



# HUMAN RESOURCES EMPLOYEE ATTRITION

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# TABLE OF CONTENTS

- ☐ Description and background of analysis
- ☐ Purpose statement (What are we talking about ?)
- ☐ Tell the Story ( with Data)
- ☐ Conclusion
- ☐ Appendix



# **DESCRIPTION AND BACKGROUND OF ANALYSIS**





## Description

The key to success in any organization is attracting and retaining top talent.

As an HR analyst one of the key task is to determine which factors keep employees at the company and which prompt others to leave.

Given in the data is a set of data points on the employees who are either currently working within the company or have resigned.

The objective is to identify and improve these factors to prevent loss of good people.



**WHAT ARE WE TALKING ABOUT ?**



# THE BUSINESS GOAL

Identify if employee attrition is influenced by such factors as department, salary, overtime, job satisfaction, and/or traveling.

# SUBQUESTIONS

Who is leaving the organization ?

Share an overview of attrition and retention rate and demographics (workforce characteristics):

- age
- gender
- department

to get a picture about the company.

When they are leaving ?

The fact, after how many years of service do employees leave can tell us what periods are most affected by attrition.

Why they are leaving ?

What factors can organizations change to prevent the loss of good people by adopting effective management .

# MEET THE DATA

- ❑ Data contains survey results of **1470** employees who are either **currently working** within the company or **have resigned**.
- ❑ It includes details about their age, salary, education, satisfaction scores, marital status, years of working etc.
- ❑ It is available on:

[Employee Attrition | Kaggle](#)







# PRESENT DATA



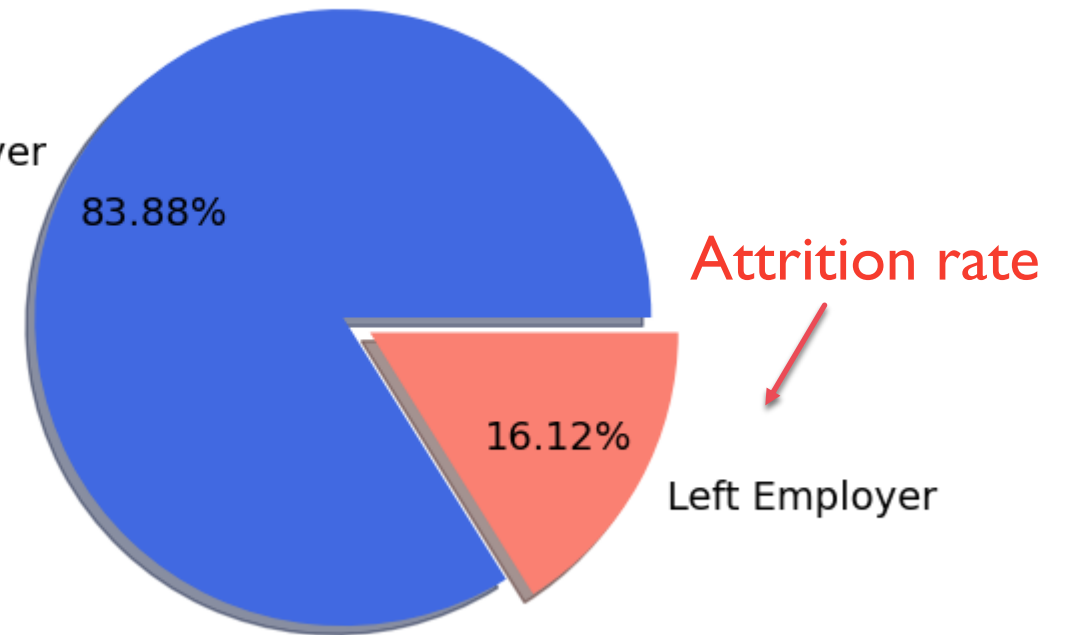
# Attrition and Retention Rate

- To make a conclusion about them we should compare them with historical metrics of organization.

Retention rate

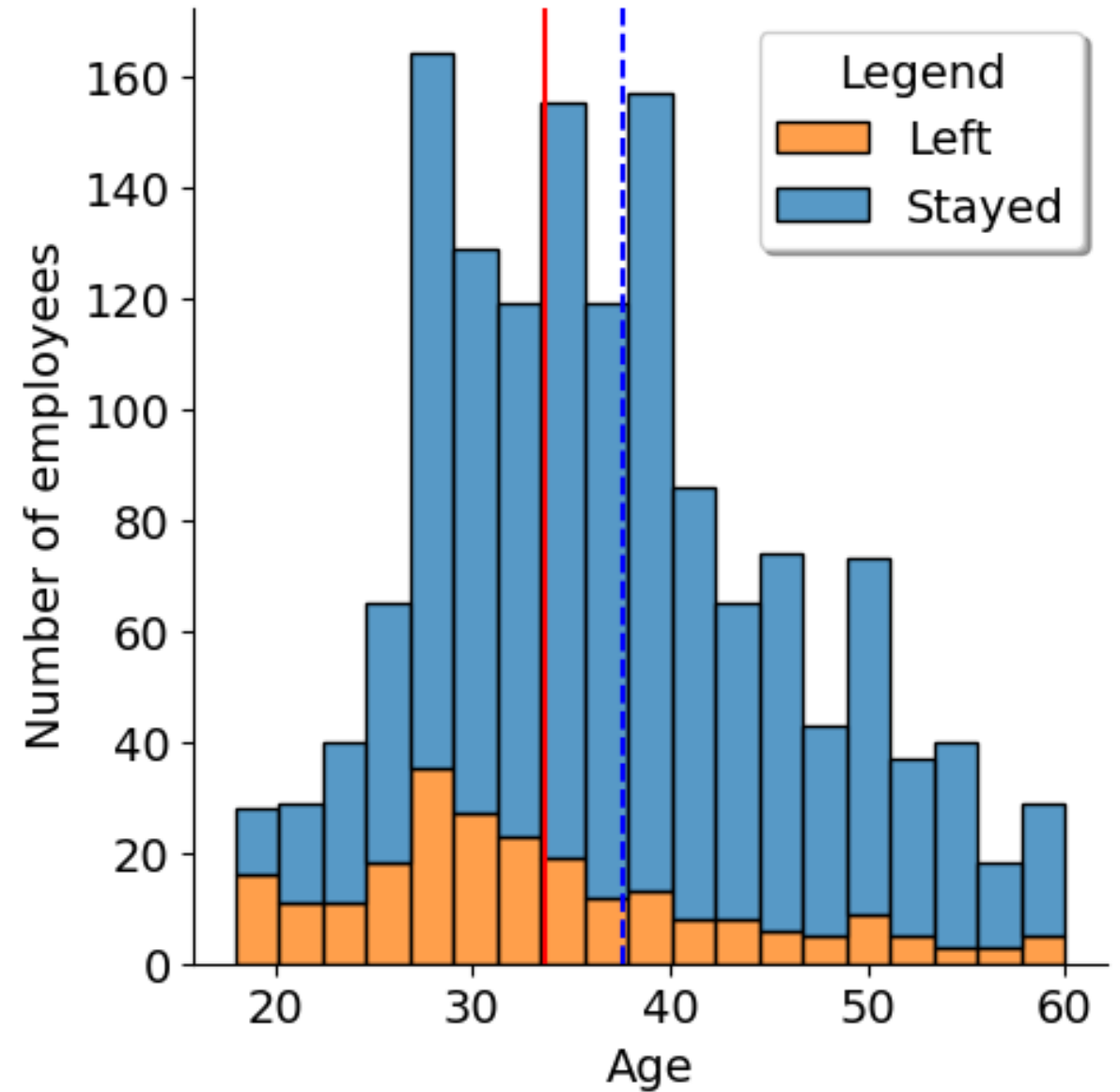
Stayed at Employer

Attrition distribution



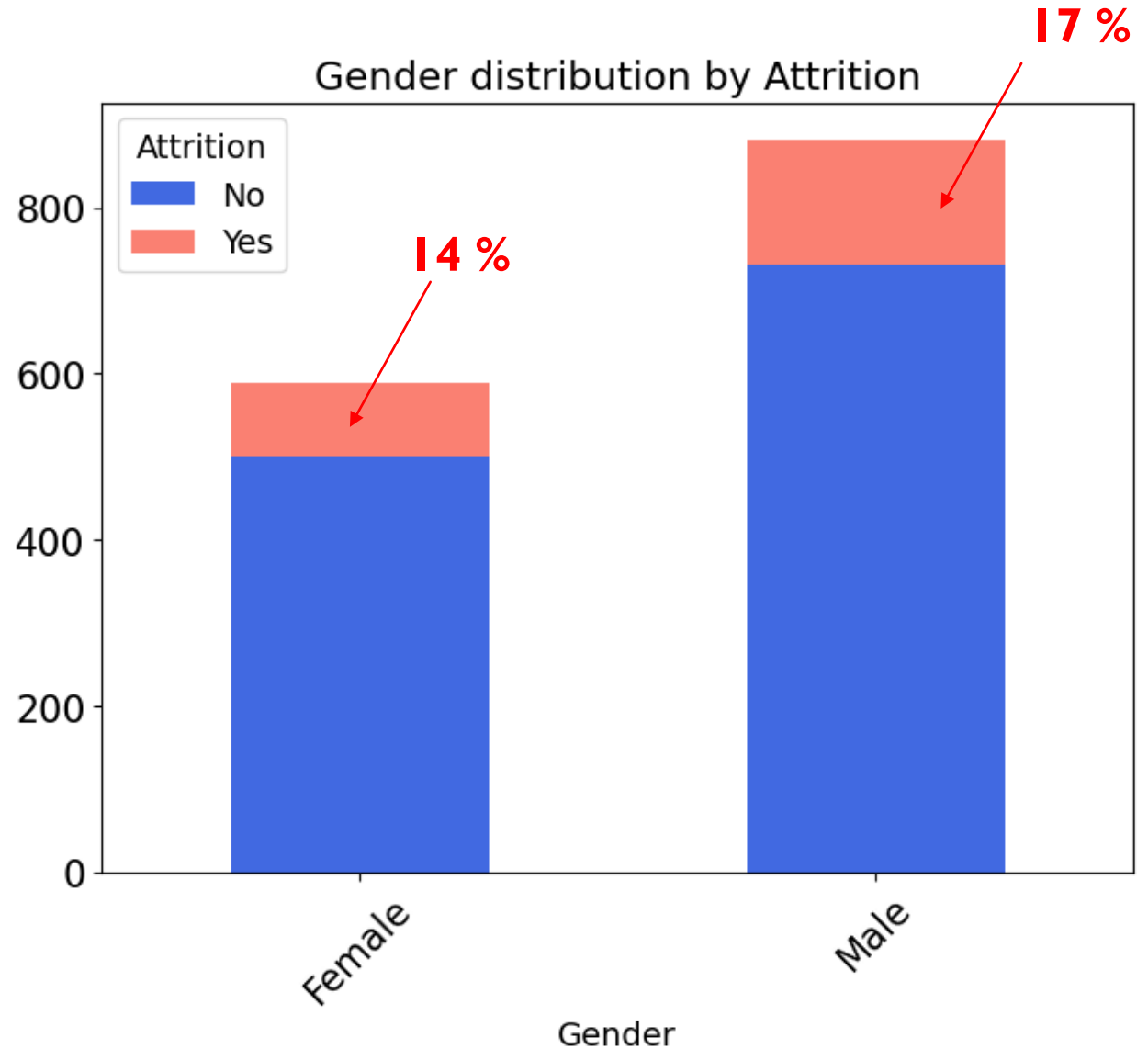
## Demographics: Age

- Attrition is decreasing with aging.
- It is increased until 40 y. o.



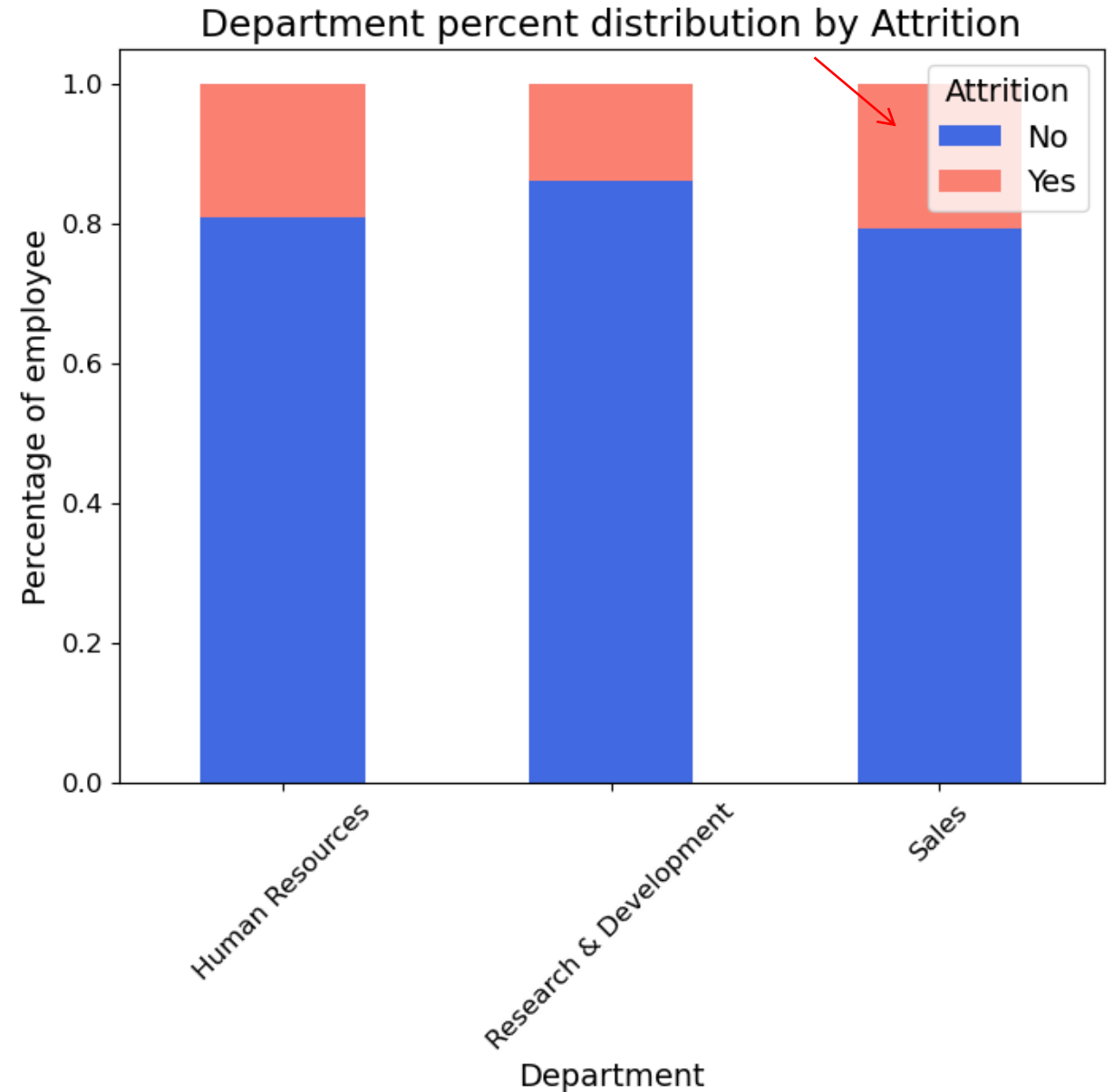
## Demographics: Gender

- Ratio female to male employee is 1:1,5
- Male left the company more than female by **3 %**



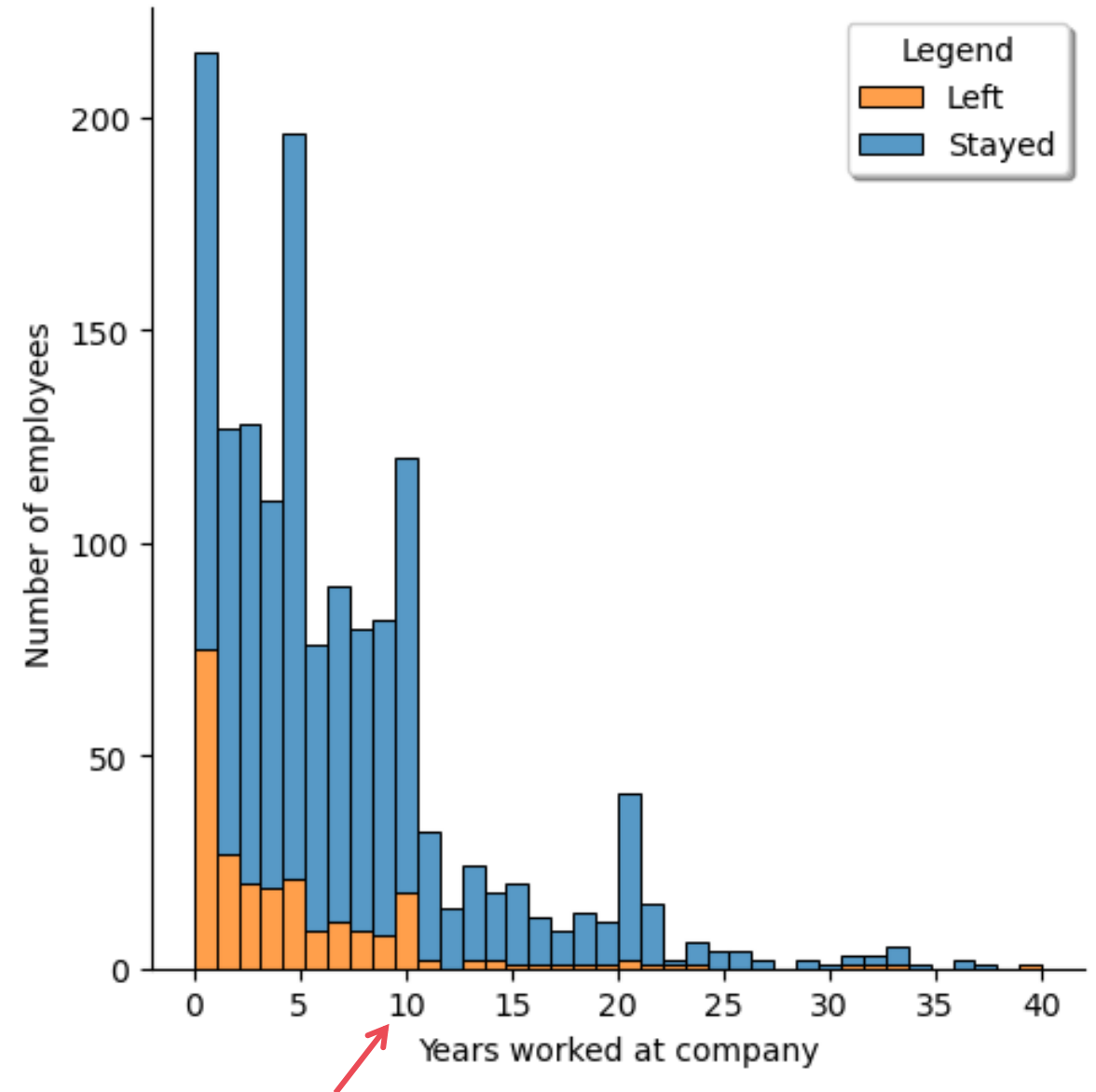
## Demographics: Department

- Sales is the most affected -20% left
- Human Resources- the second, 19% left
- Research & Development- the least, 13% left



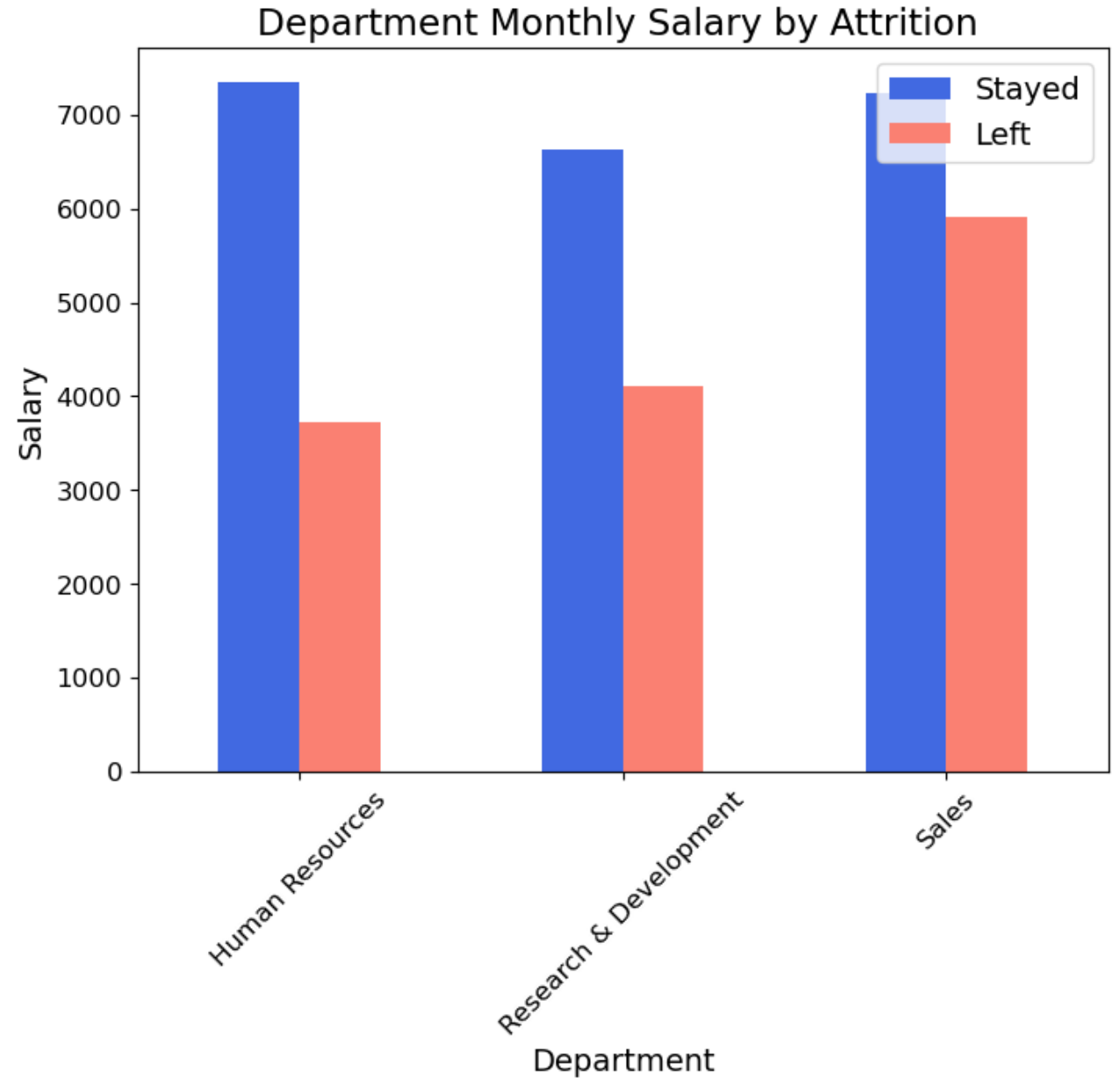
## After how many years of service attrition happen ?

- 92 % of those who leave do it after 10 years of service.



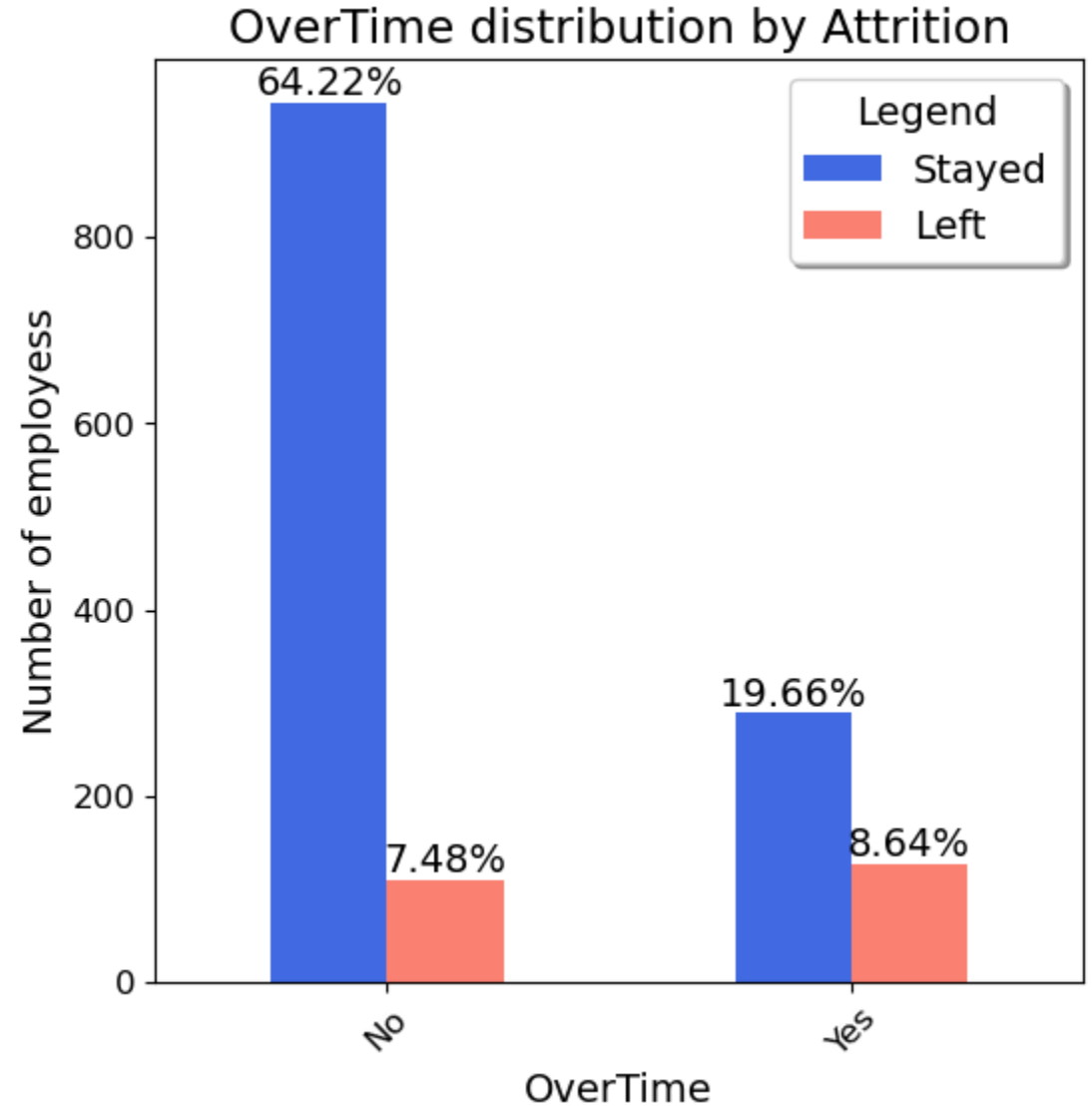
# Salary

- From all departments employees who left had a smaller monthly salary than those who stayed.



## Overtime

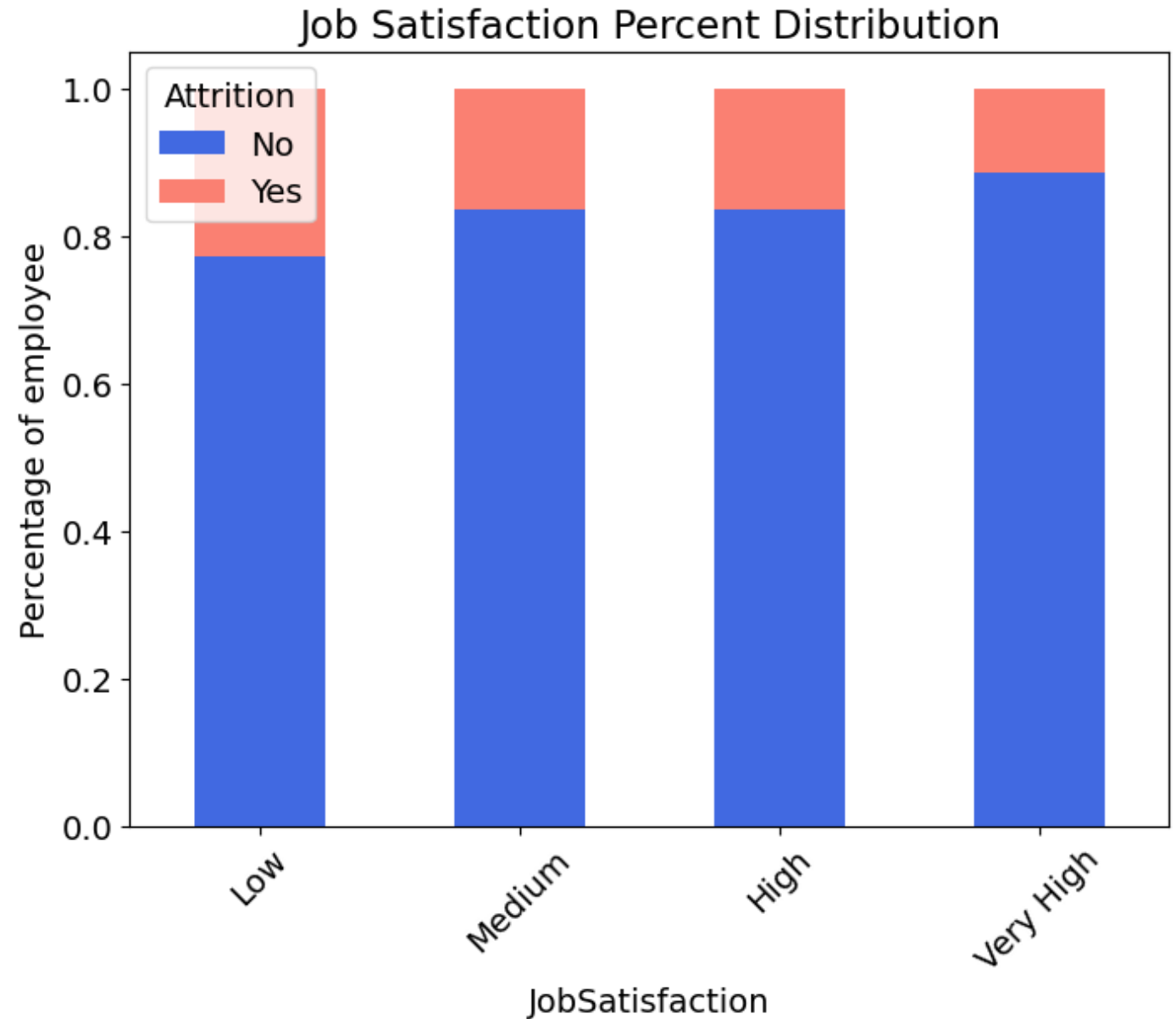
- More employees leave in case of OverTime working.
- !!! It is not causation, there is only correlation.
- The correlation is weak.



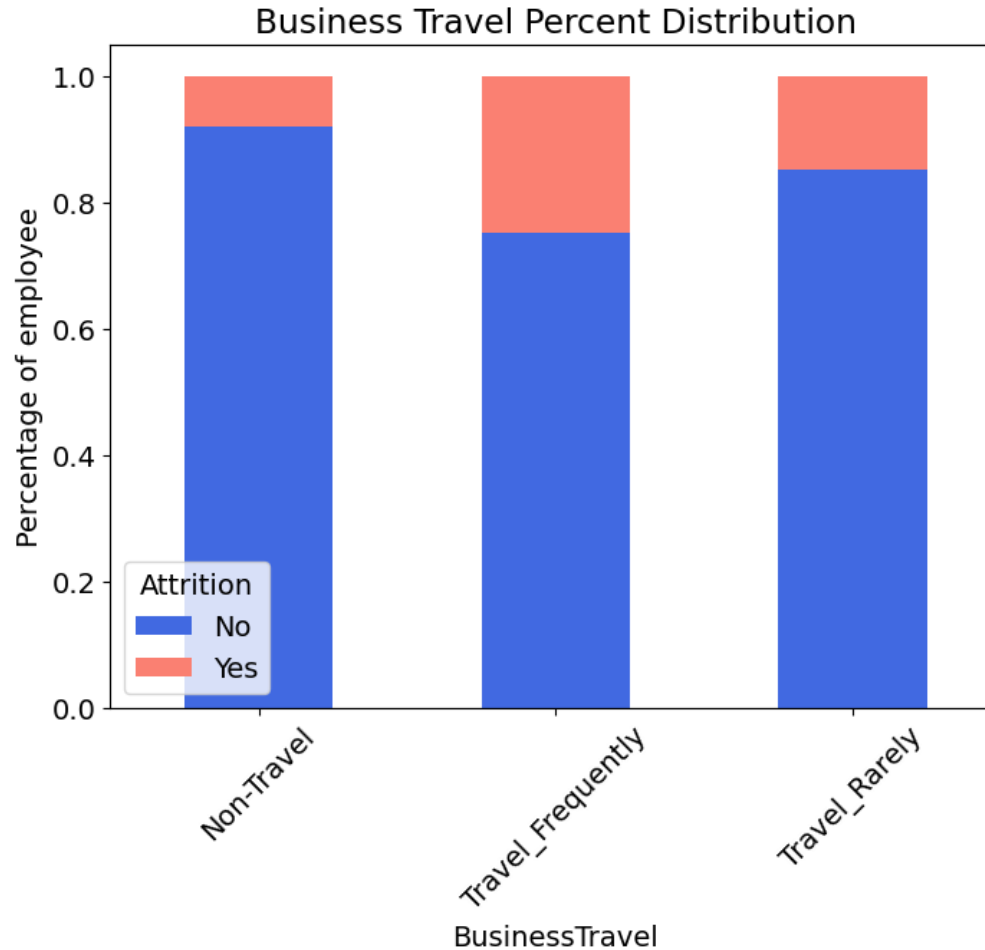


## Job Satisfaction

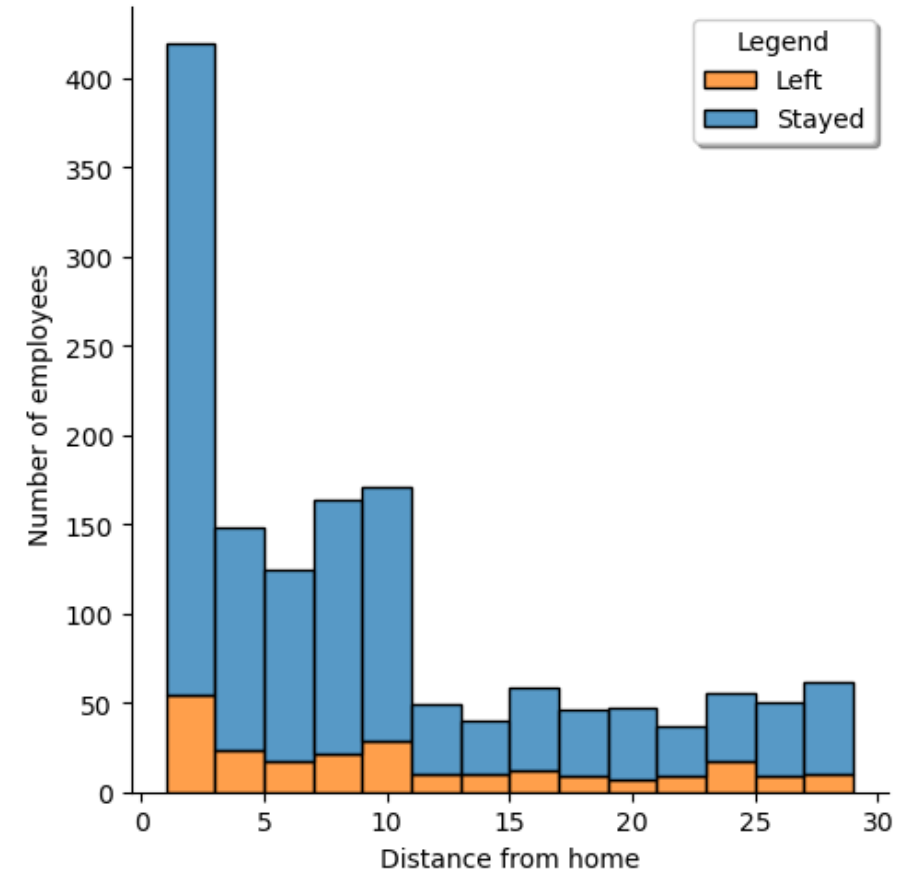
Attrition is decreasing with higher score of job satisfaction.



# Traveling



- Most frequently employees that have business travel leave the company.



- There is no correlation between distance from home and attrition.

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# CONCLUSION



# CONCLUSIONS

1. Attrition rate of the organization is 16 % for the survey period.  
It is more present until age of 40, higher for male in 3 % more than female.
2. Sales Department is the most affected with 20 % of leaving.
3. Employees are leaving after 10 year of service in 92% of cases.
4. Employees who leave have a smaller monthly salary in all departments, and/or have over time working.
5. Attrition is decreasing with higher score of job satisfaction.
6. Most frequently employees that have business travel leave the company.

# RECOMMENDATIONS

1. Make a historical analysis of organization's metrics to get full picture.  
Recruiting and maintaining younger employees.
2. Further analysis (make surveys) for Sales Department to detect factors that can lead to attrition and to improve it.
3. Take anonymous feedback from those who have worked more than 10 years at the company to deeper understand the problems.
4. A better time management to not overload with work. Adjust the salary by quantity of work.
5. Further analysis (take surveys) to know what makes them more or less satisfied by job.
6. Make survey for target group of business travelers, to know what to improve to mitigate attrition.

# THE POTENTIAL BUSINESS CUSTOMER

1. What was the duration of this survey ? Who performed the survey ? Is the survey unbiased ?
2. Does it include all the employees of the organization?
3. Does organization have other data analysis to interpret metrics ?
4. Do employees want stay over time? How over time is paid?
5. How those who have business travel are paid and what conditions do they have during travelling ?



**Thank you !**





# APPENDIX



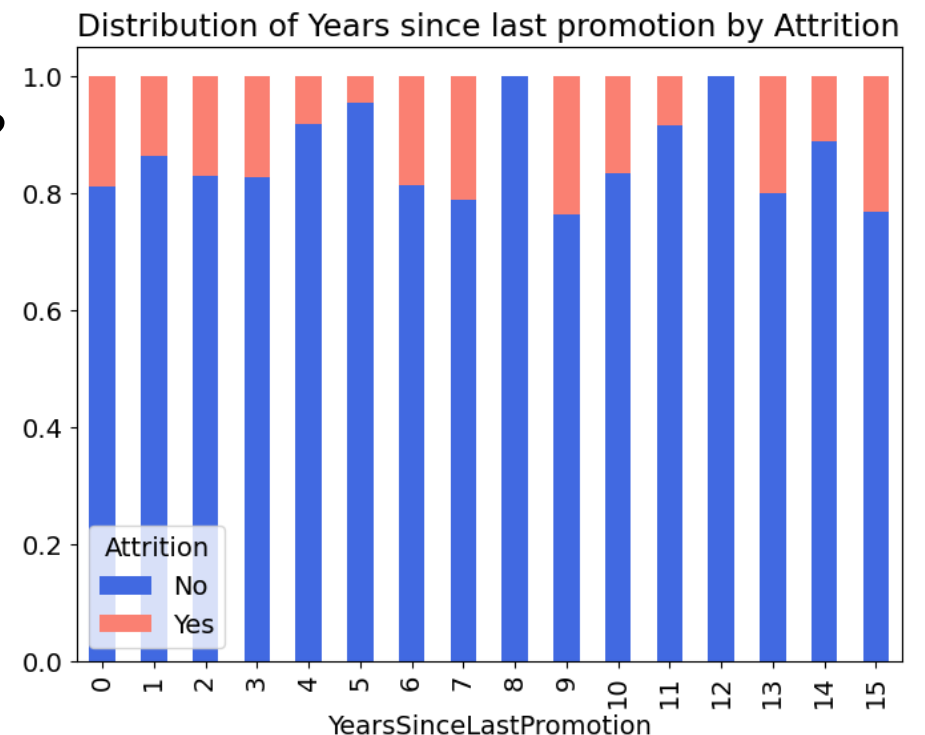


- Data analysis was done in Python, using Pandas.
- Basic variables where tested by:
  - deleting duplicates,
  - checking for null values,
  - checking categorical and continuous values for abnormalities
  - dropping columns with only one unique value: EmployeeCount (1), Over18 (Y), StandardHours (80)

- Over hypothesis analyzed : ***Does promotion affect attrition?***

The is no correlation between years since last promotion and attrition.

Employees left in different time periods since their last promotion.



- There is no correlation between monthly salary and job satisfaction.

