



ANALYSIS OF EMPLOYEE ATTRITION

Analyzed By:

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The Problem

- A XYZ company is facing a huge amount of attrition. A large number of its talented employees are leaving the company which is affecting the performance of the company. I as The HR director of the company wants to understand reasons as though why many skillful employees are leaving the company. I want to identify and work upon these factors so that I can share it with my team and other department heads to bring down the attrition rate.

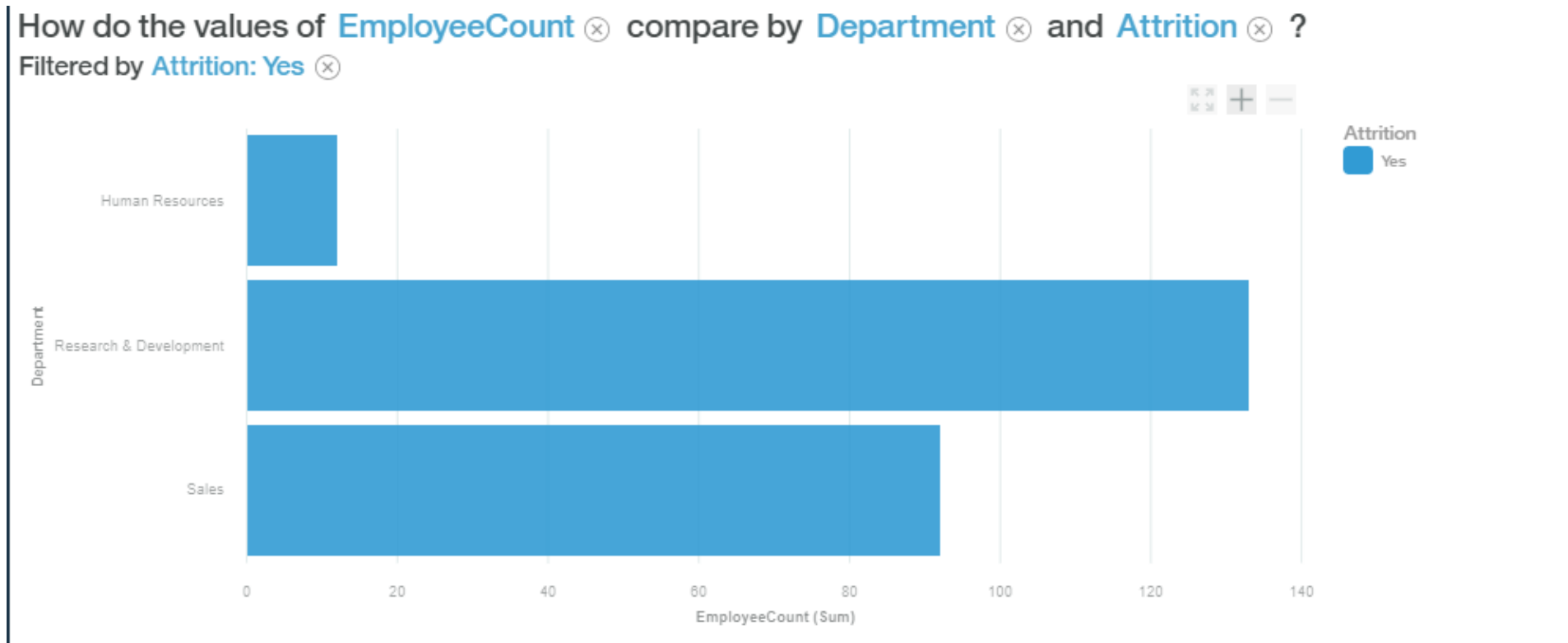
The Analysis

- Through the data analysis I as an HR director wants to gain insight on:
 - The top job positions that are losing employees?
 - Is the attrition common throughout the company or any specific department is facing the most attrition?
 - What are the key elements that are responsible for the attrition?
 - Are there combination of factors that are making the employees resign?
 - What are the main drivers of Attrition?



The Analysis

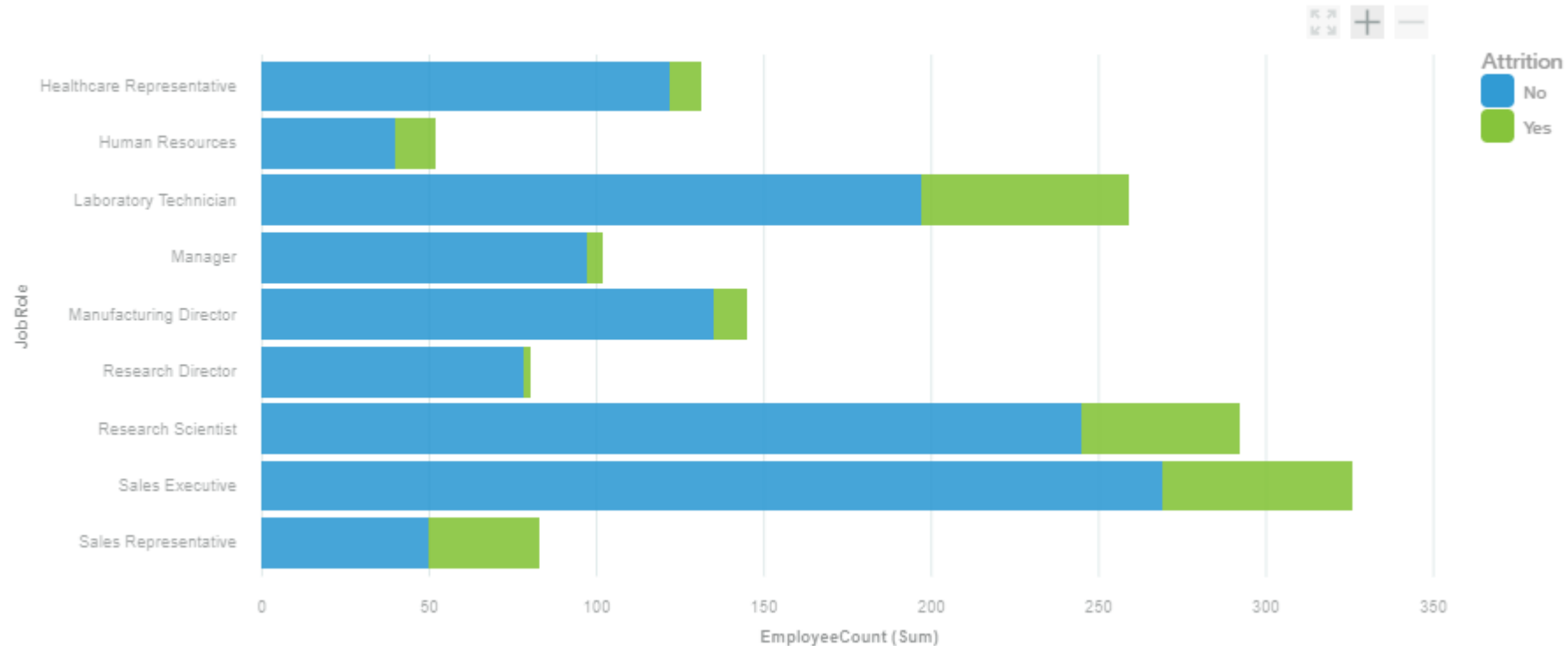
- I begin the analysis by first checking which department is facing the most attrition.
- As per the analysis R&D department is facing the maximum attrition.



The Analysis

- Next, I analyzed different job titles that are facing Attrition.
- The top jobs that are facing the maximum attrition are Laboratory Technician, Research Scientist and Sales Executive.

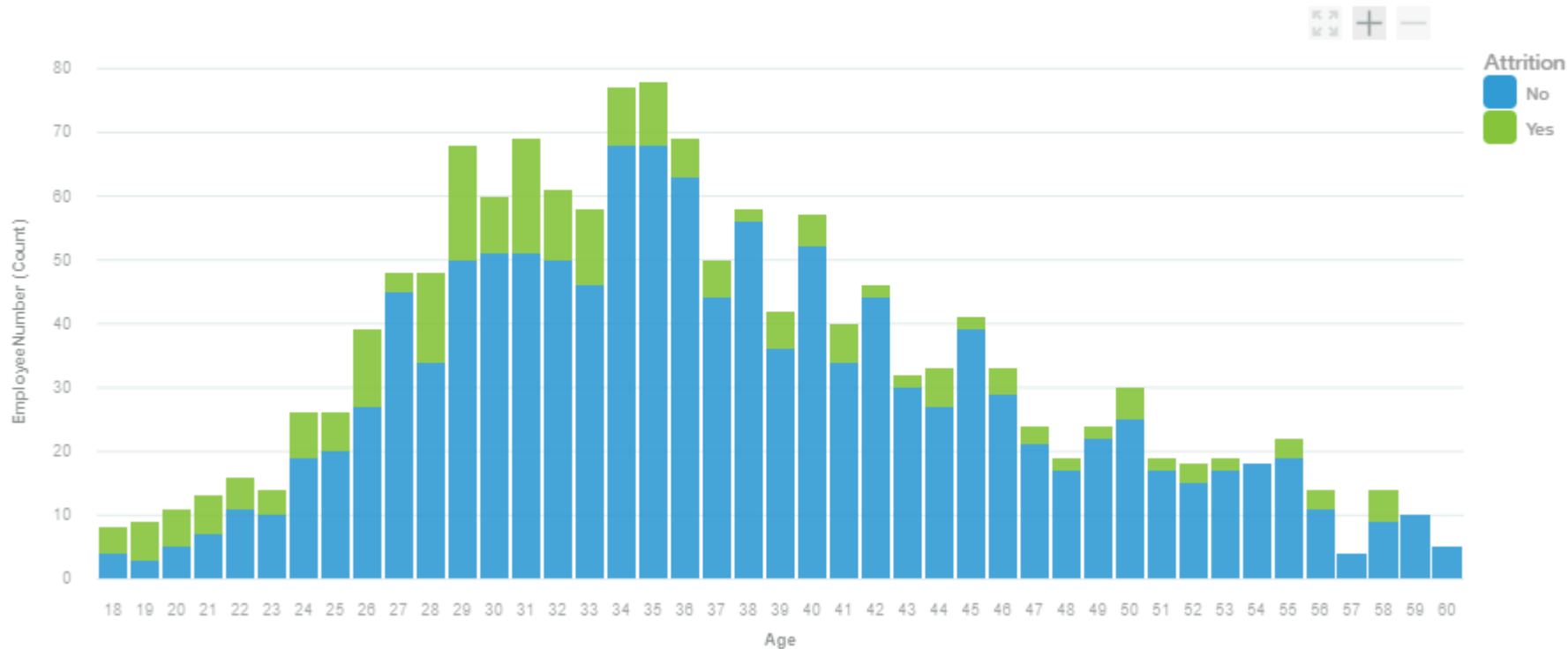
How do the values of **EmployeeCount** (x) compare by **JobRole** (x) and **Attrition** (x) ?



The Analysis

- Next I analyzed whether there is relationship between age and employees resignation.
- The data shows that the resignation is spread along all the age groups.

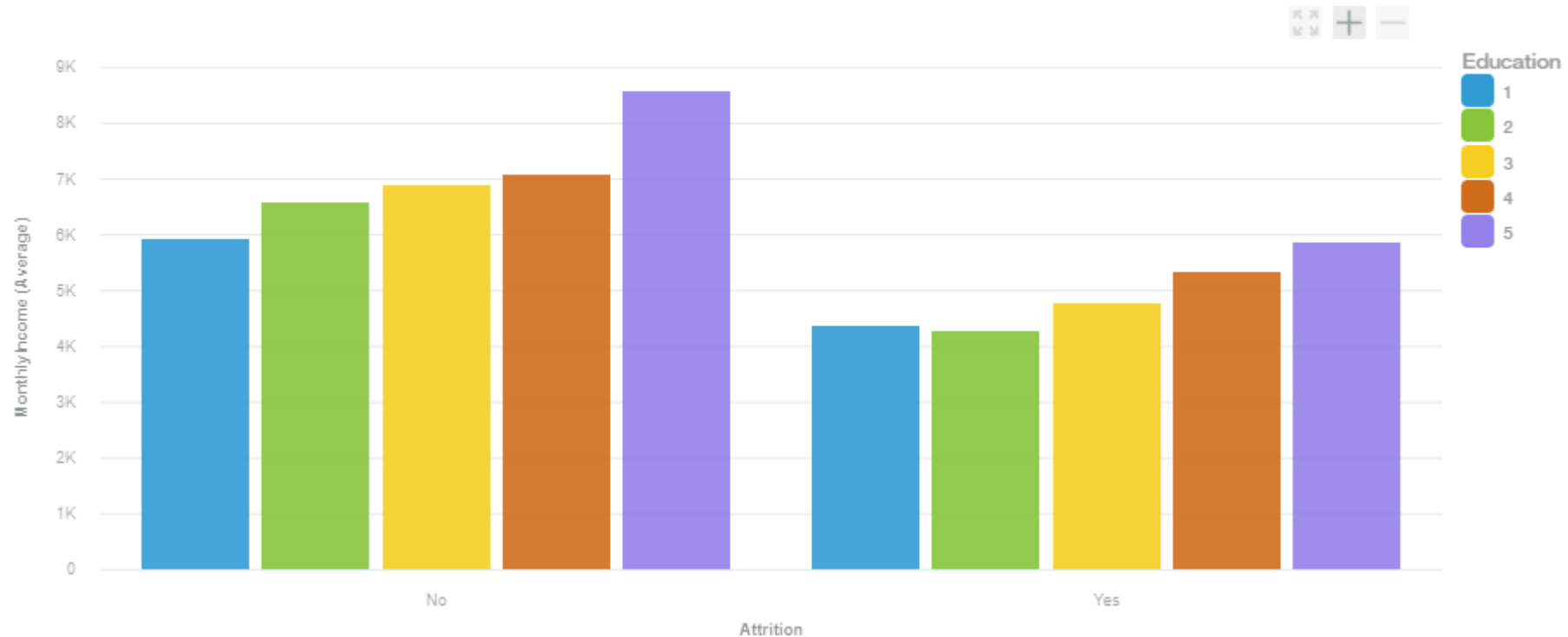
How does the number of **EmployeeNumber** (x) compare by **Age** (x) and **Attrition** (x) ?



The Analysis

- Next I analyzed attrition by different education levels and monthly income and I discover that the employees that leave the company are paid less than the employees that are working and also there is not much difference of monthly income as per different education levels.

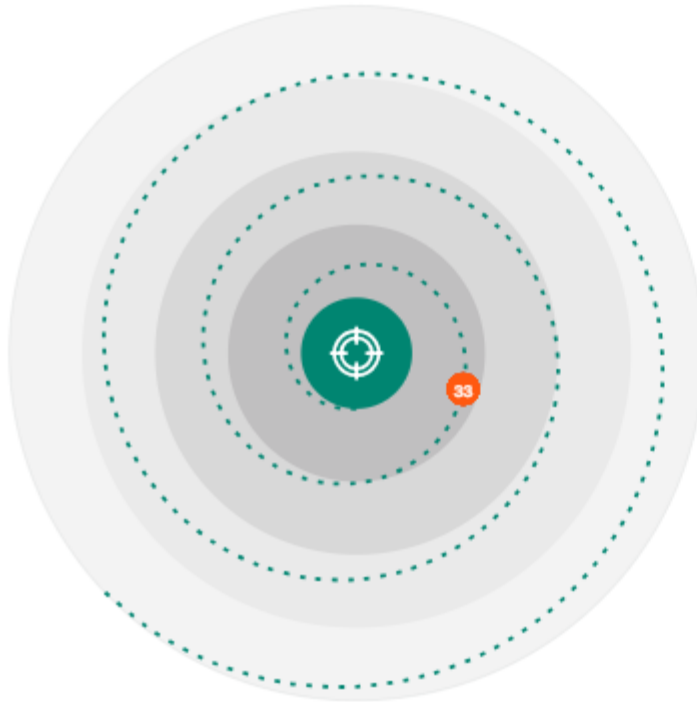
How do the values of **MonthlyIncome** ⊗ compare by **Attrition** ⊗ and **Education** ⊗ ?



The Analysis

- I further analyzed the key drivers of Attrition and discovers that Overtime and job level are the key drivers.

What drives **Attrition** ⊗ ?



1 Driver
2 Drivers

Strength

Search drivers		
84%	OverTime and JobLevel	+
84%	YearsWithCurrManager and TotalWorkingYears	+
84%	JobLevel	+
84%	MonthlyIncome	+
84%	YearsAtCompany	+
84%	StockOptionLevel	+
84%	TotalWorkingYears	+
84%	YearsInCurrentRole	+
84%	Age	+

The Analysis

- Interestingly when I analyzed the most overtime job roles by different department, the top three roles that did the most overtime are Laboratory Technician, Research Scientist and Sales Executive which are the same job titles that have the highest attrition.



The Analysis

- Thus, IBM Watson with a predictive strength of 86% successfully predicts overtime as a driver of attrition.

What is a predictive model for **Attrition** ⊗ ? (Predictive strength: 86%)

Decision Rules

Tree

Decision rules show that OverTime and 9 other inputs predict Attrition.



Target Category

Yes



Rules

Records

67%



OverTime = Yes
JobLevel <= 1
StockOptionLevel <= 0

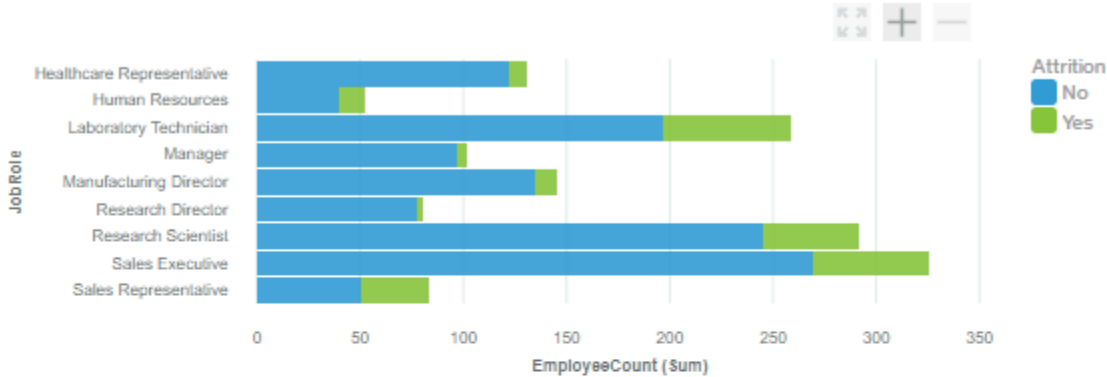
75

Attrition
 No
 Yes

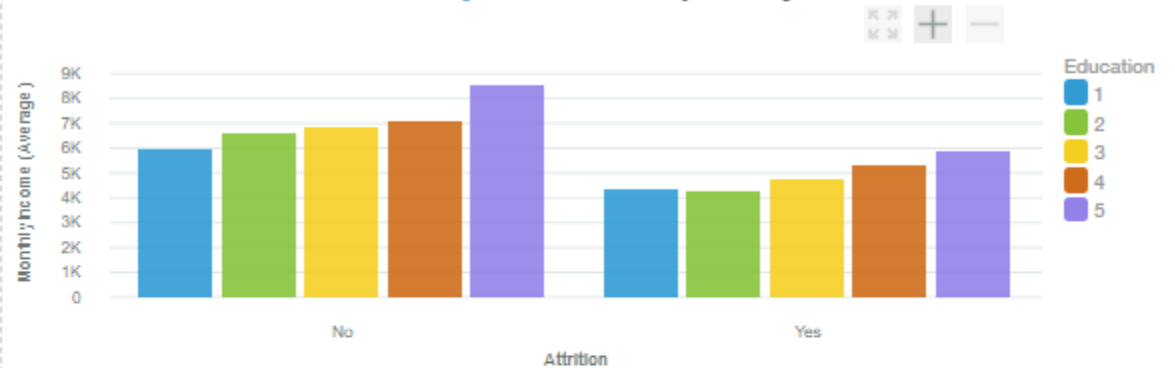
The Analysis

- Lastly I consolidated all the key observation points of the analysis of employment data to present it to the team members and seniors to act upon them.

How do the values of **EmployeeCount** compare by **JobRole** and **Attrition** ?



How do the values of **MonthlyIncome** compare by **Attrition** and **Education** ?



What is a predictive model for **Attrition** ? (Predictive strength: 86%)

Decision Rules Tree

Decision rules show that OverTime and 9 other inputs predict Attrition.

Target Category	Yes	Rules	Records
67%	<div><div></div><div></div></div>	OverTime = Yes JobLevel <= 1 StockOptionLevel <= 0	75

What is the breakdown of **Department** and **JobRole** ?



Conclusion

- By performing the data analysis I conclude the following:
 - There is no specific job department that is facing attrition. All the departments are going through this problem.
 - Age is not a much factor for attrition as employees of almost all the age group are leaving the company.
 - Income is an underlying factor in the attrition as the employees that left the company were paid less than those that are currently working.
 - Not much difference of paygrade between different education levels can be one of the factors that leads to attrition and is to be worked upon.
 - Making employees do Overtime is one of the key factors for attrition as the employees that work overtime are the one that are resigning.