

Data Coin

Regression Analysis on Data Scientist Salaries as Reported on Glassdoor

Celia Sagastume, September 2021

Data Scientist

Job Search



Salary Range

Per Job Posting



Regression Model on Data Scientist Salaries as Reported on Glassdoor

Model Notes

- 1,305 Samples
- 36 cities in the United States
- Scraped using Selenium

- Generated Features:
 - Age
 - Geolocation
 - Industry Map
- Binary Mapping:
 - Additional Pay
 - Internship
- Interaction term
 - West & Tech Industry
- Target Variable:
 - Salary

Glassdoor Salary Posting Search by City

- Salary
- Salary Range
 - Low, 25 %, 75 %, High
- Additional Pay
 - Cash Bonus
 - Stock Bonus
- Total Pay
- Glassdoor Review Data
 - Reviews, Jobs, Salaries, Interviews, Benefits, Confidence Score
- Internship
- City

Glassdoor Company Information by Result

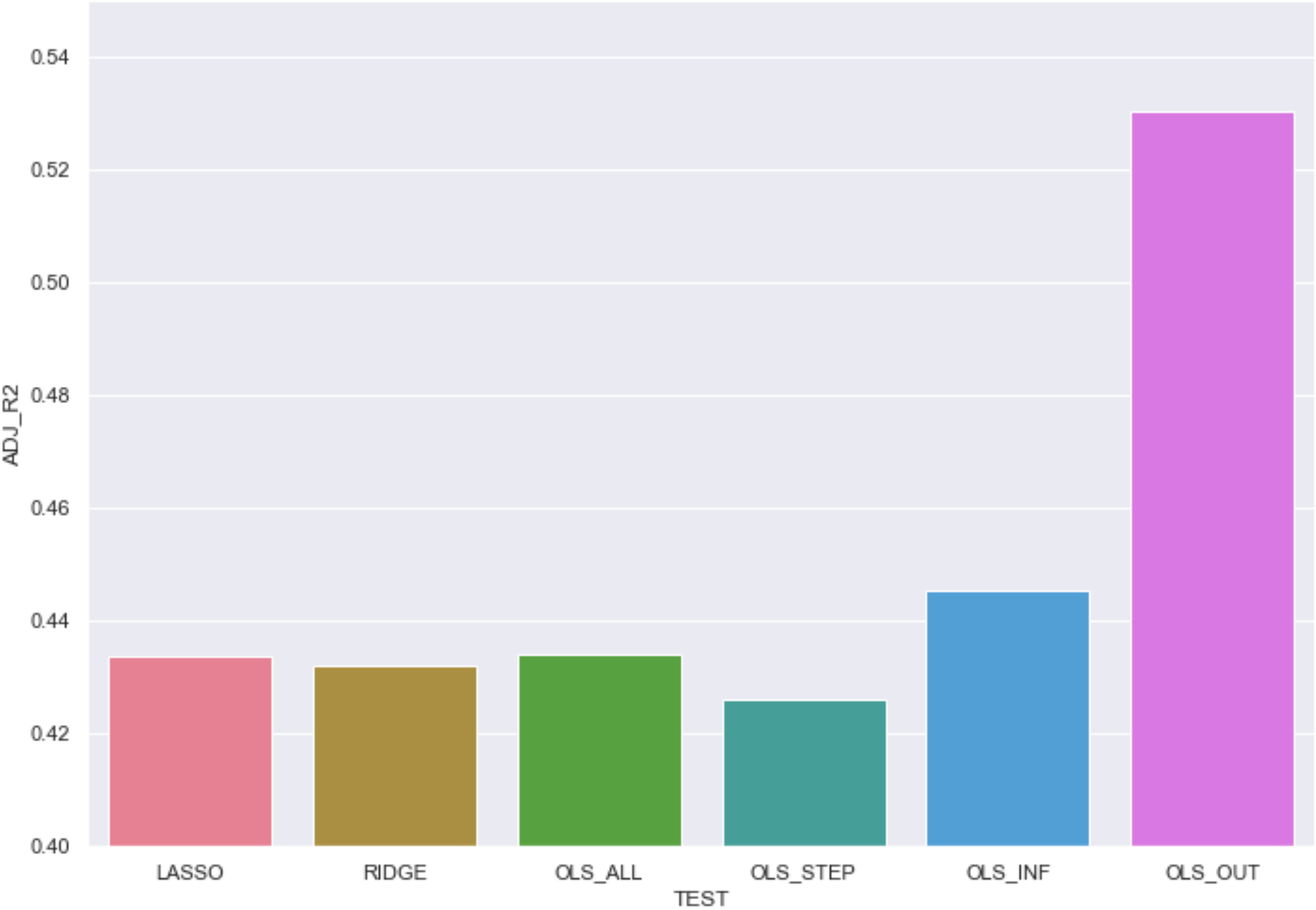
- Company Type
 - Public, Private, Government, Education, Subsidiary
- Company Size
 - Categorical
- Industry
- Headquarter
- Year Founded

Numbeo Cost of Living Index by City

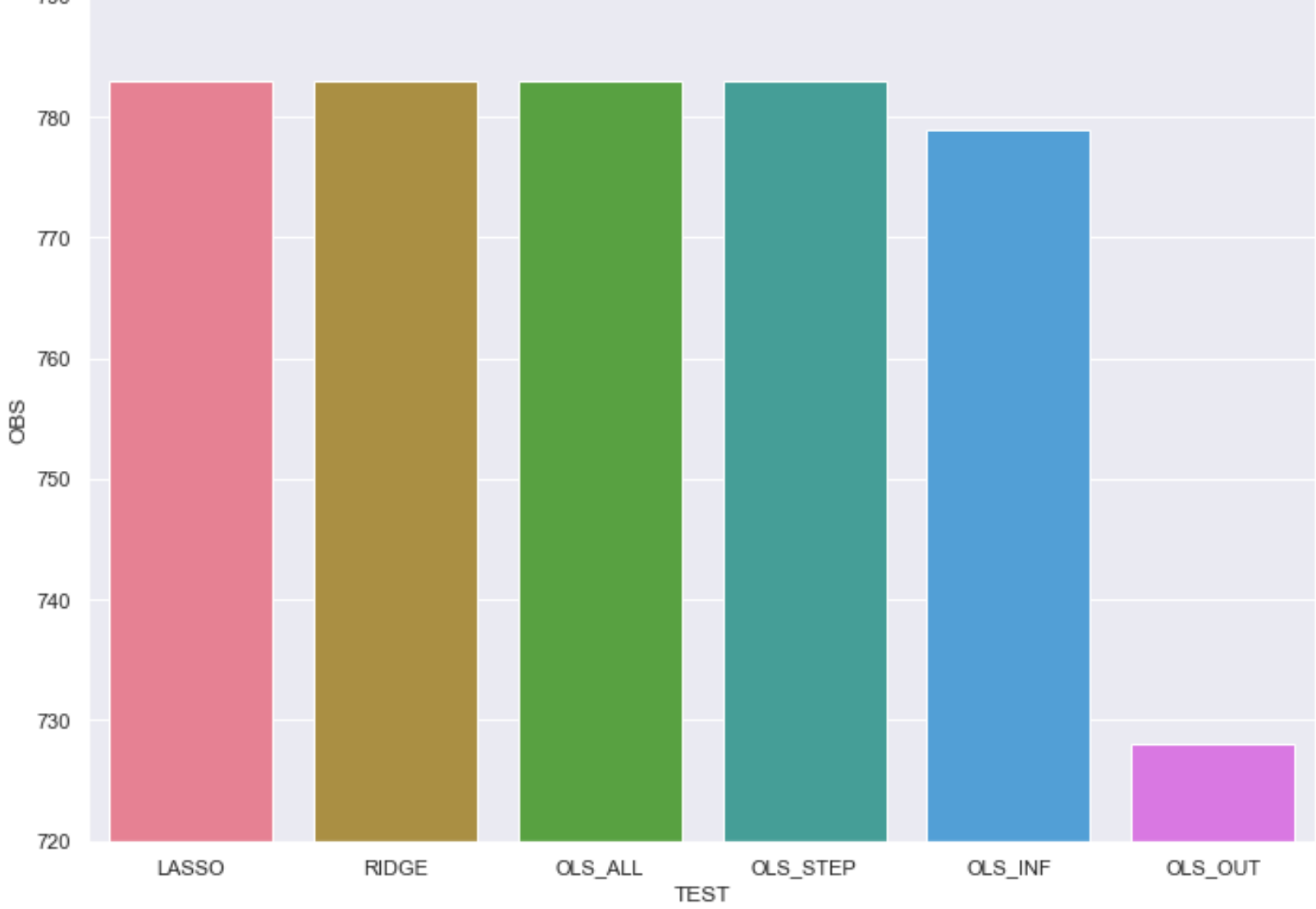
- Cost of Living
- Purchasing Power
- Rent
- Rent + Cost of Living

Model Performance

Bar Plot of Adjusted R2 Values per Test



Bar Plot of Observations per Test

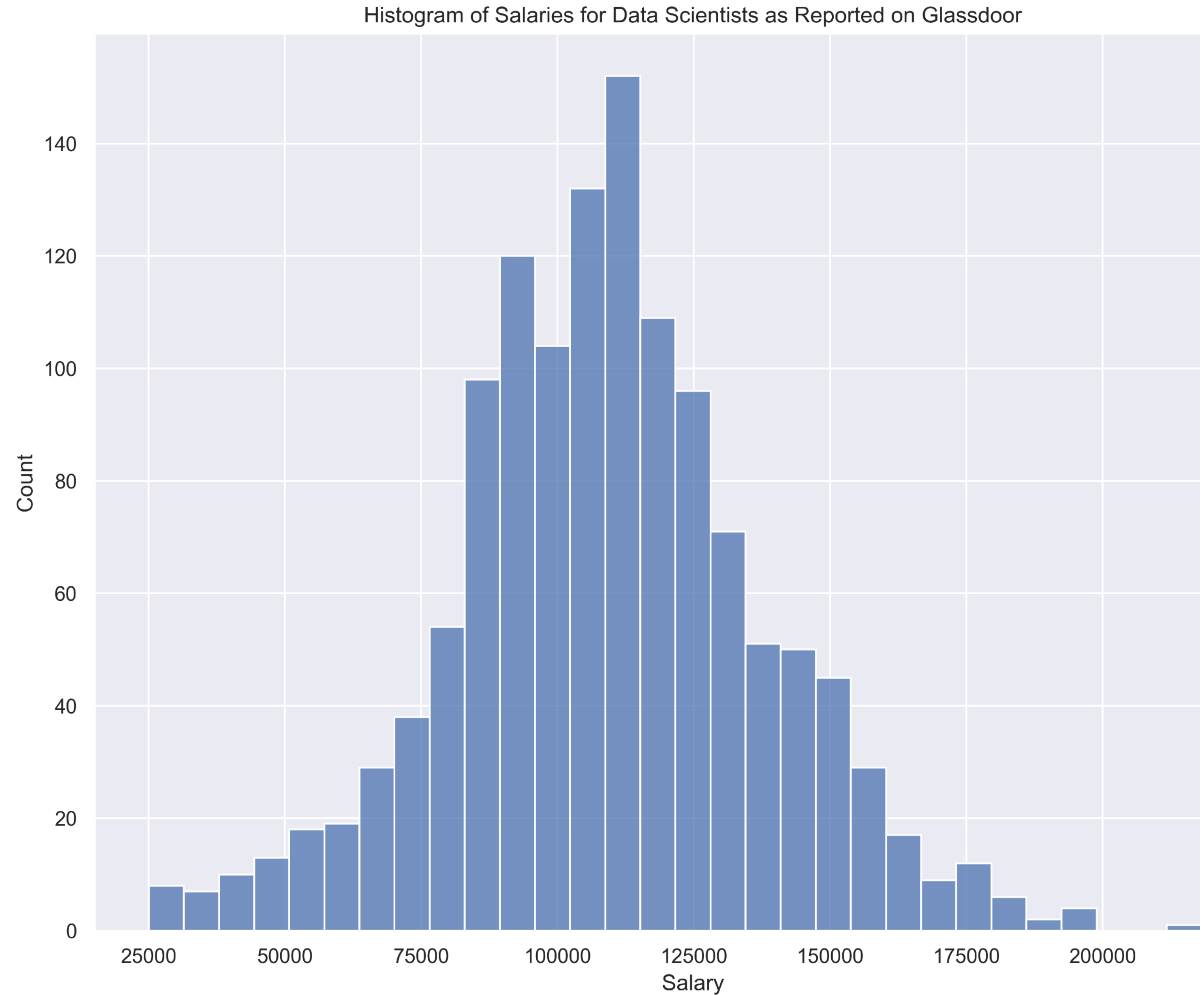


Performance Notes

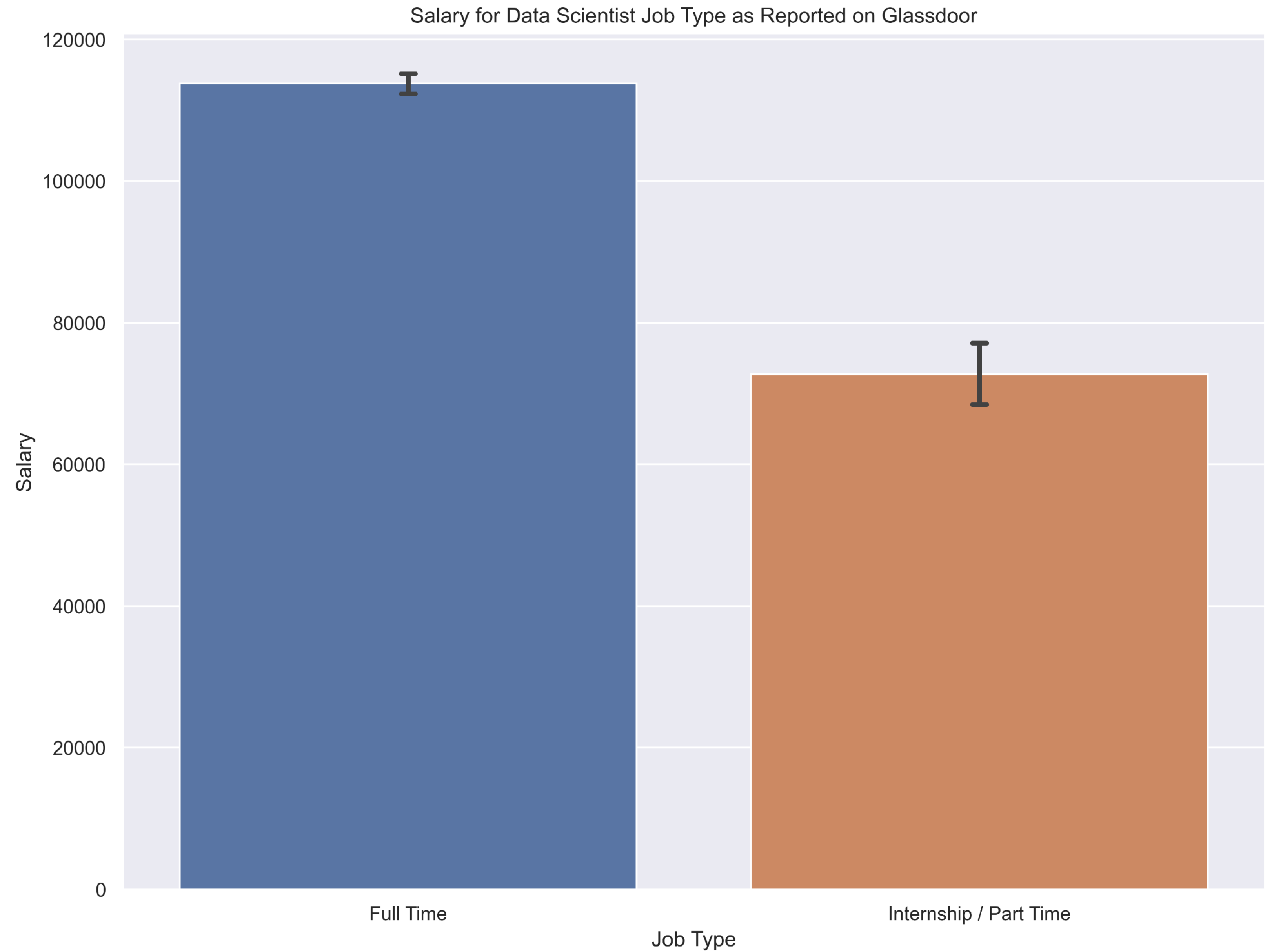
- Best R² Value:
 - Ordinary Least Squares with Outliers Removed, *Adjusted R² = .530*
 - *Outliers Removed: 55*
- Second Best R² Value:
 - Lasso CV, *Adjusted R² = .433*
 - *No outliers removed*
 - *MAE = 16138.464503*
 - *RMSE = 20873.19*
- *Final Model: Lasso*
 - *MAE = 16,669*
 - *RMSE = 22,055*
 - *Adjusted R2 = .401*

Data Scientist Salary

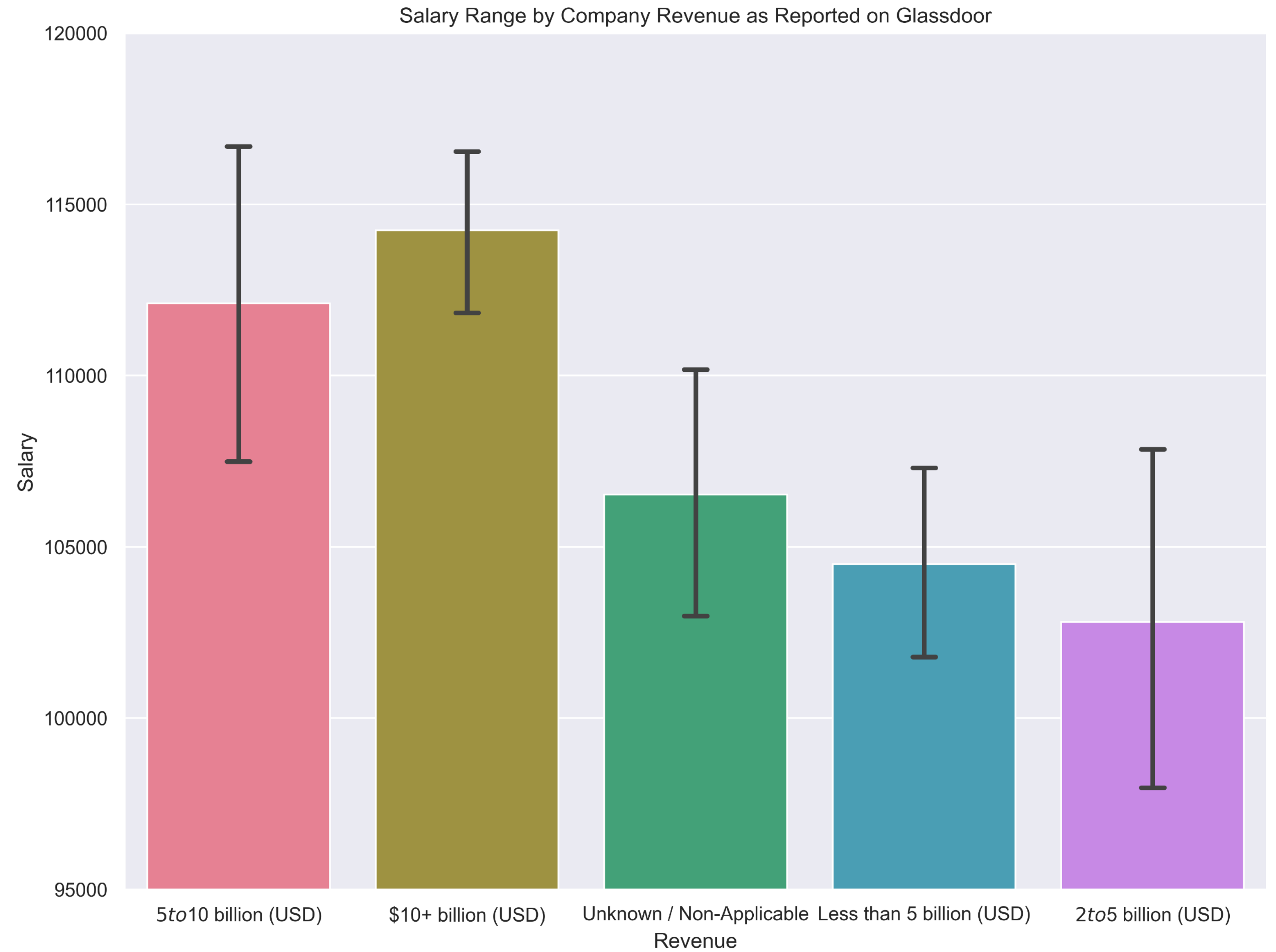
Mean: 109,038.829
Standard Dev: 28, 715



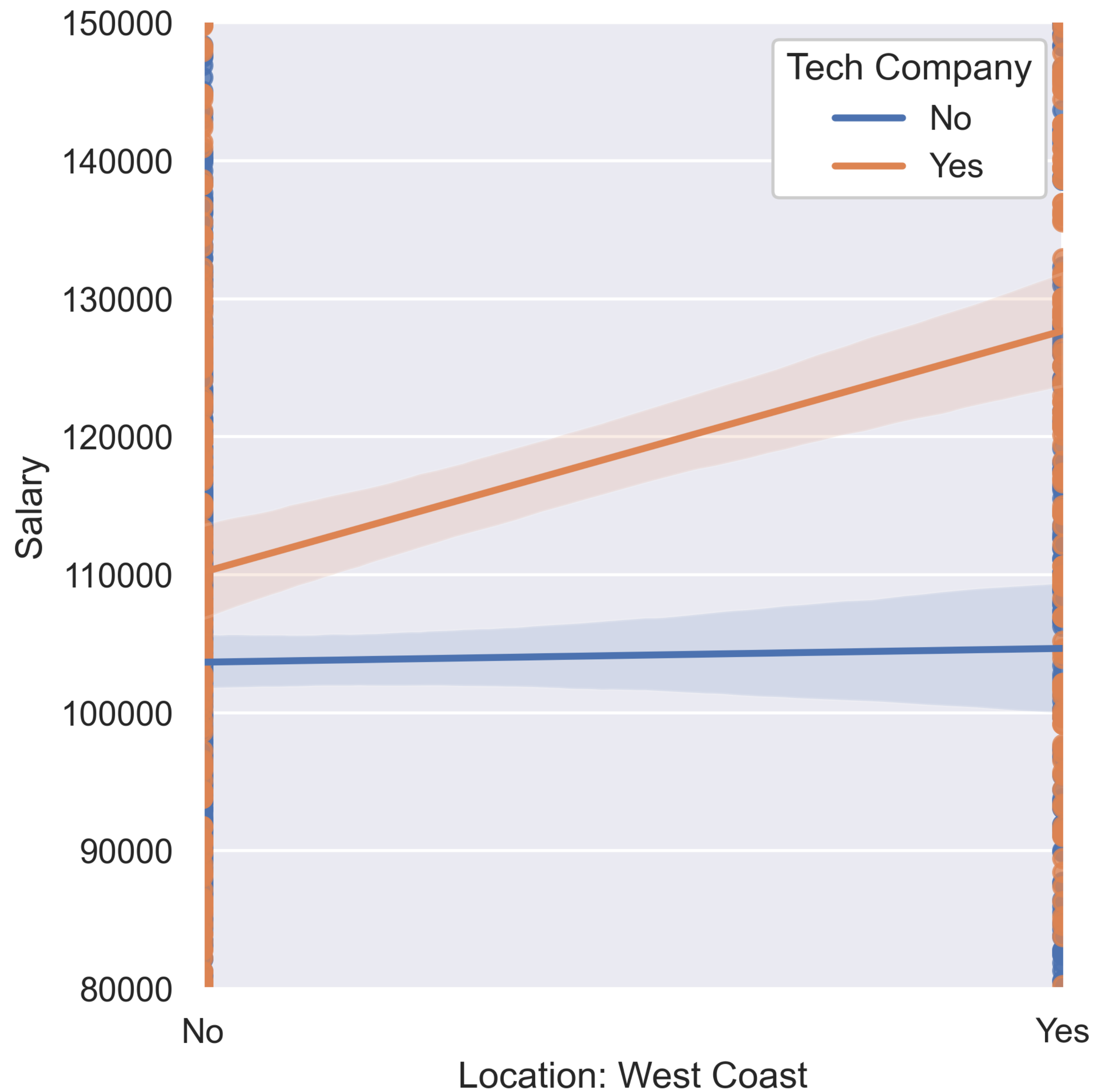
Internship
↓37953.57



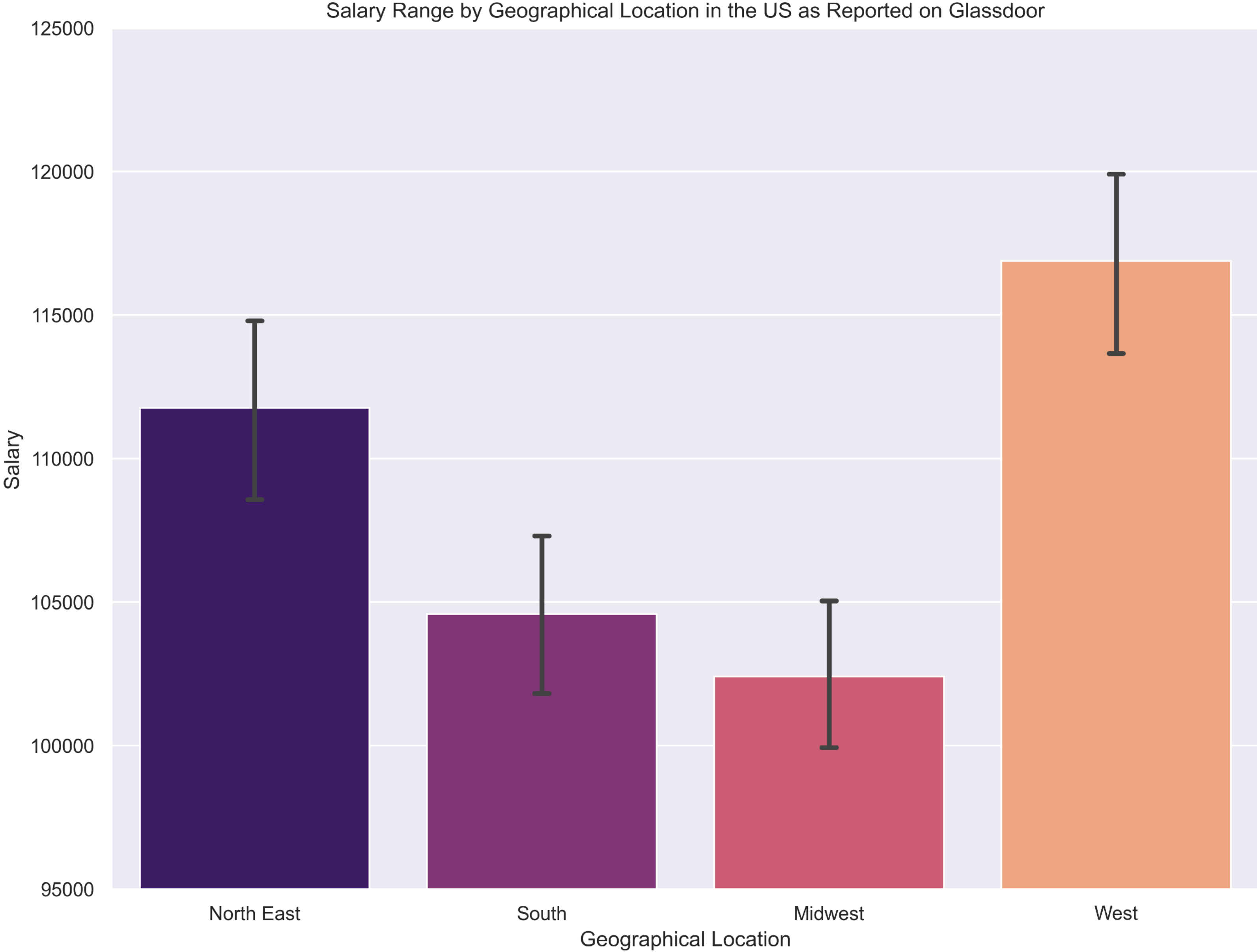
Revenue
↓ 15144.99
(2 to 5 Billion compared to 10 + Billion a year)



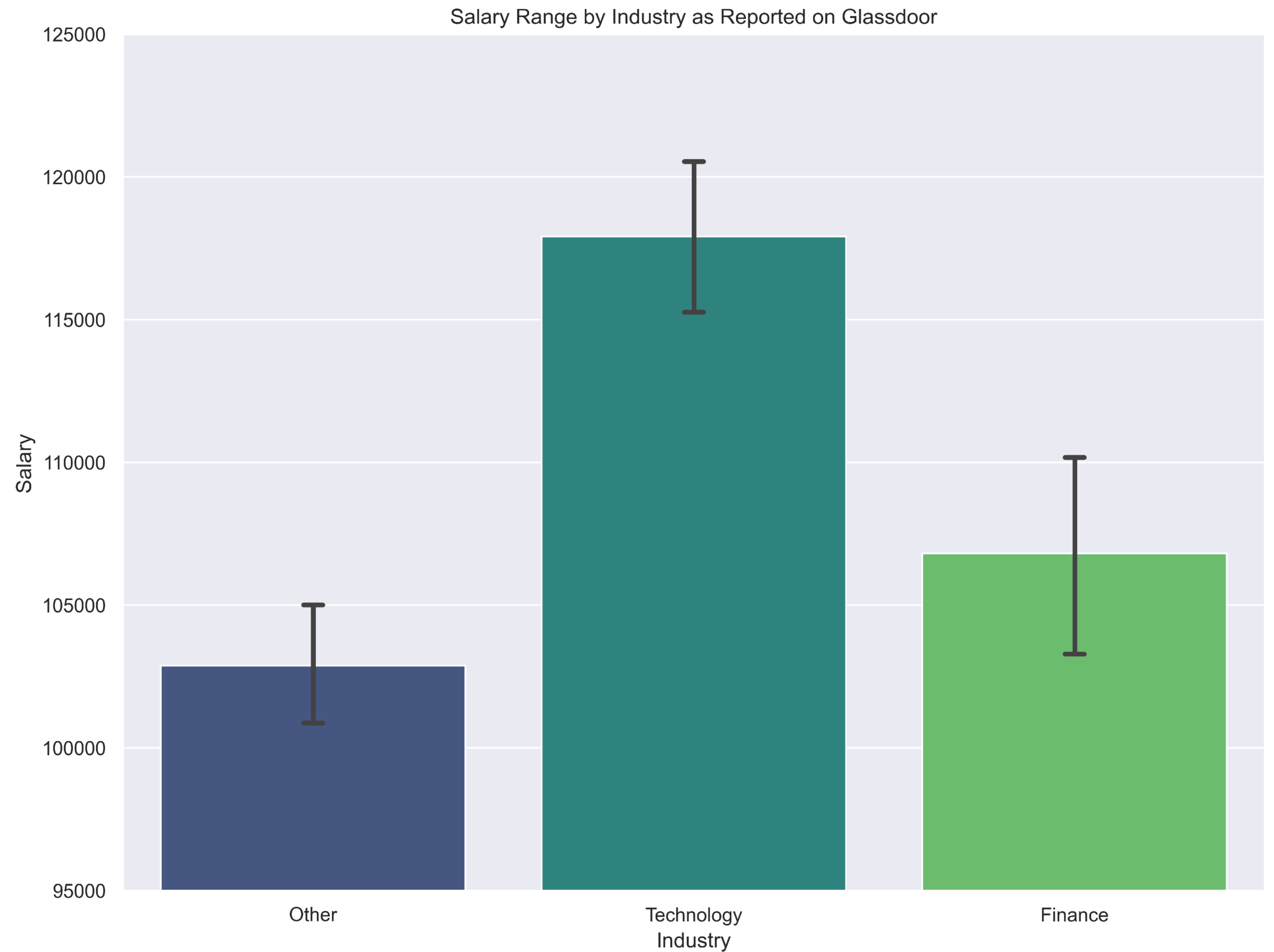
**Interaction:
West Coast &
Technology**
↑ 11300.91



Interaction:
West Coast
↑ 11300.91



**Interaction:
Technology**
↑ 11300.91



Next Steps

- Interesting Findings:
 - Cost of Living Coefficient varied by data set
 - (Train: -28.14, Val: 368.99, Test: -75.92)
- Consider Headquarter of Company in conjunction with City of Job Posting
- Take into account Seniority level
- Language associated with Job Description
 - “Machine Learning” vs “Analyst”





Questions