HR Analytics Case Study

BUSINESS PROBLEM

- Company observes a Attrition rate of 15% yearly i.e. 15% of it employees leaves company either on their own or because they got fired.

- Higher attrition rate delayed the project timelines which directly affects the company's reputation among it's consumers and partners.

- Company will have to invest more in new employee either in terms of training (i.e. to get trained for a particular technology) or compensation to get the project done.

- Require a comprehensive assessment of the factors in order to curb the attrition i.e. what are the changes we should make to their workplace, in order to get most of their employees to stay.

DATA DESCRIPTION

- Employees data are stored in 5 different files-

    o General Data : Contains Demographic, Salary, Work experience, Job details, Department etc.

    o Employee Survey : How much an employee is satisfied with Job, environment and work life balance.

    o Manager Survey : Manger's rating how well an employee is performed in his/her work.

    o In and Out Time : One year data having per day check-in and check out time of each employee.

- Variables present in the datasets are descriptive in itself and provides information which we could use to identify the relationships and effect upon the employee's attrition.

- We required only the variables that had a direct or indirect response to a employee's potential to default. To achieve this, we prepared the data by choosing select variables that would best fit this criteria..

DATA CLEANING AND EXPLORATORY ANALYSIS

- Extract the average working hours of an employee using the **in_time** and **out_time** data files.

- Collated/Merged all the data files in to one i.e. merged **general_data**, **employee_survey**, **manager_survey** and the average working hours extracted from in and out time data files.

- Checked the continuous variable for outliers and corrected by assigning a specific %ile value.

- Checked for the missing values i.e. NA's, corrected wherever possible with default value.

- Removed the data which is still left with the missing values i.e. containing NA's because those will affect the model performance.

- Scaled the continuous variables and converted the categorical variables in to factors.

- Removed columns that obviously had no relation to the analysis like (EmployeeID, Over18, EmployeeCount and StandardHours).
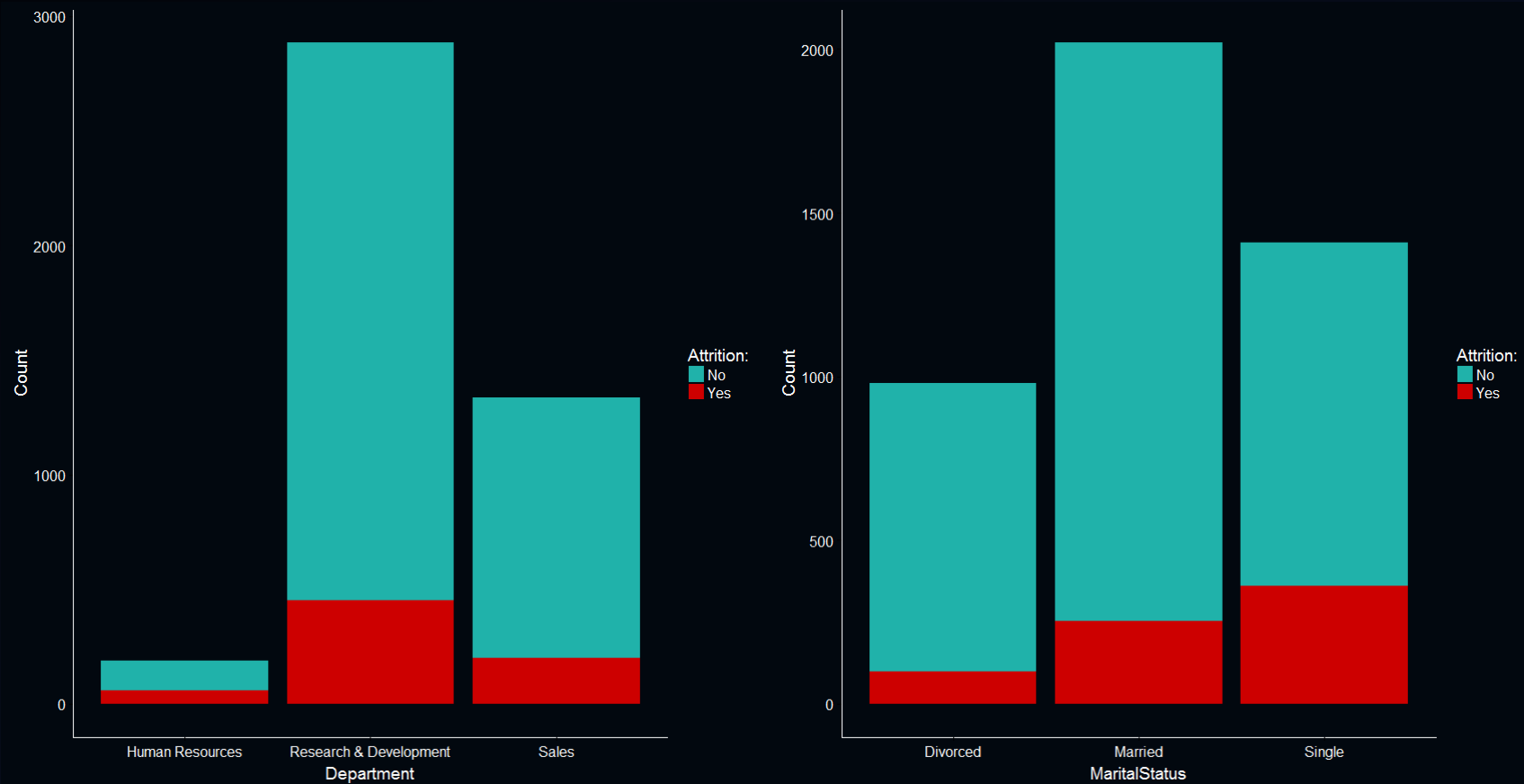
MODEL EVALUATION

AGE & BUSINESS TRAVEL INFLUENCE
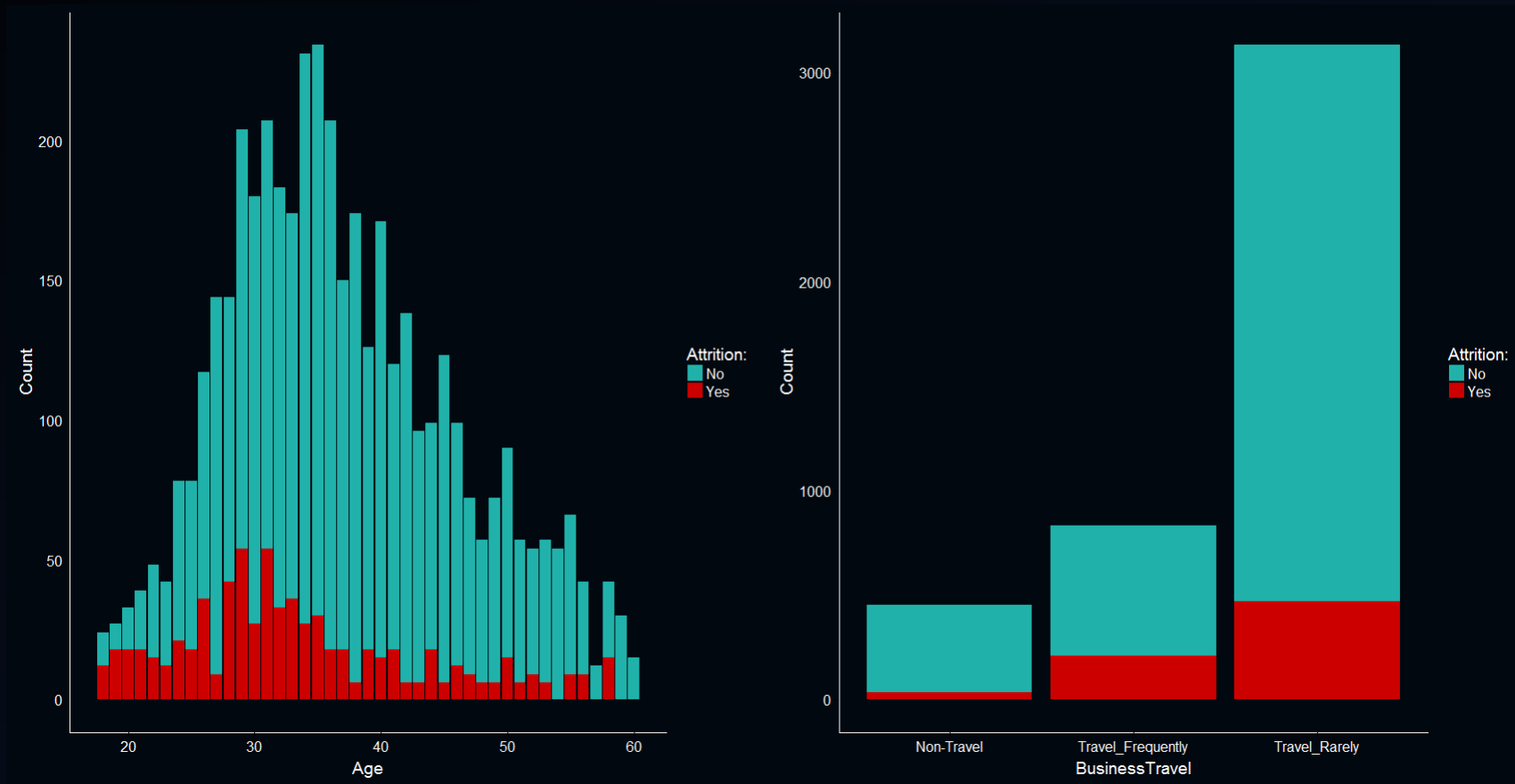
Model specifies the variable **Age** and **Business Travel** which needs to be take care of to lower down the attrition.

As graph shows younger people have a more chances to leave a company and the ones which has to travel more for business purpose (mostly are in 30's and 40's).

DEPARTMENT & MARITAL STATUS INFLUENCE

People works in R&D Department have more chances to leave. As this department is technology driven and provide lucrative offers. Attrition rate of Single/Bachelor are high because they can easily switch to any place if they will get attractive salary and good place to work. Some people leaves because of higher studies.
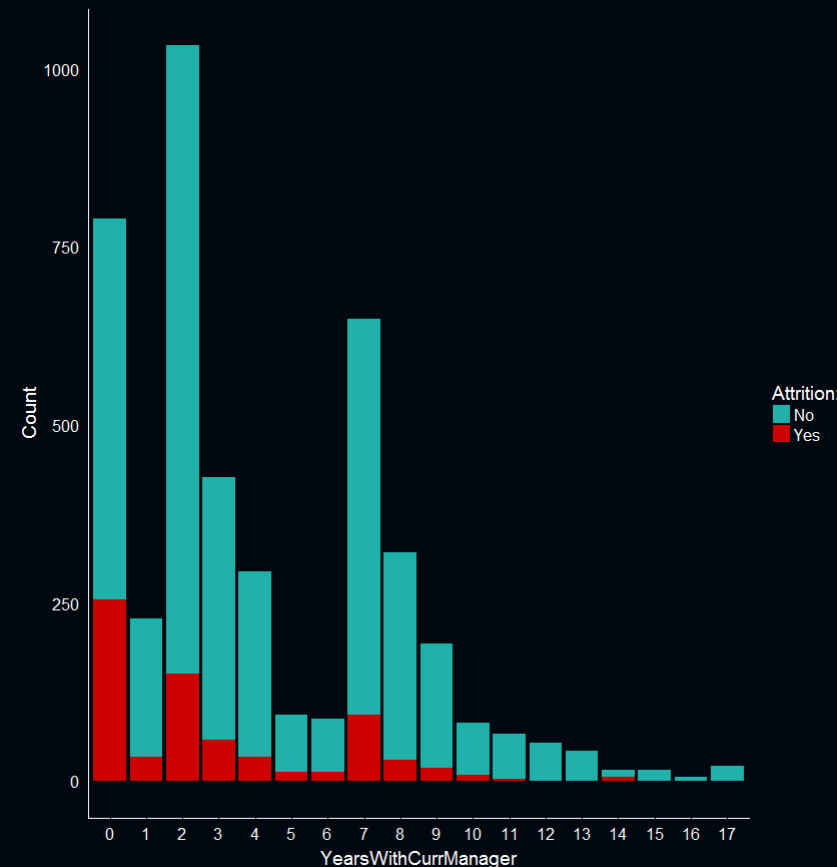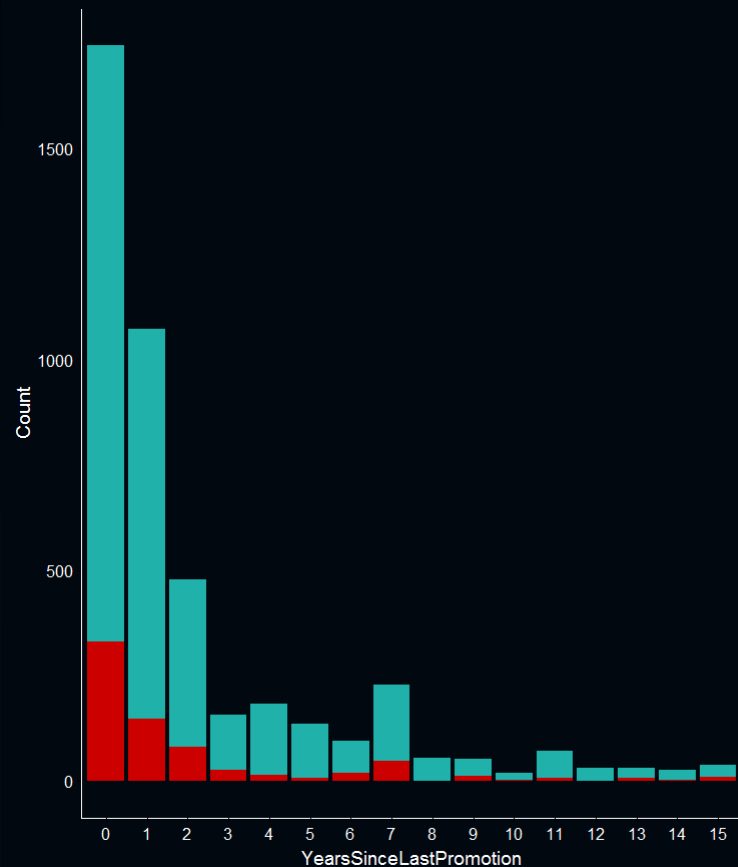
COMPANIES WORKED & WORKING YEARS
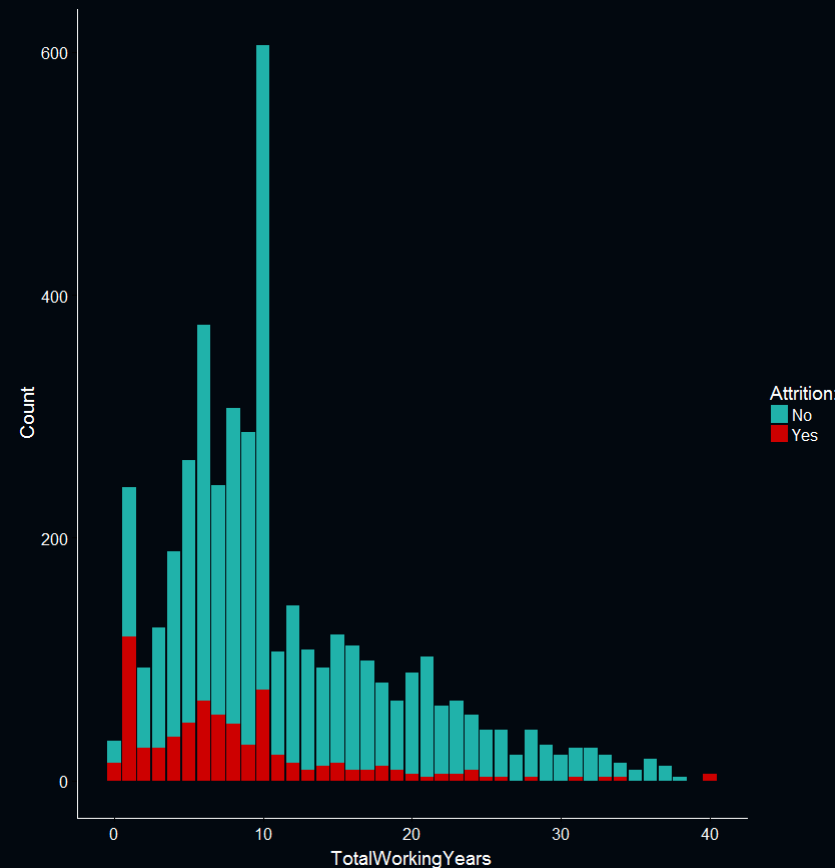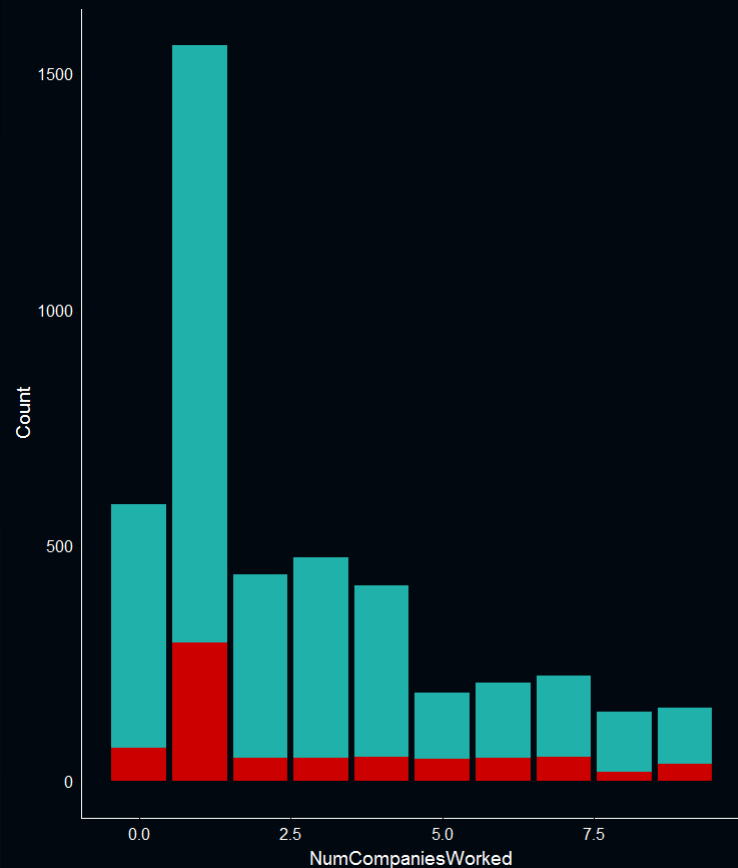
People who frequently change the companies have the higher chances that they will leave this also, if they will get any better offer or opportunity.
In early ages of carrier people usually change companies more may be because of compensation, work opportunity, onsite offer etc.

LAST PROMOTION & YEARS WITH CURRENT MANAGER

After getting the Promotion people having high chances of leaving company. As they have to wait more for next promotion.
If the manager is cooperative and supportive then people prefer to work under that person which will benefit the company as the employees will stay long in the organization.

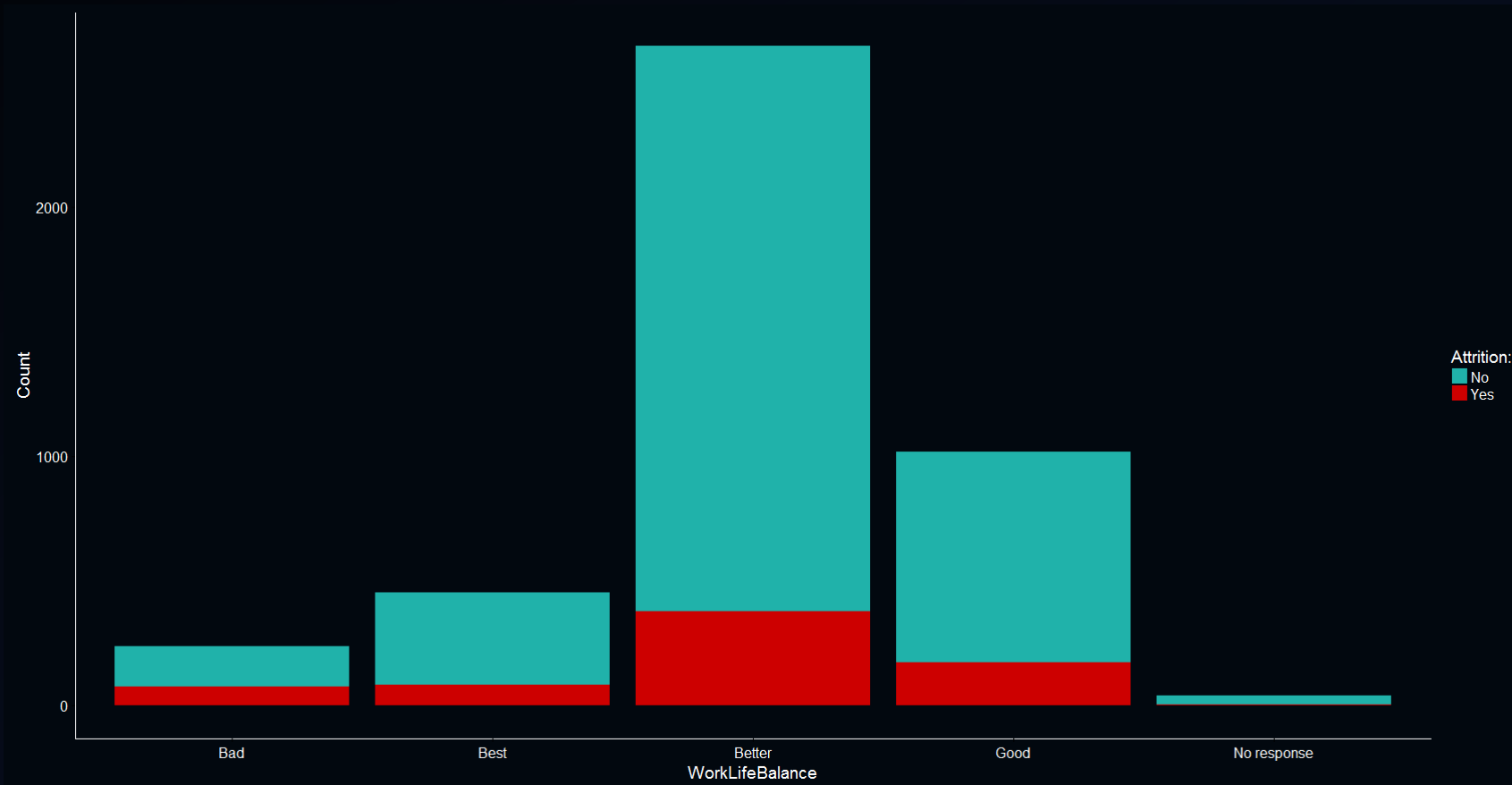# ENVIRONMENT & JOB SATISFACTION
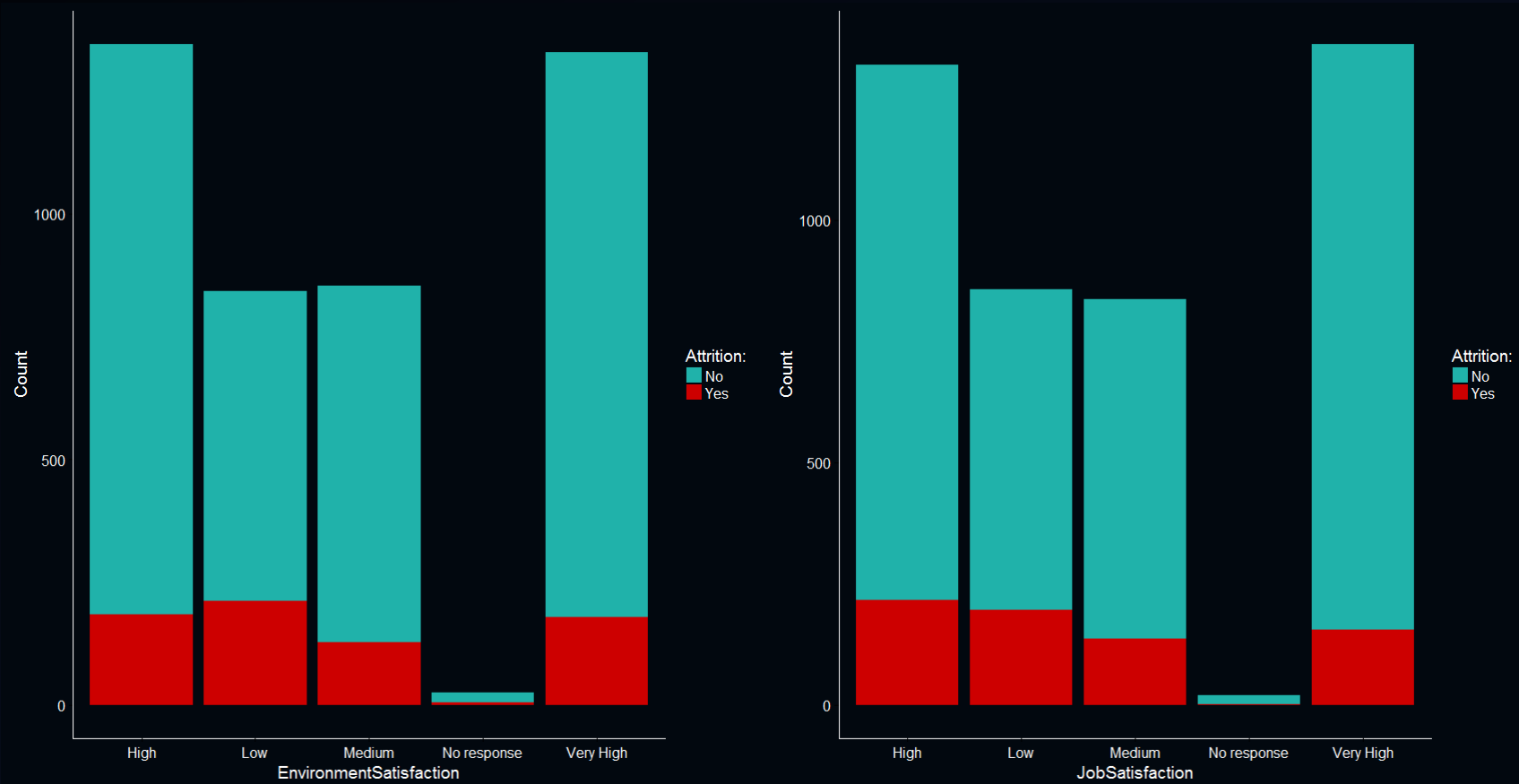
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COMPANY WORK ENVIRONMENT

Employees prefer good working and social environment. In that atmosphere people engages with other (i.e. with Peers, Managers and higher) which help him in career growth and knowledge expansion. So this factor needs to be improved to lower down the attrition.

SUMMARY

- We have seen the various factor came out for the model building which directly affects the employees attrition those needs to be improved or lower down.

- We've seen employees in early 20's and Single or having less experience are more prone to the attrition, So we have to emphasis on them either my meeting, survey's etc.

- Keep an eye on the employee past companies work duration. Make sure it's not frequent.

- Promote and enhance the relationship between employee and it's manager may be by one-on-one conversation or through activities.

- Needs to look for the employees who have recently got the promotion, what's their expectation on this level and how he'll achieve. This will help in better future planning.

- Most importantly the working environment and job satisfaction if it's better employee will think twice before leaving. So we have to keep improvising those and the feedback from the employee survey will definitely help in that.