Key Predictors
That Foreshadow Employee Contribution
@ IBM

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Why Is It Important ?

Great employees = Great company

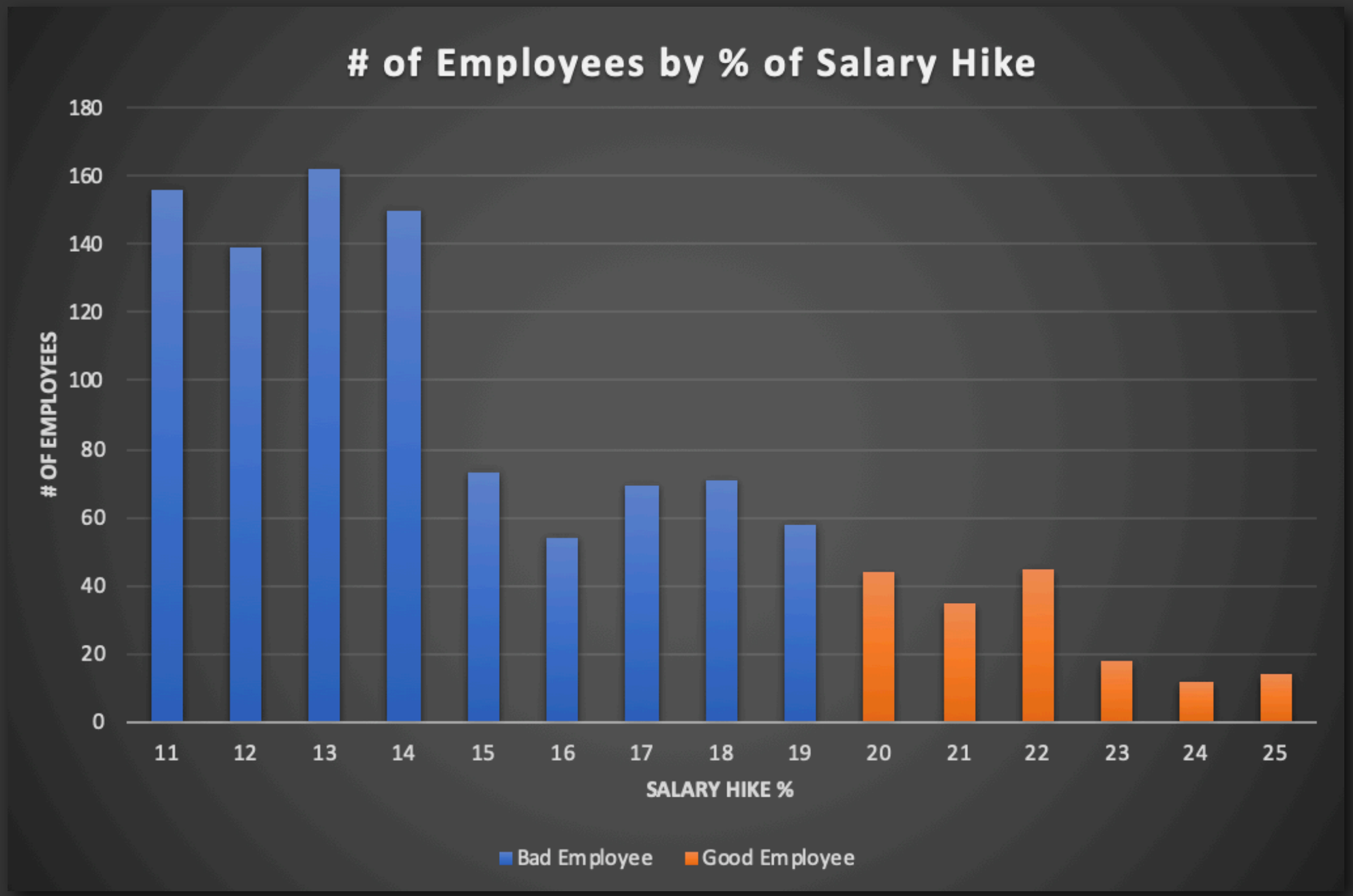
Scenario

- We are the HR department at IBM, and we are looking for a talented candidate from Carlson MSBA.
- Who should we hire?

Data Preparation

- Data source
  - IBM Employment Data (Extracted from Kaggle)
- Variables
  - 31 in total, used 6
  - Response Variable: Avg % Yearly Salary Hike
- Assumptions:
  - IBM awards salary hikes to high performing employees judiciously.

Good Employees Get Higher Salary Hikes



Feature Engineering

- Features
  - % yearly salary hike
  - Age when hired
  - Previous years of experience
  - Previous number of companies
  - Annual growth rate for the salary hike

Response		Predictors
% Yearly Salary Hike	~	Gender Age when hired Education Field Education Level Previous years of experience # of previous companies

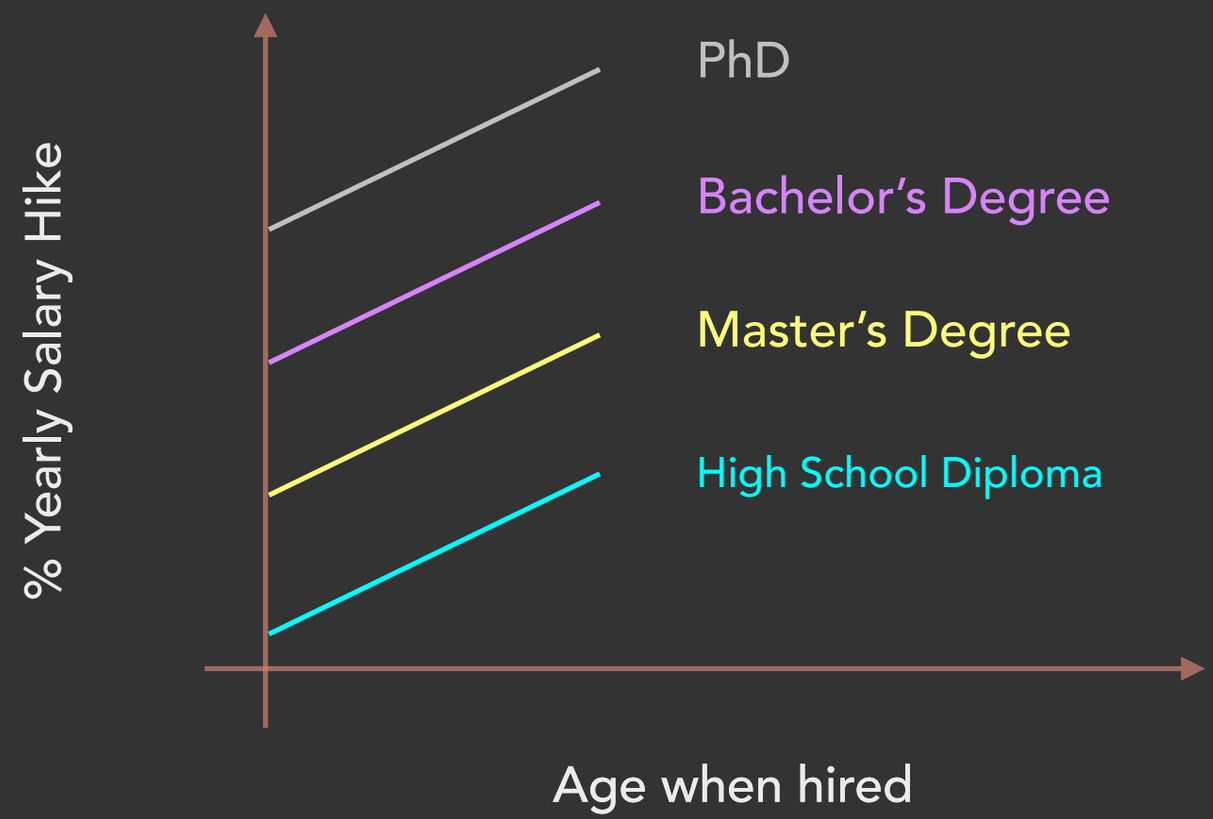
Model Construction

	Gender	Age when hired	Education Level	Education Field	Previous Years of Experience	Previous # of companies
Model 1	✓	✓	✓	✓	✓	✓
Model 2	✓	✓	✓		✓	✓
Model 3	✓	✓	✓			

Model Selection

	S	R^2 ☹️	Highest p-value
Model 1	3.127	0.07086	0.943463
Model 2	3.124	0.06834	0.612700
Model 3	3.122	0.06780	0.270000

MSBA Worth It ?



This question is only raised for educational purpose. Don't drop out.

Things We Found

Relationships

Age when hired ↑ → % Yearly Salary Hike ↑

Gender-Male $\hat{\beta}$ = 0.21
Gender-Male p-value = 0.27

Insights

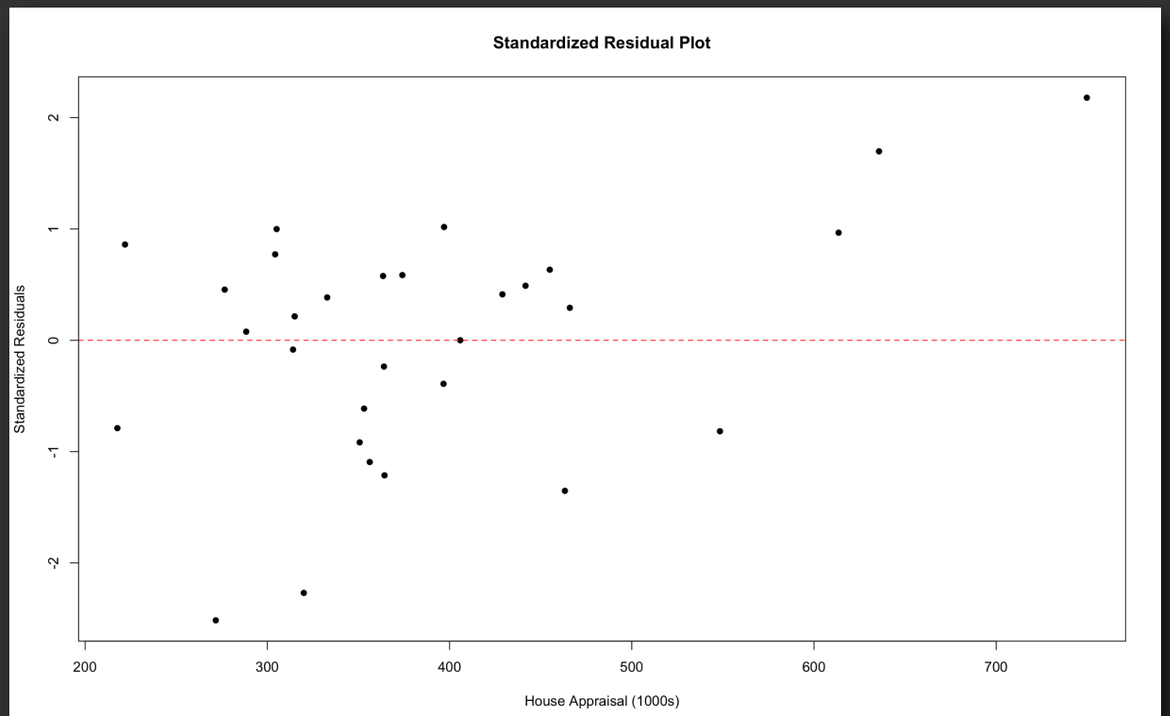
Relationship is in line with what we'd expect

There is a 27% chance we would have seen these results if in fact there is no relationship between Gender & % Yearly Salary Hikes, holding age when hired fixed

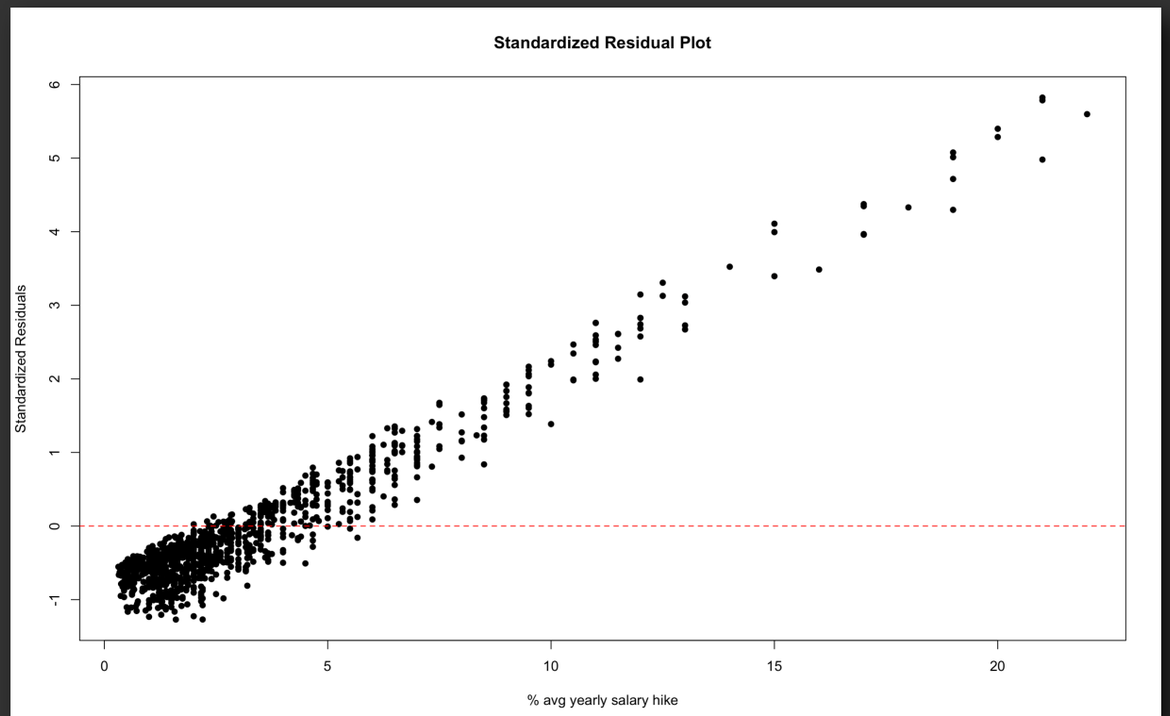
Keep in mind: Our R^2 is 0.06788
And…

Residuals Normally Distributed ?

Hope



Reality



Shapiro-Wilk Normality Test:
W = 0.755, p-value = 2.2 e-16

Back to our Question...

Who should we hire?

Back to our Question...

Logically, Probably not a good idea to
hire someone who is
Old & Dying

Thank you