IBM Employee Dataset Findings and Summary

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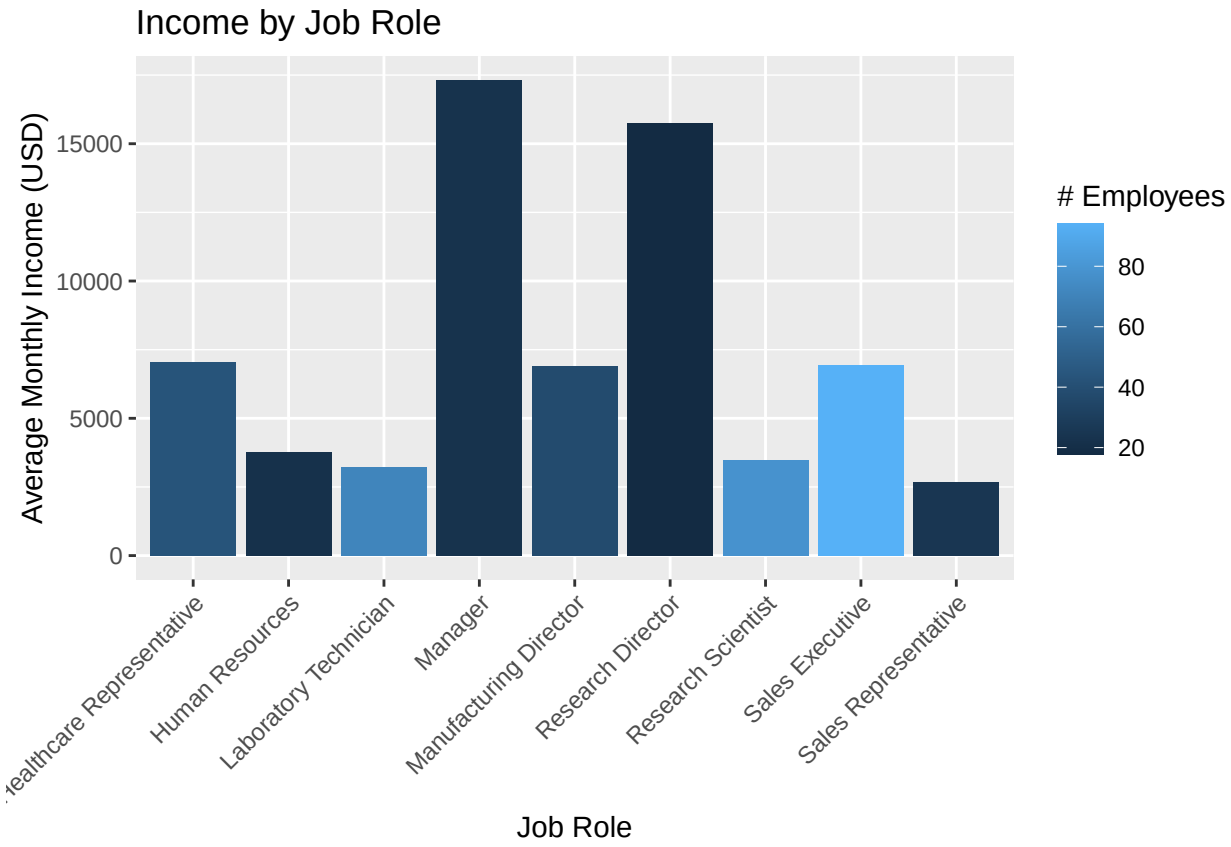
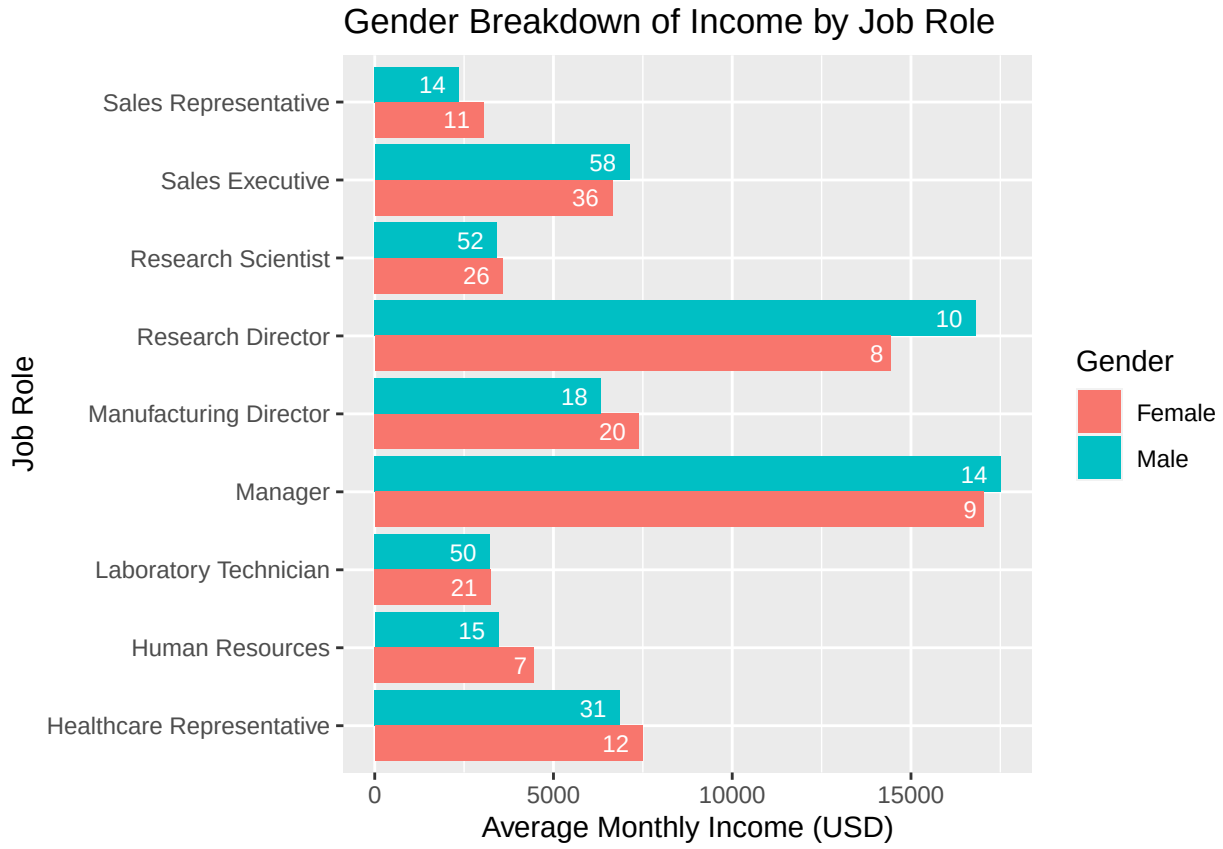
Question #1: Which job role has the highest average monthly income?

- On average, Managers earn the highest monthly income. As shown by the shading legend, the Sales Executive position is the most abundant job role at IBM (94 employees) while the Research Director, Manager, and Human Resources positions are the least abundant job roles at IBM (only ~20 employees in each role).



Question #2: How does average monthly income vary between males and females?

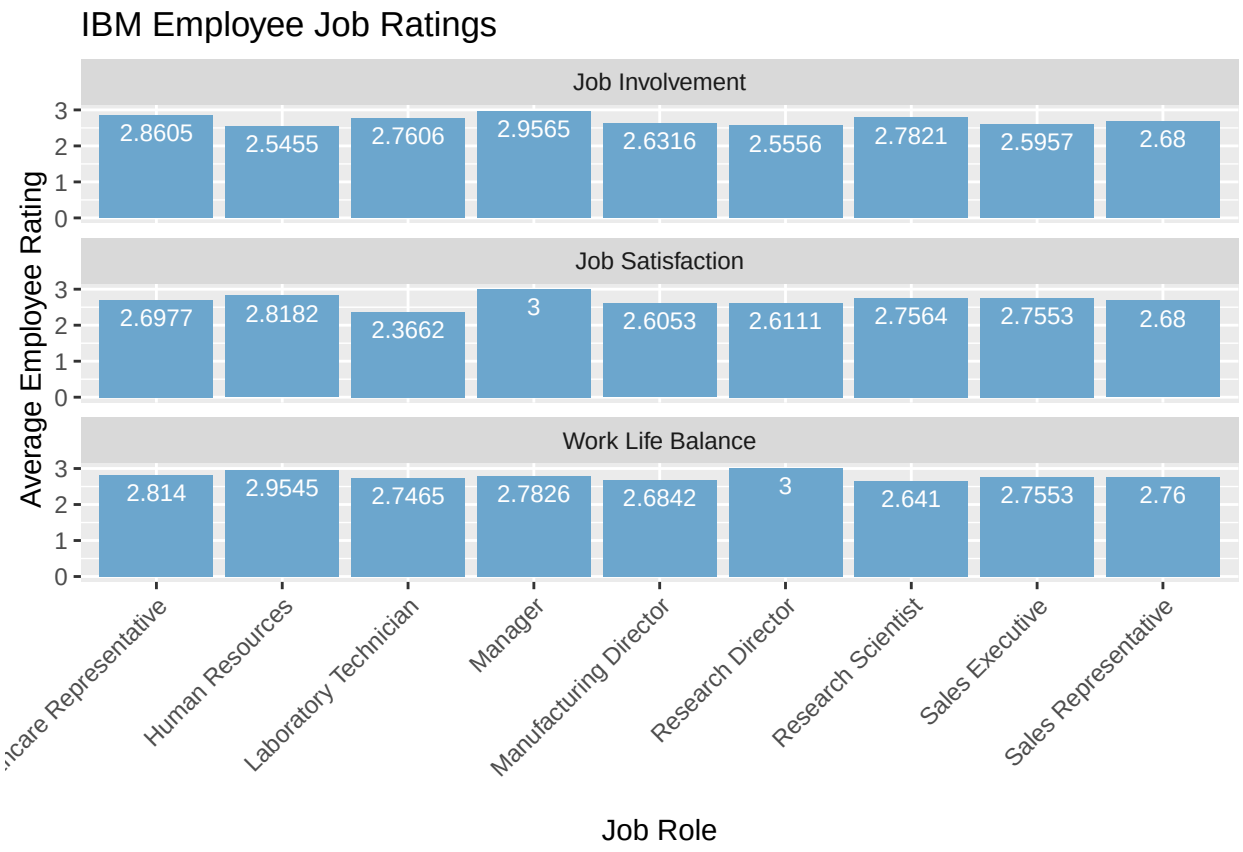
- For 6 out of 9 job roles, females have a higher average monthly income than their male counterparts; the exceptions to this pattern are the Manager, Research Director, and Sales Executive roles. It should be noted that there are proportionally more males than females in almost every job role (except for Manufacturing Director), as shown in white text.



Question #3: How do employee ratings of their work experiences vary across job roles?

- Overall, there are marginal differences in ratings of job involvement, job satisfaction, and work life balance (on a 4 point scale). Notably, the highest-paid job role of Manager reports the highest job satisfaction, on average.

```
## Warning: The labeller API has been updated. Labellers taking ‘variable‘ and
## ‘value‘ arguments are now deprecated. See labellers documentation.
```

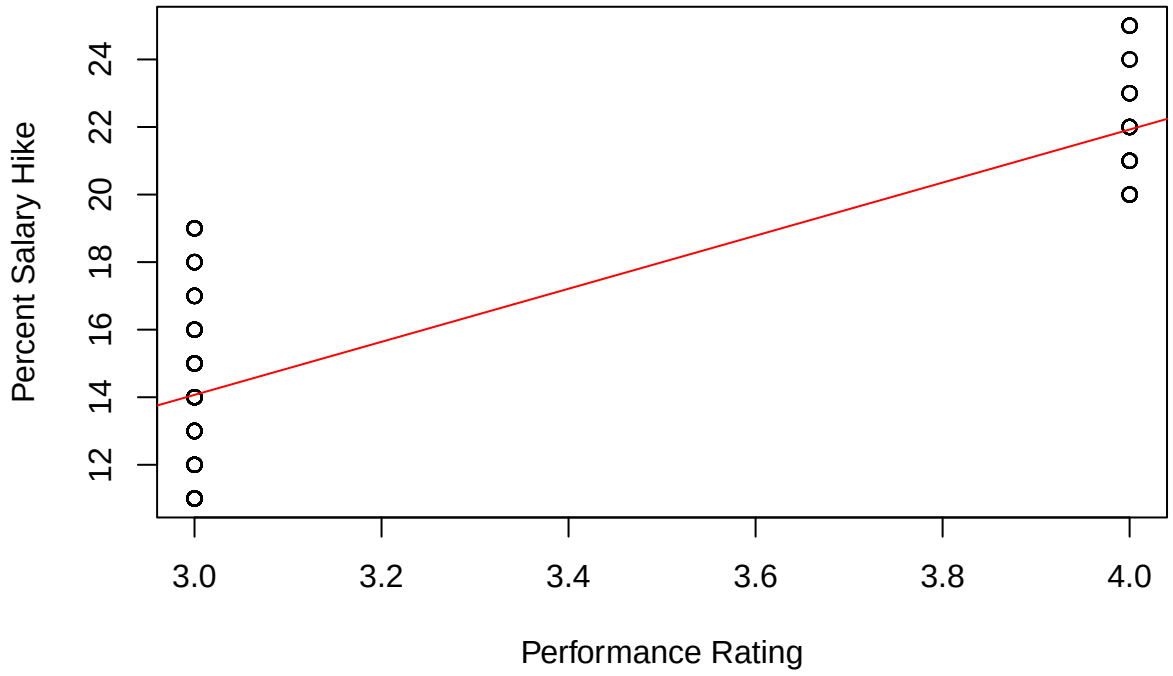


Question #4: What is the relationship between performance ratings and salary hike percentages at IBM?

- Linear Model: $\hat{y}$ = -9.4979 + 7.8558x, i.e. every 1 point increase in performance rating is associated with a 7.8558% salary hike.

```
##
## Call:
## lm(formula = employee$PercentSalaryHike ~ employee$PerformanceRating)
##
## Coefficients:
##                (Intercept)  employee$PerformanceRating
##                     -9.498                       7.856
```

- Scatterplot with regression line:



- Correlation coefficient (r) = 0.78, indicating a strong, positive, and linear relationship between performance rating and salary hike percentage.

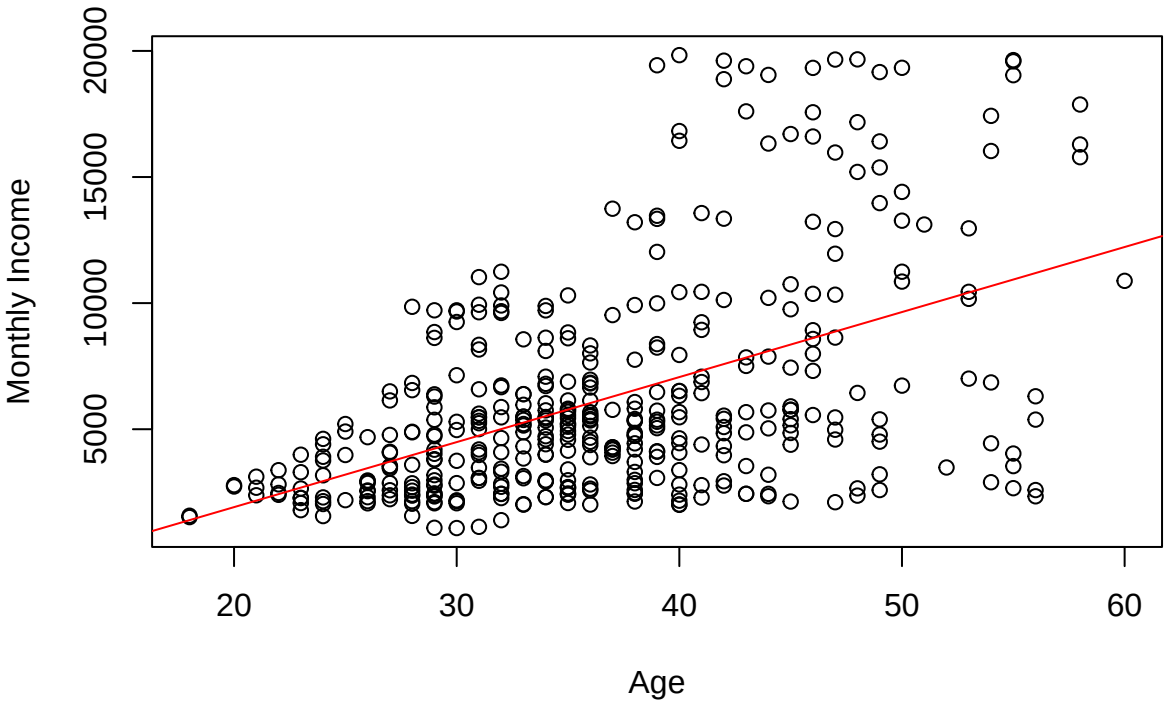
```
## [1] 0.7825924
```

Question #5: What is the relationship between age and monthly income?

- Linear model: $\hat{y}$ = -3246.812 + 257.861x, i.e. every 1 year increase in age is associated with a $257.86 increase in monthly income.

```
##
## Call:
## lm(formula = employee$MonthlyIncome ~ employee$Age)
##
## Coefficients:
##  (Intercept)  employee$Age
##      -3246.8         257.9
```

- Scatterplot with regression line:



- Correlation coefficient (r) = 0.50, indicating a moderate, positive relationship between age and monthly income.

```
## [1] 0.4976666
```