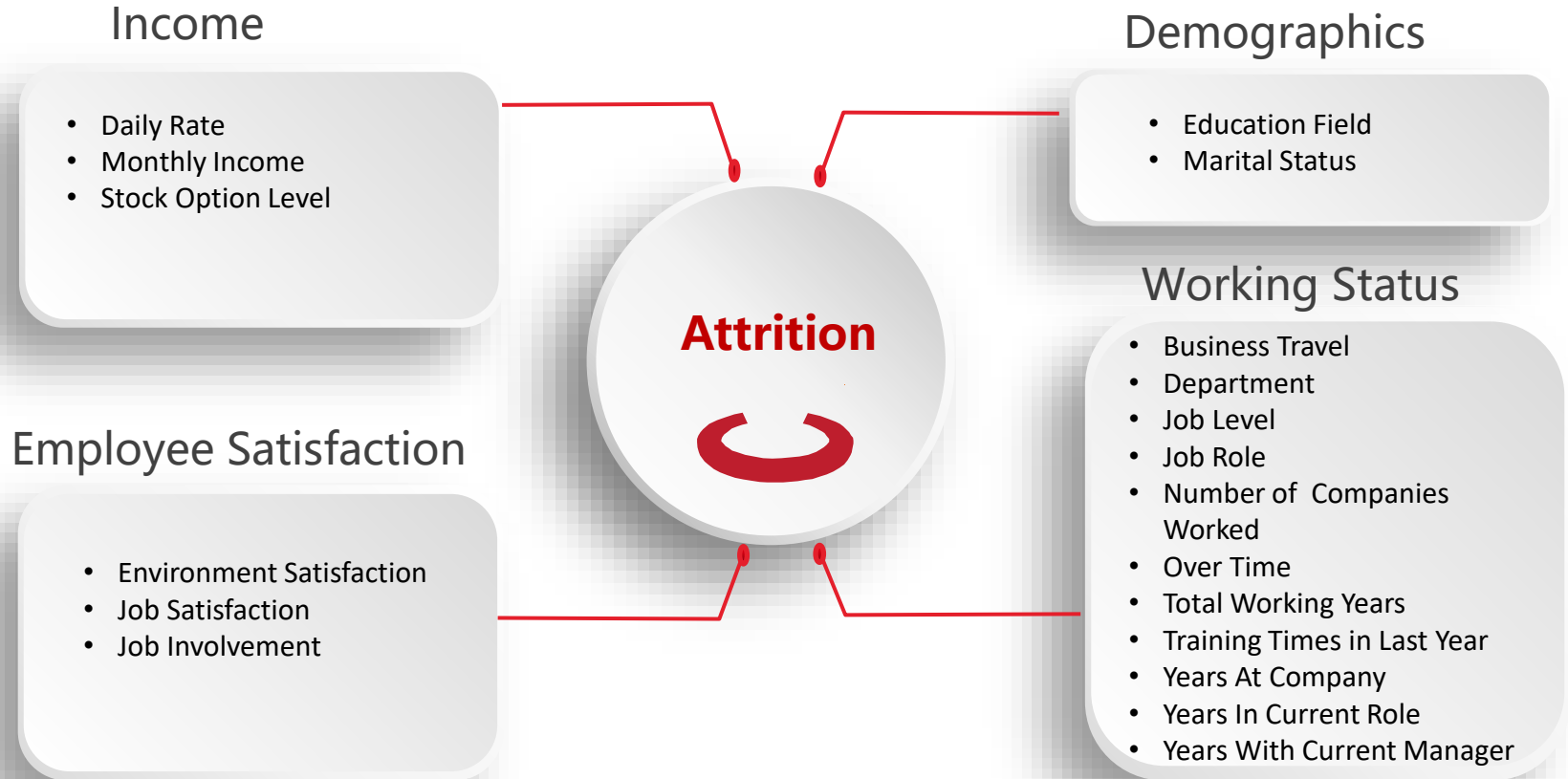
- Methodology: Hypothesis test, Data Visualization

- Data resource:

<https://www.kaggle.com/tomomasta/ibm-hr-attrition-ext-analysis-and-prediction>



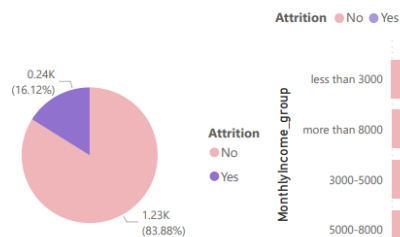
# The factors having relationship with attrition ➤



# Income, education, marital status Vs Attrition

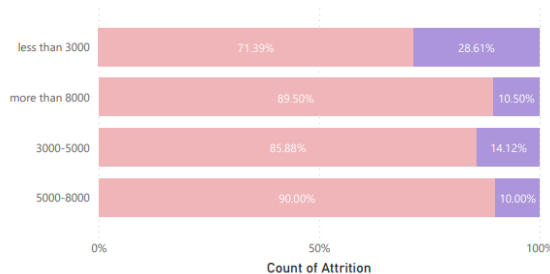


Count of Attrition by Attrition and Attrition



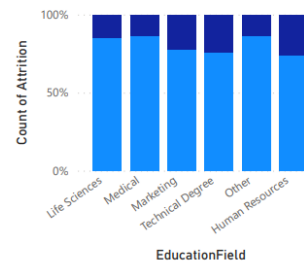
Attrition ● No ● Yes

MonthlyIncome\_group



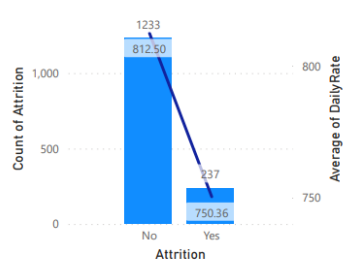
Count of Attrition by EducationField and Attrition

Attrition ● No ● Yes



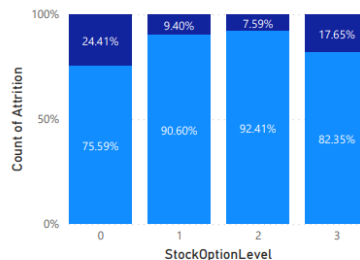
Count of Attrition and Average of DailyRate by Attrition

● Count of Attrition ● Average of DailyRate

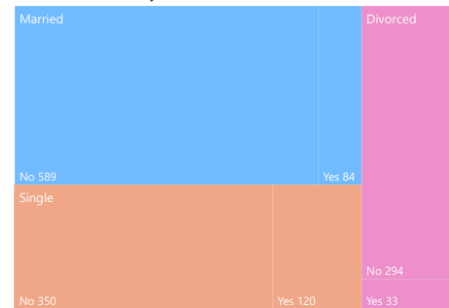


Count of Attrition by StockOptionLevel and Attrition

Attrition ● No ● Yes



Count of Attrition by MaritalStatus and Attrition

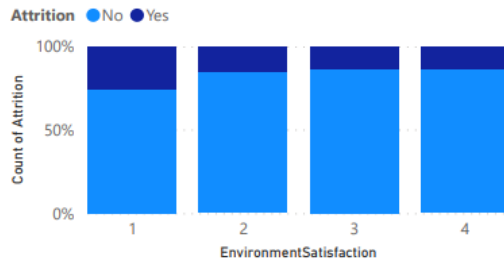


- The attrition rate of the company is high.
- The lower of employee's income, the greater employee attrition.
- The employee who is single is more likely to leave the job.

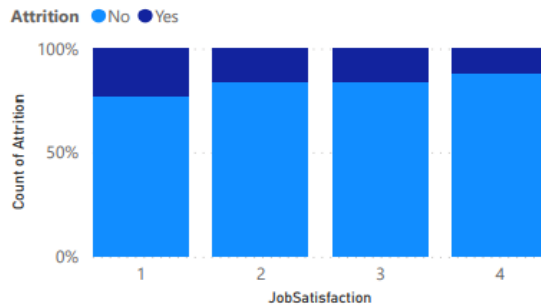
# Employee Satisfaction Vs Attrition

- The lower employee satisfaction, the more likely employee attrition.

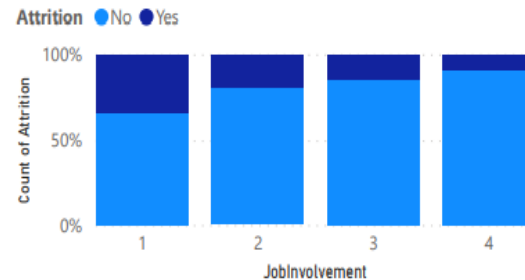
Count of Attrition by EnvironmentSatisfaction and Attrition



Count of Attrition by JobSatisfaction and Attrition



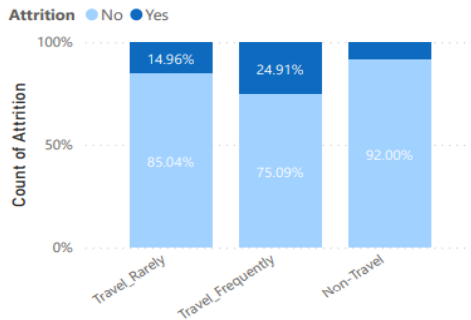
Count of Attrition by JobInvolvement and Attrition



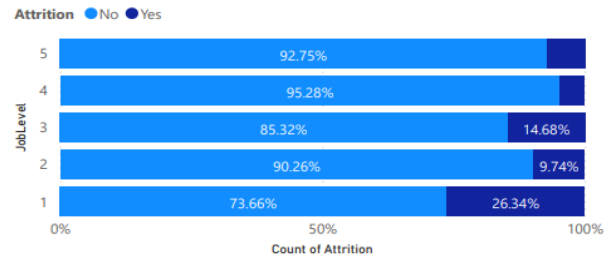
# Working Status Vs Attrition

- Who is more likely to leave the job?
  - Who travels frequently or often works overtime
  - Whose job level is lower
  - Whose position or department is relevant to sales

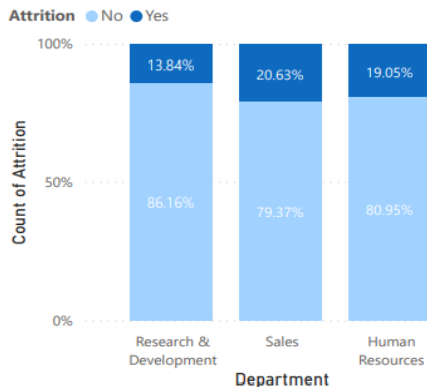
Count of Attrition by BusinessTravel and Attrition



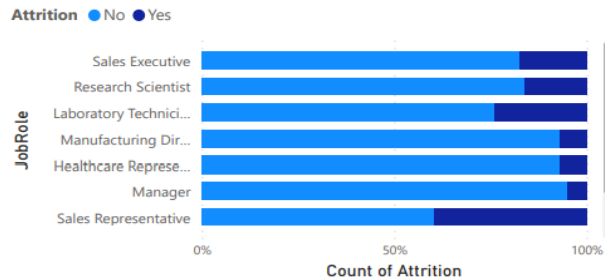
Count of Attrition by JobLevel and Attrition



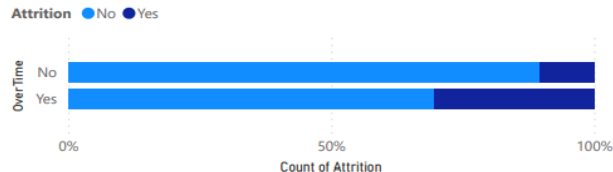
Count of Attrition by Department and Attrition



Count of Attrition by JobRole and Attrition



Count of Attrition by OverTime and Attrition

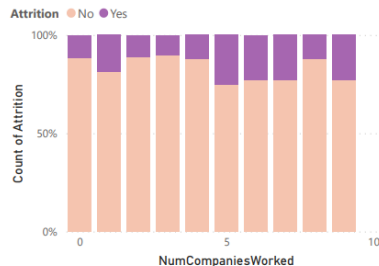




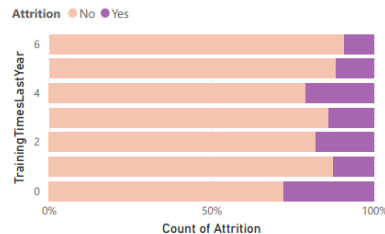
# Working Status Vs Attrition

- Who is more likely to leave the job?
  - Who works in the company in the first 3 years
  - Who starts a new role in the company in the first 3 years
  - Who works in a job role for 7 years because of the difficulty of getting a promotion
  - Who works for more companies

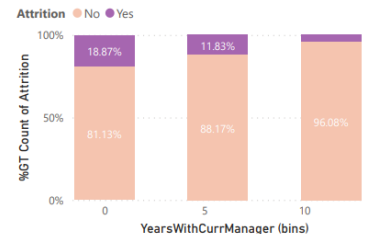
Count of Attrition by NumCompaniesWorked and Attrition



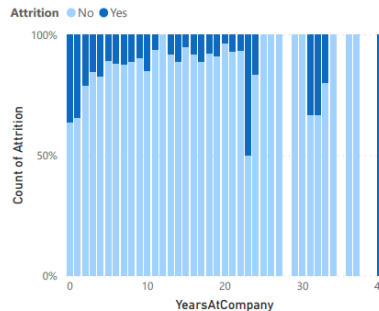
Count of Attrition by TrainingTimesLastYear and Attrition



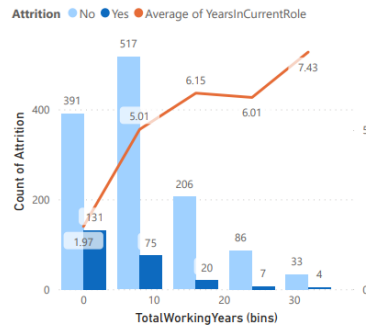
%GT Count of Attrition by YearsWithCurrManager (bins) and Attrition



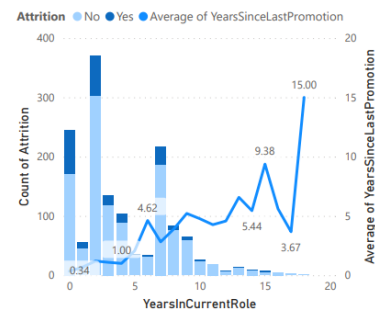
Count of Attrition by YearsAtCompany and Attrition



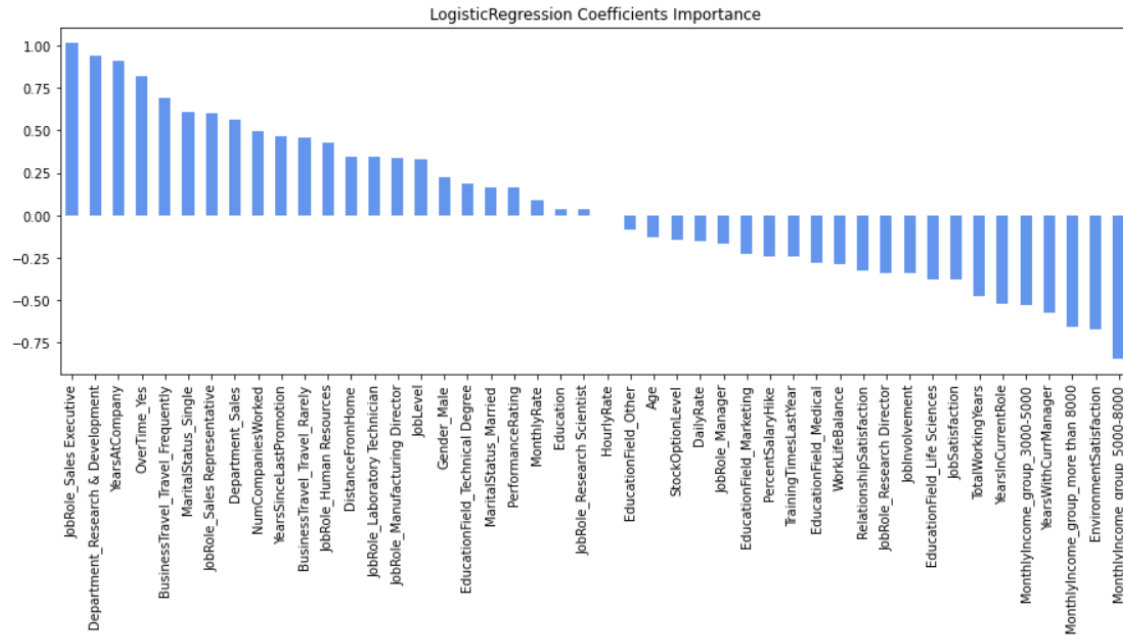
Count of Attrition and Average of YearsInCurrentRole by TotalWorkingYears (bins) and Attrition



Count of Attrition and Average of YearsSinceLastPromotion by YearsInCurrentRole and Attrition



# Important Factors



Top 5 factors influencing attrition:

- Monthly Income
- Employee Satisfaction
- Years at company
- Overtime
- Business Travel

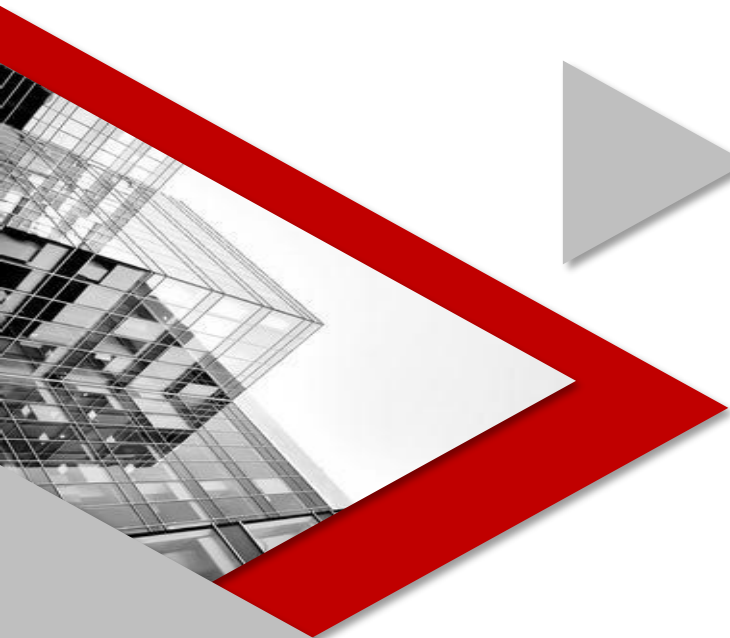


## Conclusions

- The company is **facing the problem of a high employee attrition rate, and the main reasons are:**
  - Lower employee income
  - Lower employee satisfaction
  - Higher working pressures, such as working overtime, traveling frequently, etc.
- **Which employee is most likely to leave the job?**
  - Who is single
  - Who is in the sales department or in the role of sales
  - Who works less than 3 years or in a lower job level in the company
  - Who has worked in a role for 6-8 years and finds it difficult to be promoted
  - Who attends fewer training sessions

## Recommendations

- Making an affordable strategy of employees' income improvement.
- More involvement to improve employee satisfaction, such as improving the working environment, reducing work pressure, etc.
- Striving to retain employees who have worked for 6-8 years in a role with higher pay or promotions for their proficiency in it.
- Improving staff training to promote staff growth and engagement within the company.
- Preparing for regular recruitment of the roles, in which the employee tends to work for less than 3 years.



**Thank you!**

