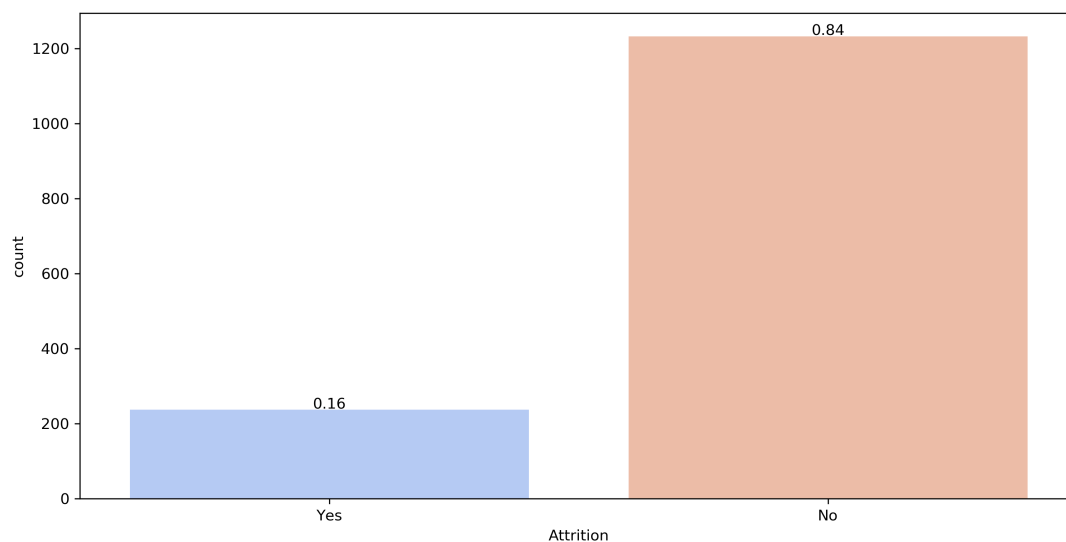


# EMPLOYEE'S ATTRITION ANALYSIS

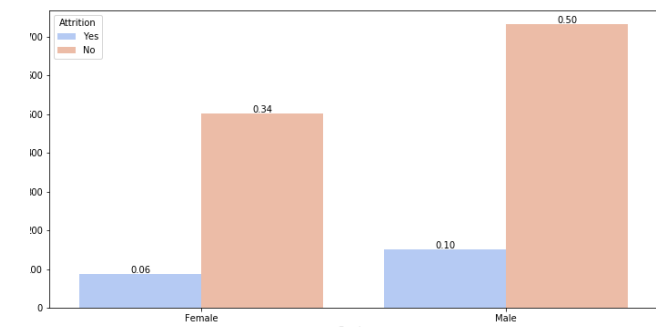
By Sarawut Kengkan

From the IBM Employee data, it contains employee demographic, the role of the employee, satisfaction information, and other individual information. The question for this data that will improve the business is about the attrition of the employee. Attrition is one of the problems that the company will face if the company have higher of attrition rate it will cause more cost for new employment and value of goods or services will decrease in customer sight, all of these cause affect the image of company and company's income in the future. Which are factors cause attrition in the company and how can we reduce the attrition rate in the company.



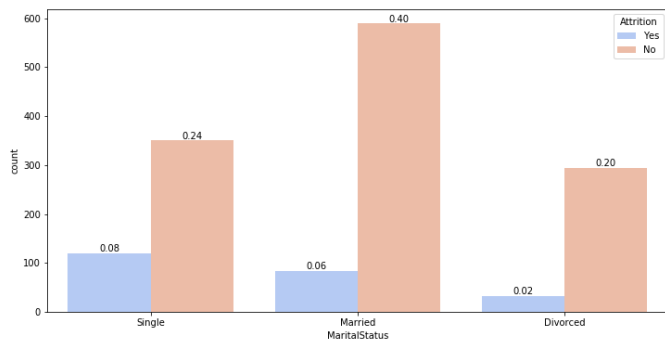
This company has had 1470 employees and 237 (16%) of all employees have left the company. You can see in the figure above.

# Demographic of Employees



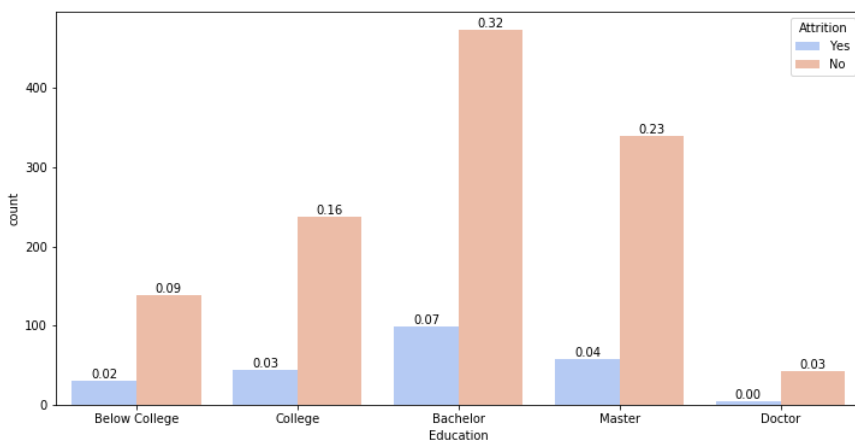
## Gender

- Male employees about 882 people or 60 percent of all employees
- 17.01% of Male left the company
- 14.80% of Female left the company



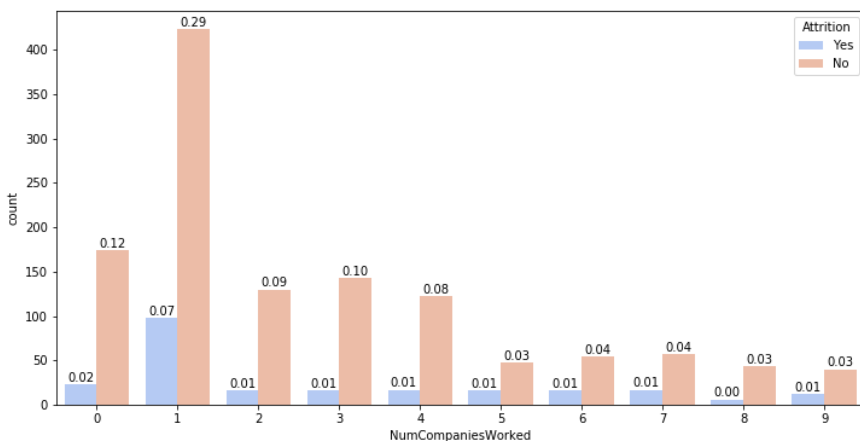
## Marital Status

- 40% of all employees had already got married.
- Employees whose single (8%) have left more than others.



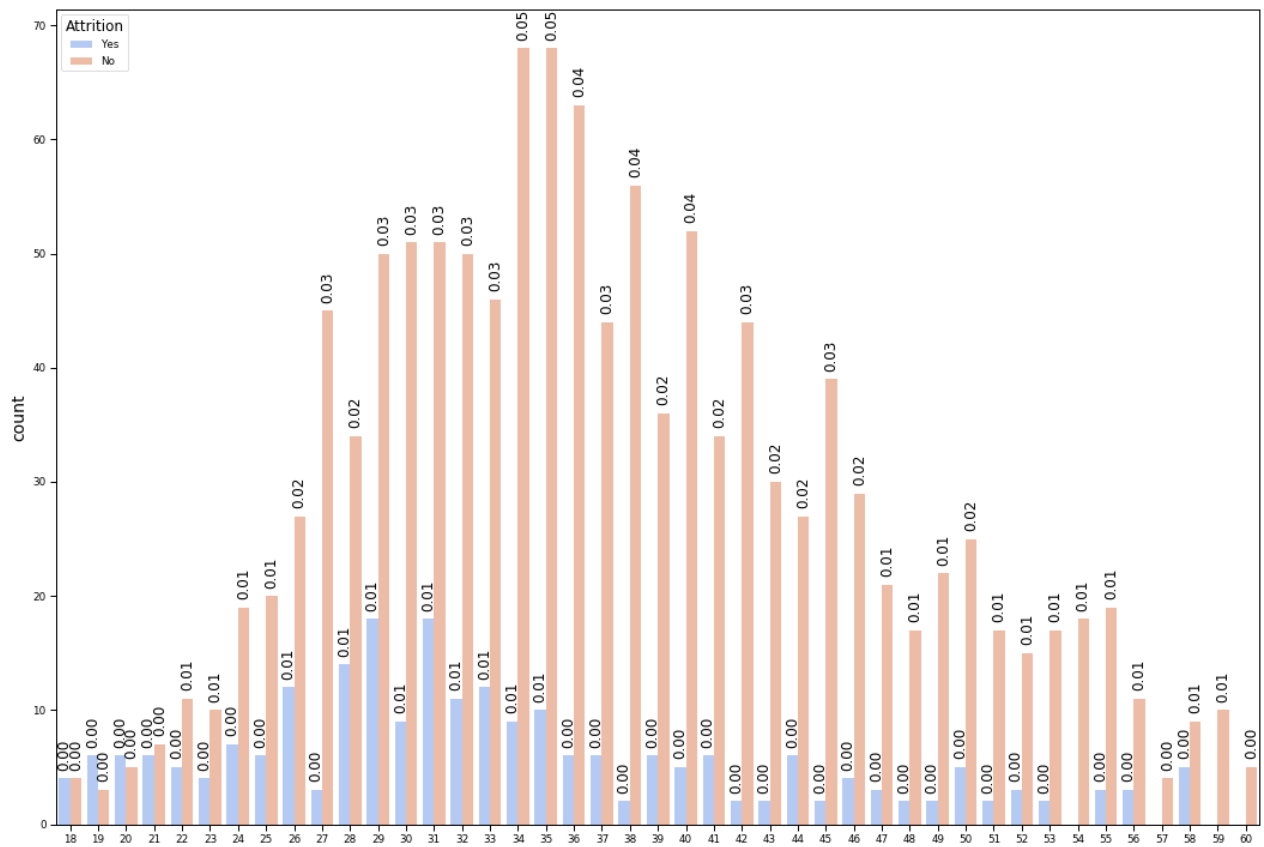
## Education

- Most of the employees have education level higher than a college degree



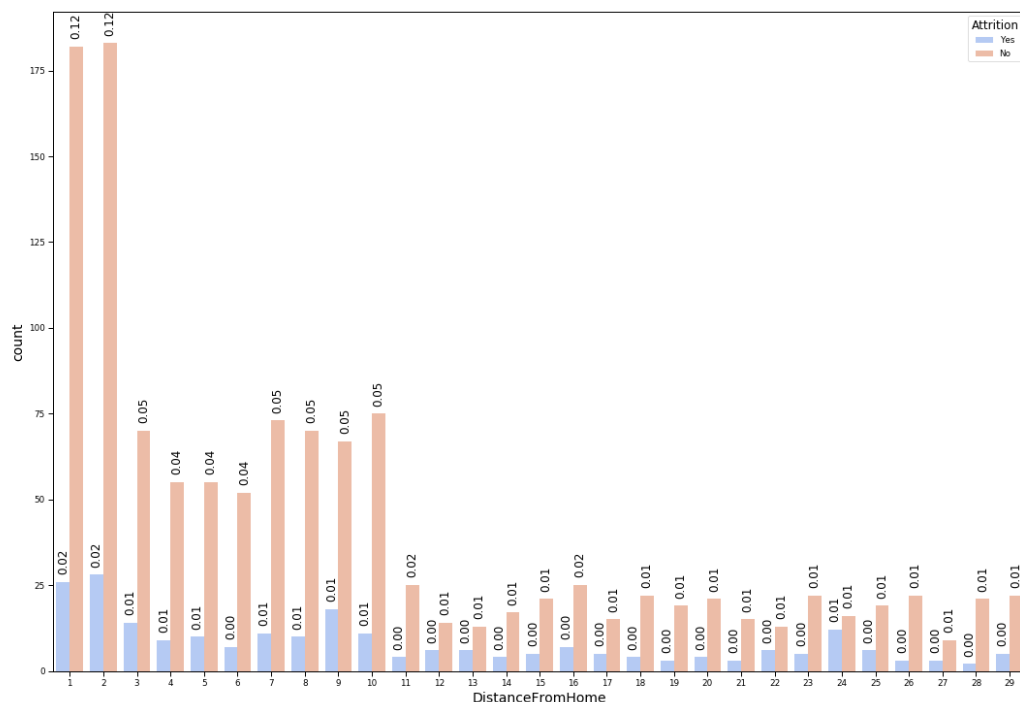
## Number of Company worked

- 29% of all employees have experience from one previous company and a higher percent of attrition (7%) than others



### Age

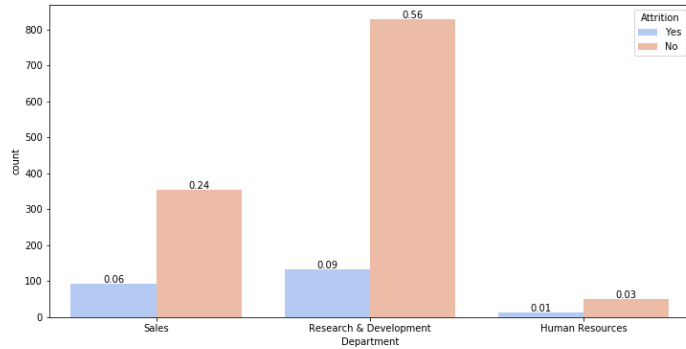
- The average employee's age is about 36.92. the lowest age is 18 years old and the highest age is 60 years old.
- Employees who left the company age between 26 - 35 years old.



### Distance from home

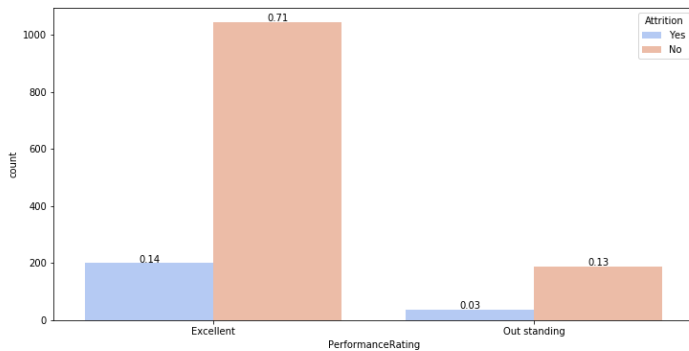
- The average employee's distance from home is about 9.19.
- Employees who left the company are in high distribution range.

# Role in Company



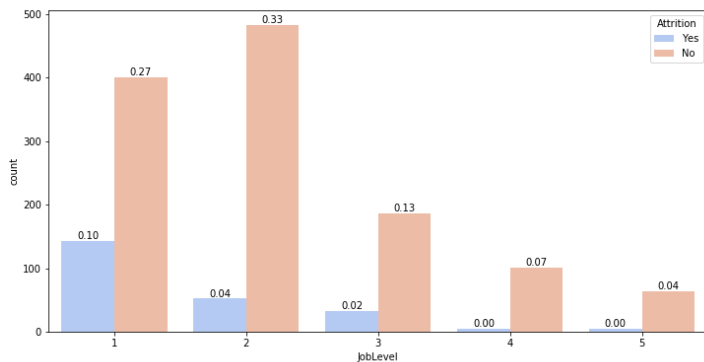
## Department

- Most of employees are in Research and Development (65%).
- Sales department has 21% employees left following with Human Resource about 19%.



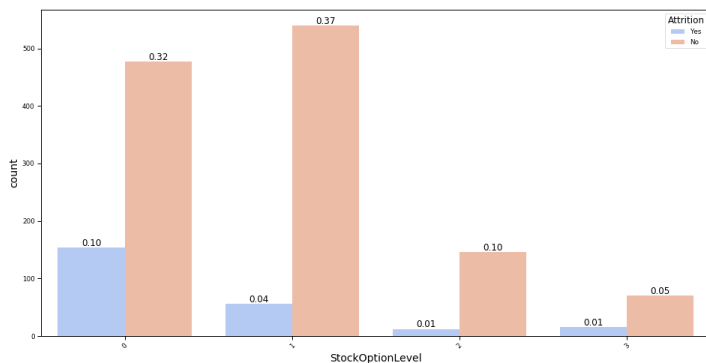
## Performance Rating

- 85% of all employees of this company have an excellent rating in performance.
- 16.08% at excellent rating left the company.
- 18.37% at outstanding rating left the company.



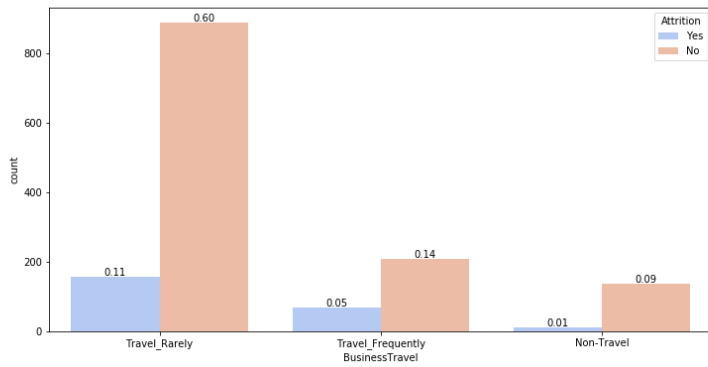
## Job Level

- Employees who have a lower of job level tend to left the company than employee who have a higher of job level.



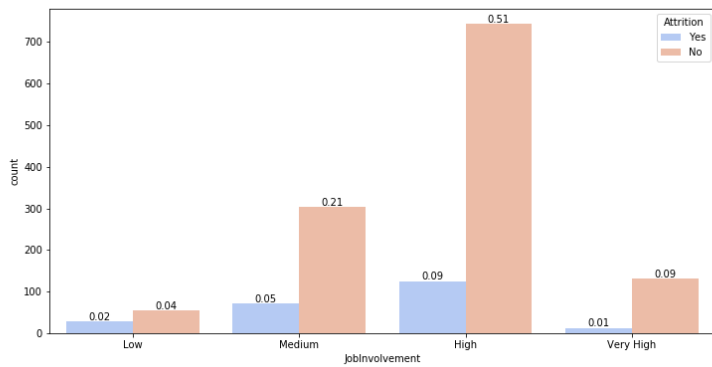
## Stock Option Level

- Most of employees own company's stock less than and equal level 1.
- Attrition rate seem highly in level 0 and level 3.



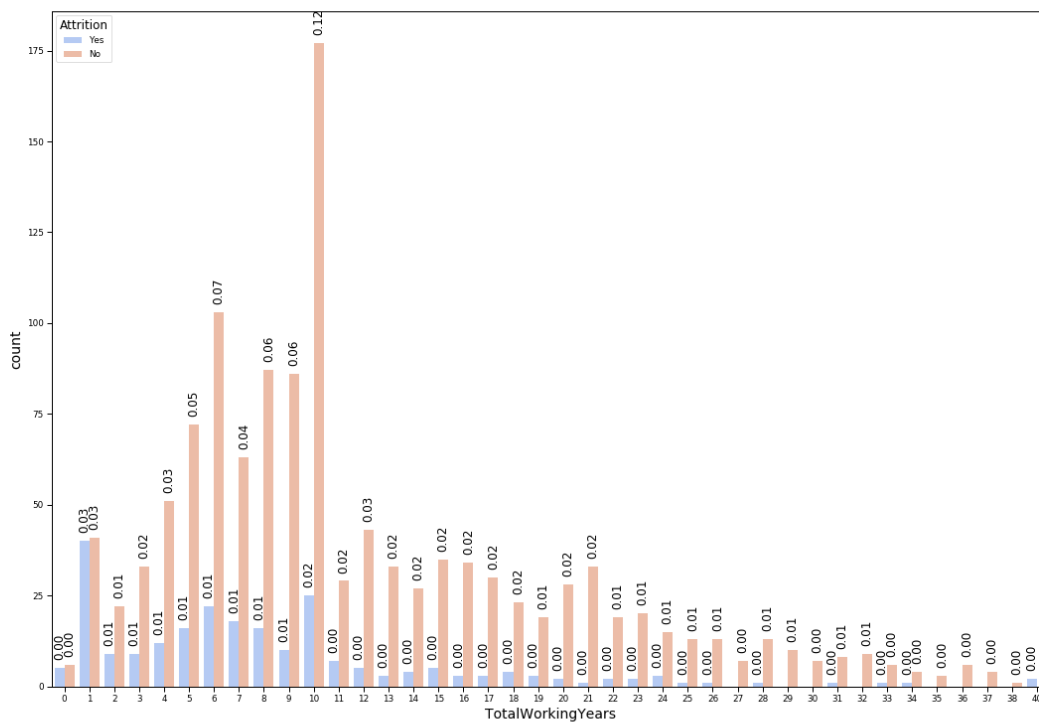
### Business Travel

- Most of employees travel rarely (71%).
- Most of employees left is who travel frequently about 24.91% of all employees.



### Job Involvement

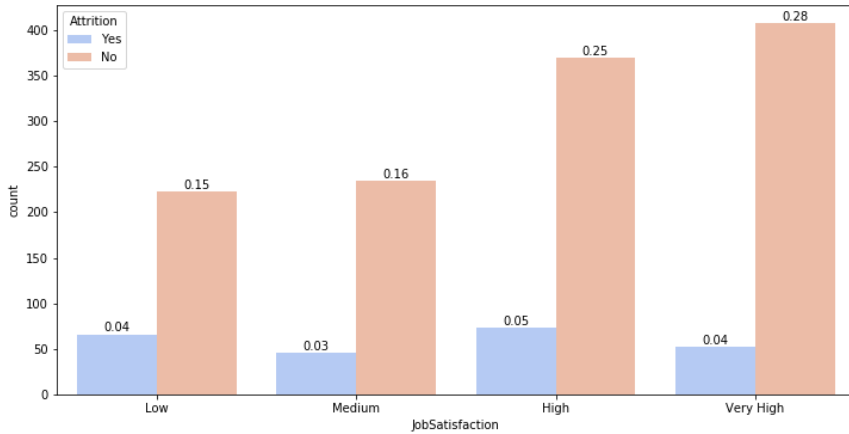
- Low of job involvement is the highest of employees left about 33.73%.



### Total working years

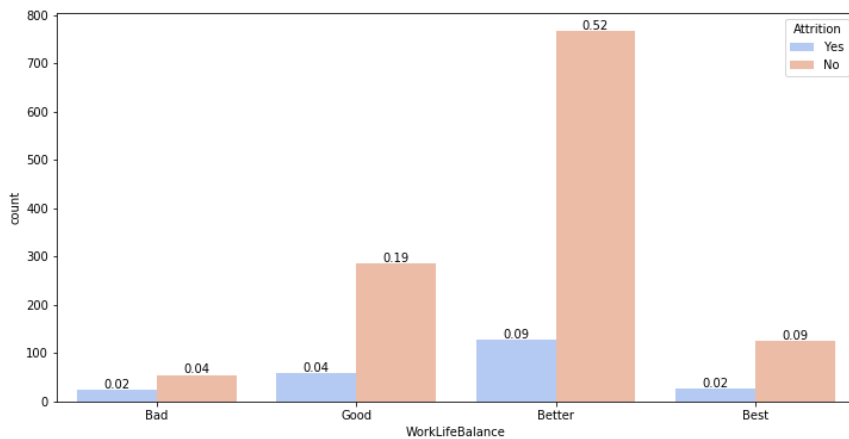
- Average of working experience is about 11.28 years.
- The lowest working experience is 0 years and the highest working experience is 40 years.

# Satisfaction Information



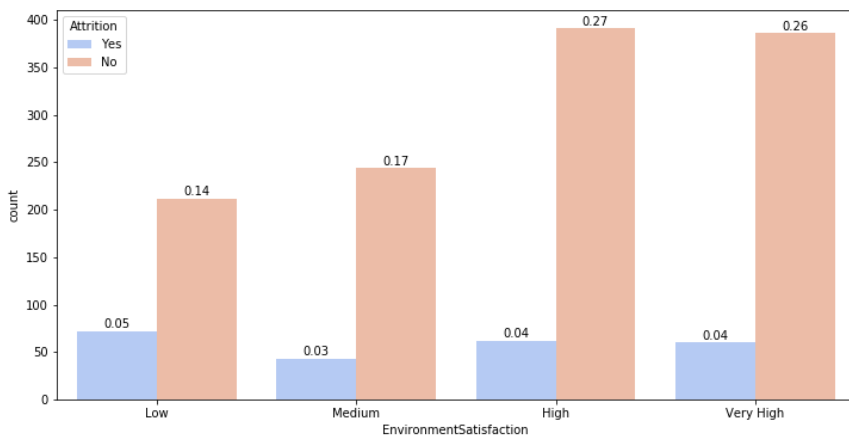
## Job Satisfaction

- Employees who have lower satisfaction of job in this company is highly left the company.
- 22.84% of low satisfaction left the company.
- 16.43% of medium satisfaction left the company.
- 16.52% of high satisfaction left the company.
- 11.33% of very high satisfaction left the company.



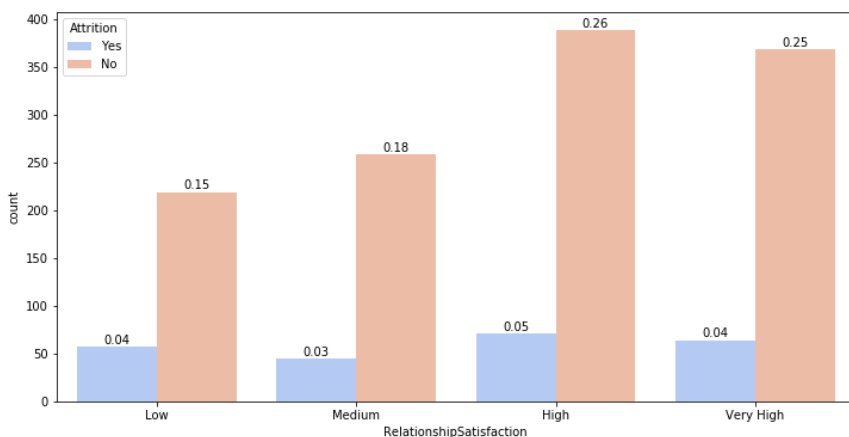
## Work Life Balance

- Employees who have bad work life balance is highly left the company.
- 31.25% of bad work life balance left the company.
- 16.86% of good work life balance left the company.
- 14.22% of better work life balance left the company.
- 17.65% of best work life balance left the company.



## Environment Satisfaction

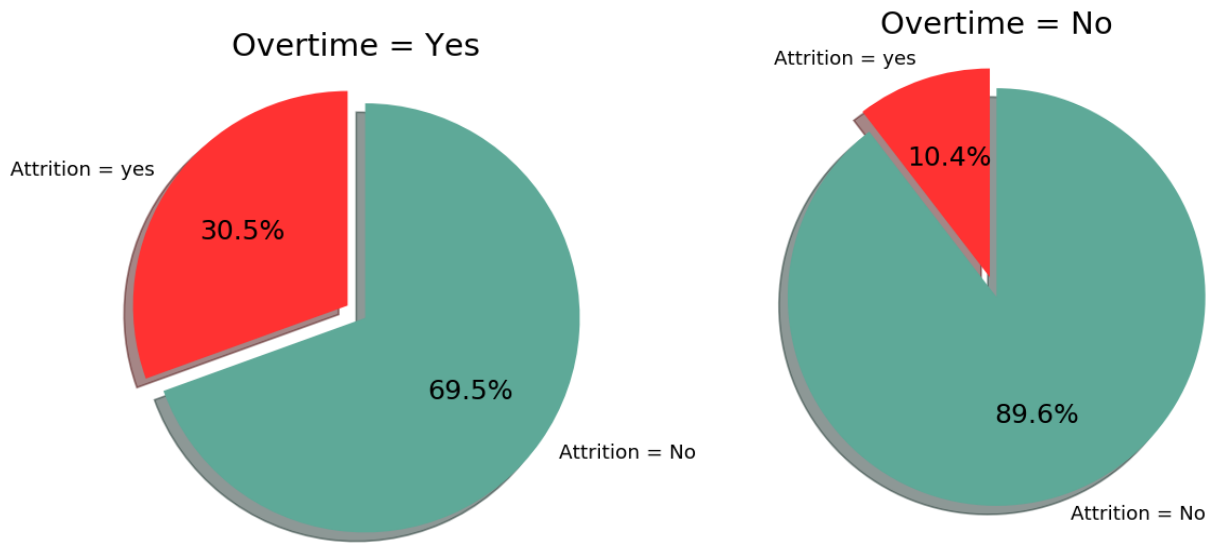
- Employees who have lower satisfaction of environment in this company is highly left the company.
- 25.35% of low satisfaction left the company.
- 14.98% of medium satisfaction left the company.
- 13.69% of high satisfaction left the company.
- 13.45% of very high satisfaction left the company.



## Relationship Satisfaction

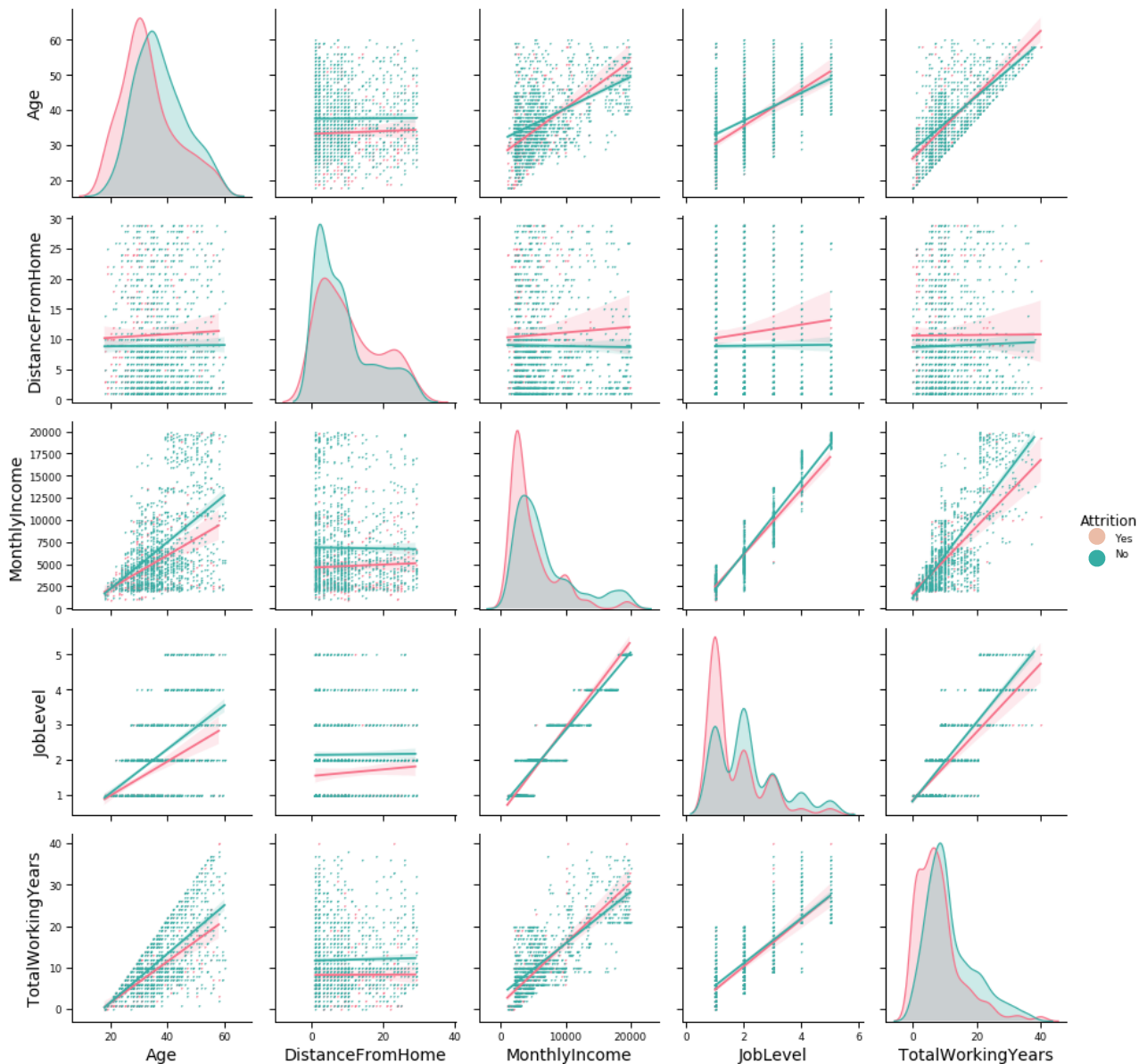
- Employees who have lower satisfaction of relationship in this company is highly left the company.
- 20.65% of low satisfaction left the company.
- 14.85% of medium satisfaction left the company.
- 15.47% of high satisfaction left the company.
- 14.81% of very high satisfaction left the company.

## Overtime with Attrition



Employee who working over time have percentage left this company than who is not working over time

## Data Analysis (correlation $\geq 0.5$ )

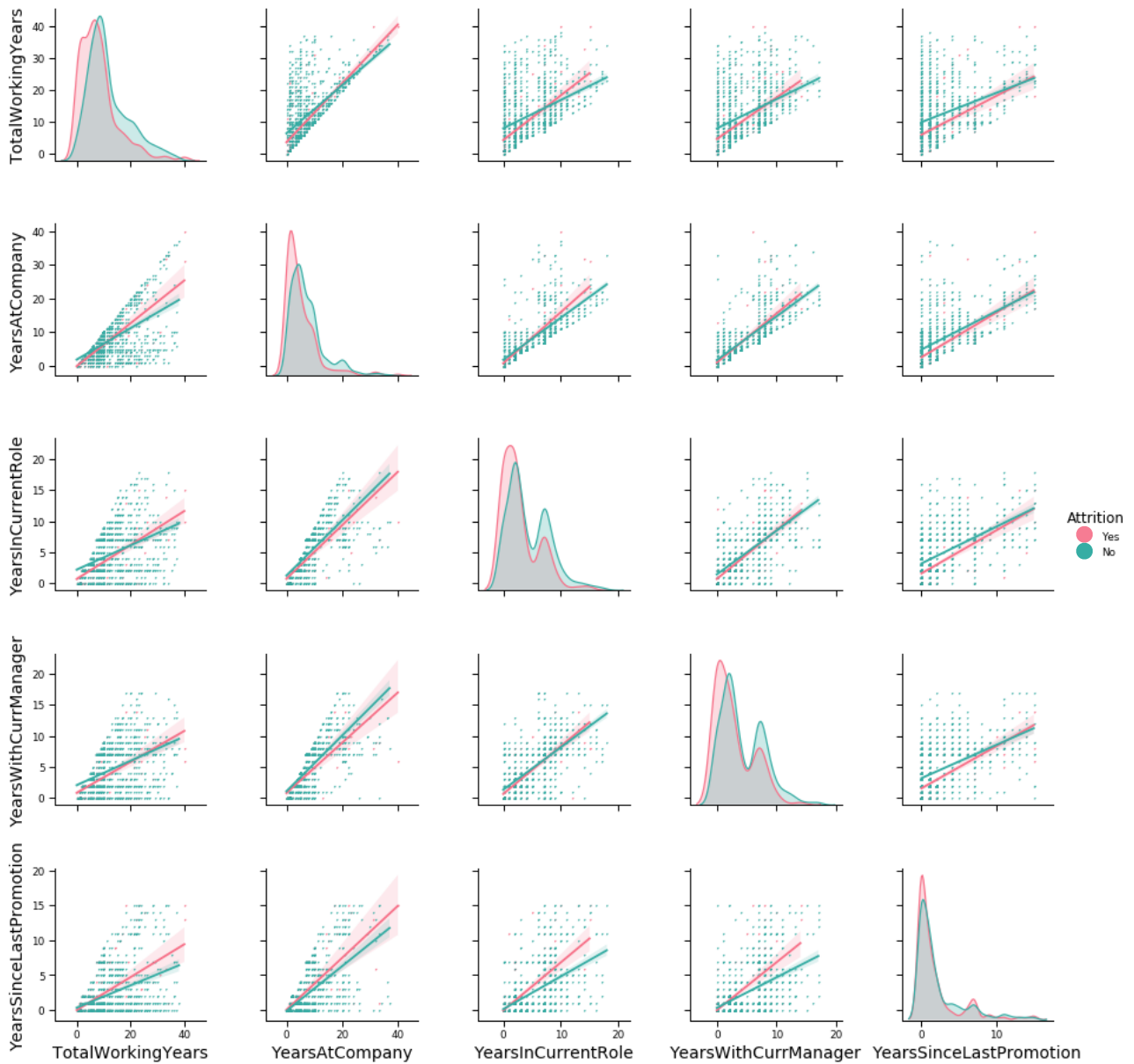


### Overview

- Median of age who left the company younger than who still working.
- Monthly income, job level, and total working years have good correlation with age, employee has highly to working than left if these factors increase with an age.
- Older's employee will leave the company if the distance is high
- If job level and total working year increase higher with monthly income higher, employee will leave the company.



## Data Analysis (correlation $\geq 0.5$ )



### Overview

- High experienced employees will leave the company if they work in this company for more than 10 years.
- Employees whose promoted will leave the company if working as the same role with current manager for the long term.

## **Conclusion gained**

The conclusion of the analysis is in the lists of followings:

- Employees in the sales department have a higher attrition rate than other departments.
- Male employees have more attrition rates than female employees.
- Single employees have more likely to leave the company than another marital status.
- Employees in this company have great performance.
- Attrition rate highly for employees whose low level of job and employees not own the stock company.
- For employees who unsatisfying with the environment, relationship, and job in the company tend to highly attrition rate than employees who satisfied.
- Attrition rate higher in bad work-life balance employees.
- Overtime is the one that affected the attrition rate of the employees in this company. Employees who working overtime have tended to left the company more than those who are not working in time.
- Employees will still work for this company if an income, job level, and working years are increasing relatively with age.
- Employees will leave at this company if the job level and working years are increasing relatively with monthly income.
- Distance had seemed no deterrent in attrition but in part of an older's employee, they will left if the distance is longer.
- Employees of this company not likely to stay in the same position and manger for a long time otherwise employees will leave the company.

Â from the analysis can solve the attrition issue with each statement in the lists. We can be more further analyzed and predictive of the most affected factor and the future of in business by machine learning.

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