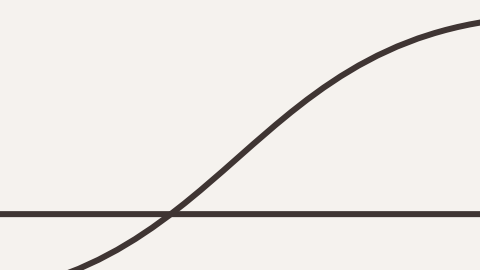




2019 Annual Business Survey Analysis

By Daniel Rose, Cheyenne Peterson, Zach Bonk, Clara McGrath



Initial Questions

- Which states have the most of which industry groups?
- Which industry groups have the most employees?
- Which industry group has the highest payroll?
- Gender by industry group?
 - How much of a difference is there?
 - Pay by gender?
- How does technology use affect salaries?
 - What about revenues?
- How do salaries differ across states depending on technology use?

Data

Importing

```
url = f"https://api.census.gov/data/2018/abscs?get={get}&for=us:*&key={apikey}"
```

```
stateurl = url = f"https://api.census.gov/data/2018/abscs?get={get}&for=state:*&key={apikey}"
```

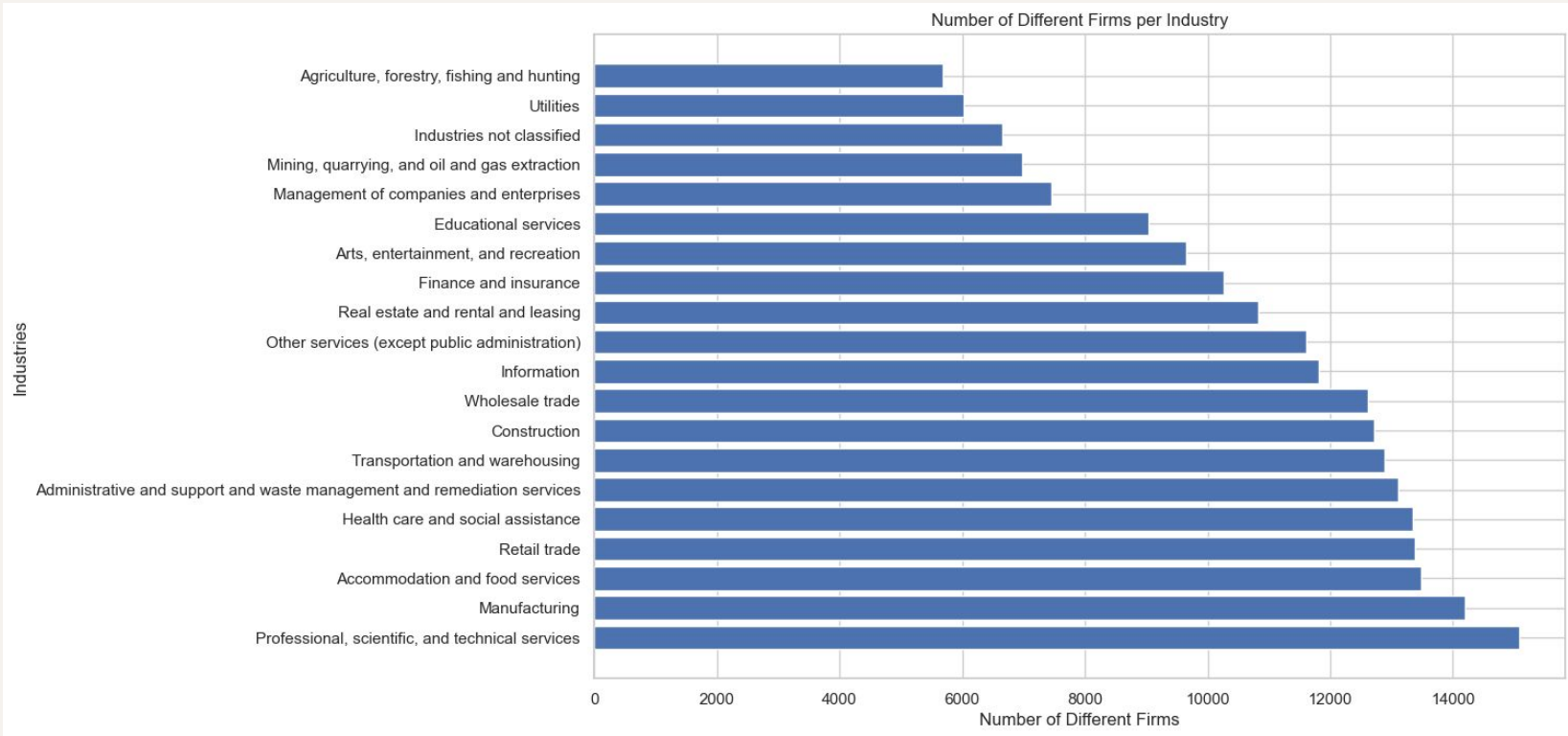
Cleaning

Kept labeled versions of columns

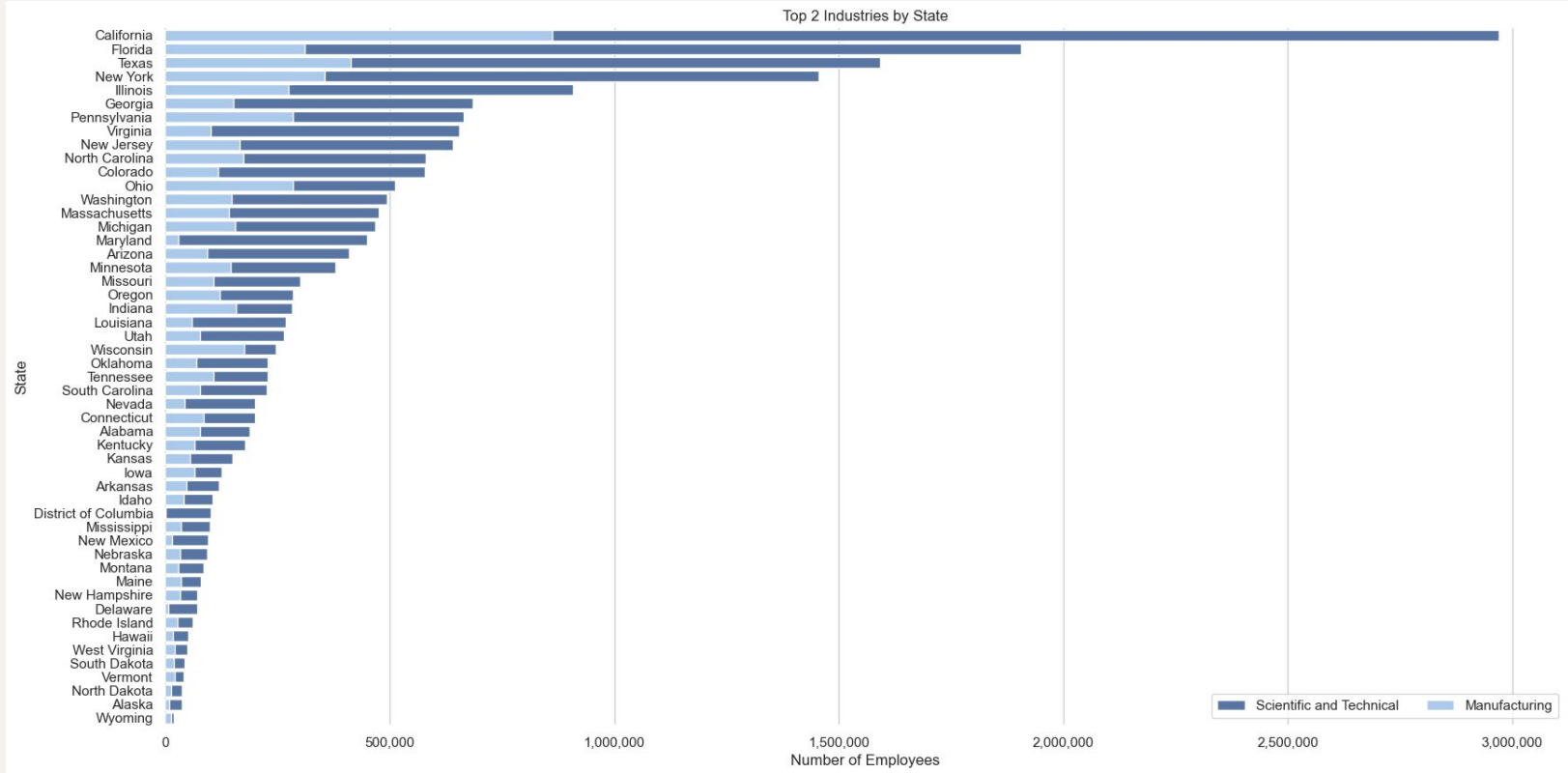
Converted numerical columns to int

Company Summary

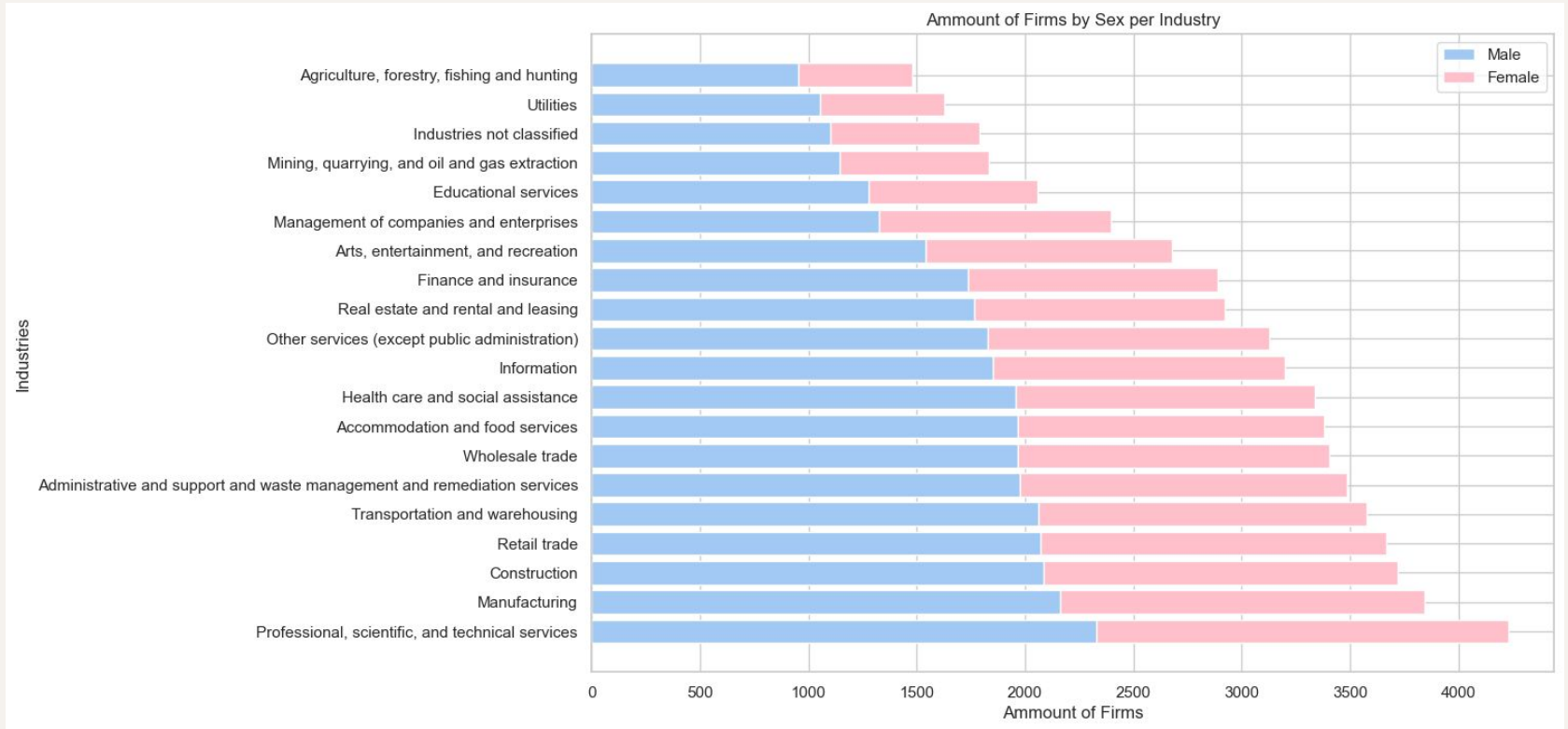
Firms per Industry



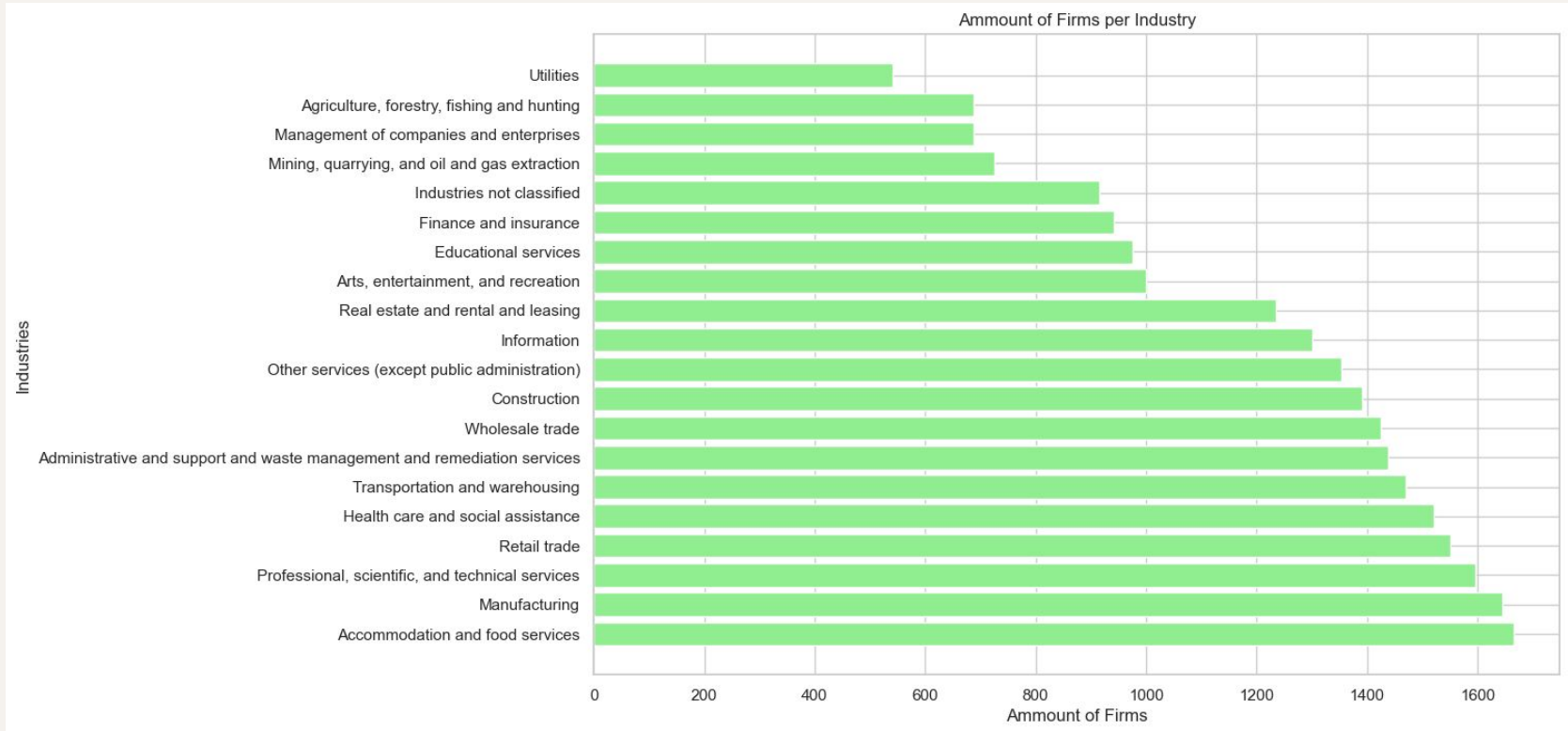
Employees in top Industries



Industry by Sex



Equally Male/Female

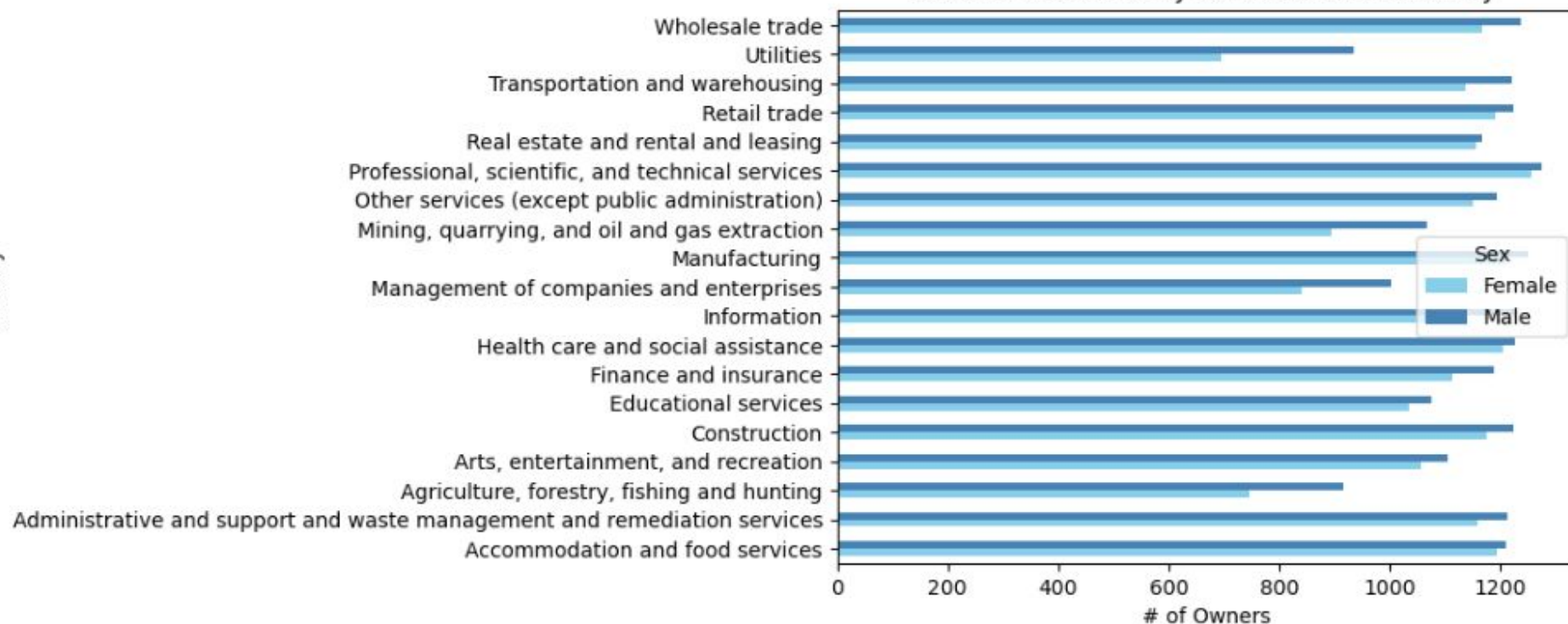


Business Owners

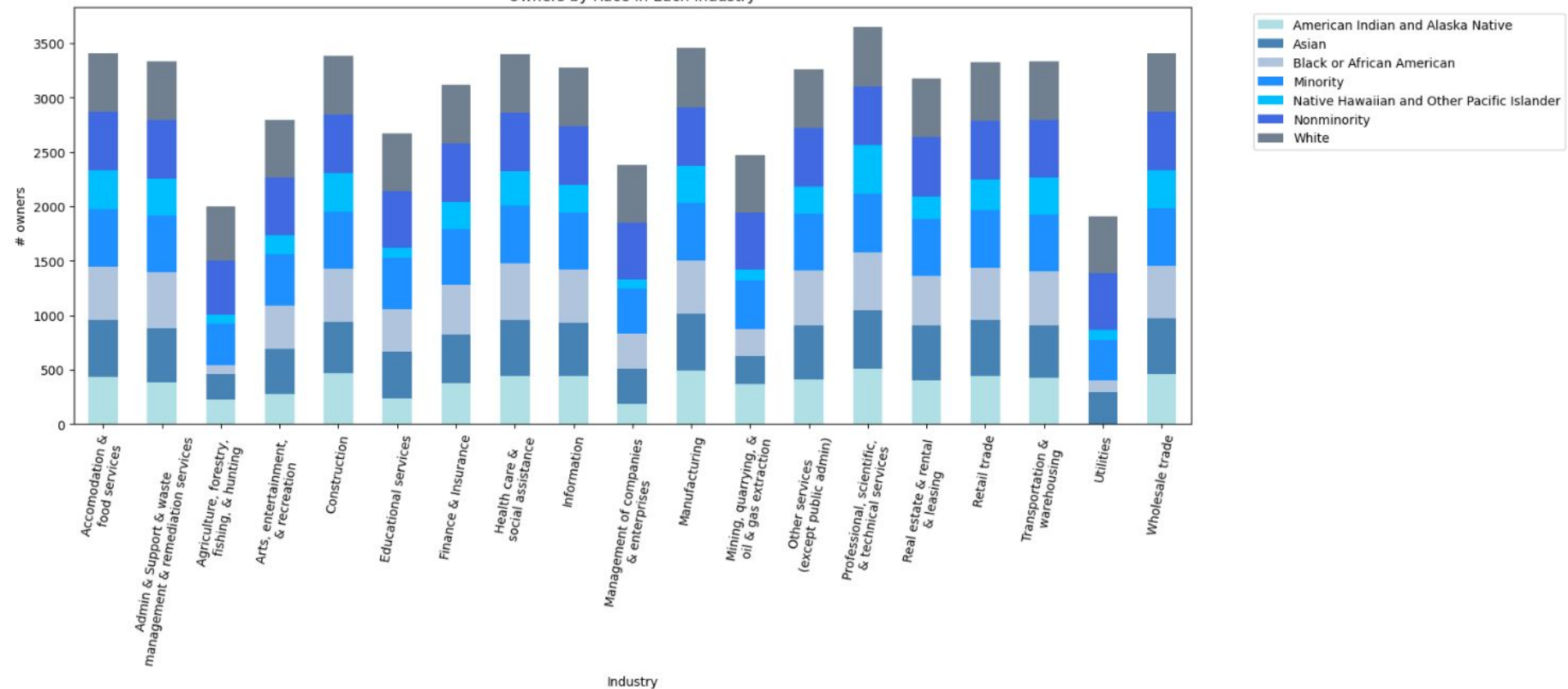
Initial Questions

- How does gender differ among business owners?
 - Are there significant differences across industries?
- What is the racial breakdown of business owners?
 - Across industries?
- Primary source of income -> is there a difference between male vs. female?

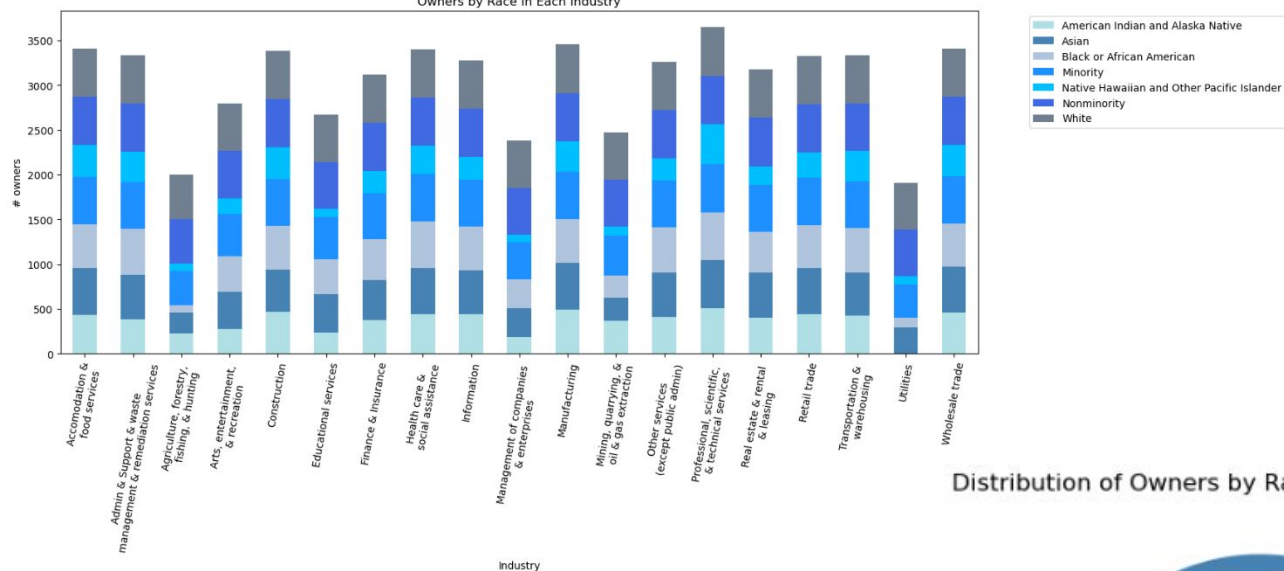
Number of Owners by Gender in Each Industry



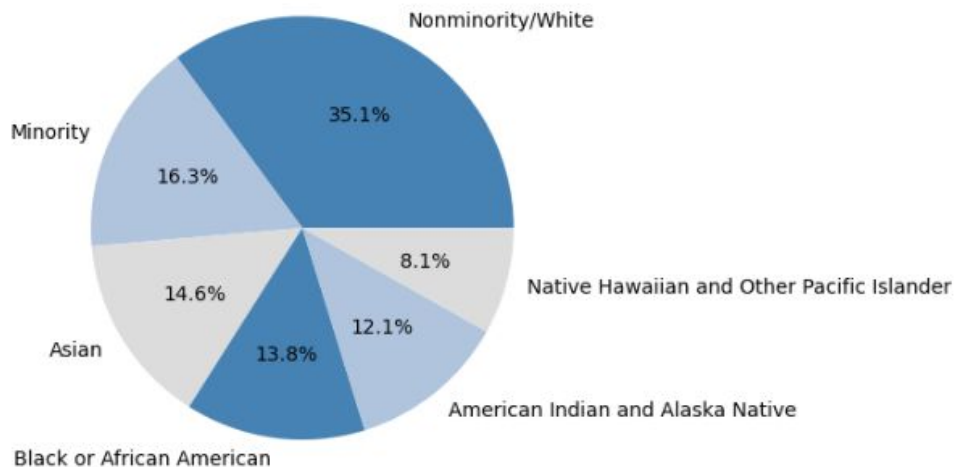
Owners by Race in Each Industry



Owners by Race in Each Industry

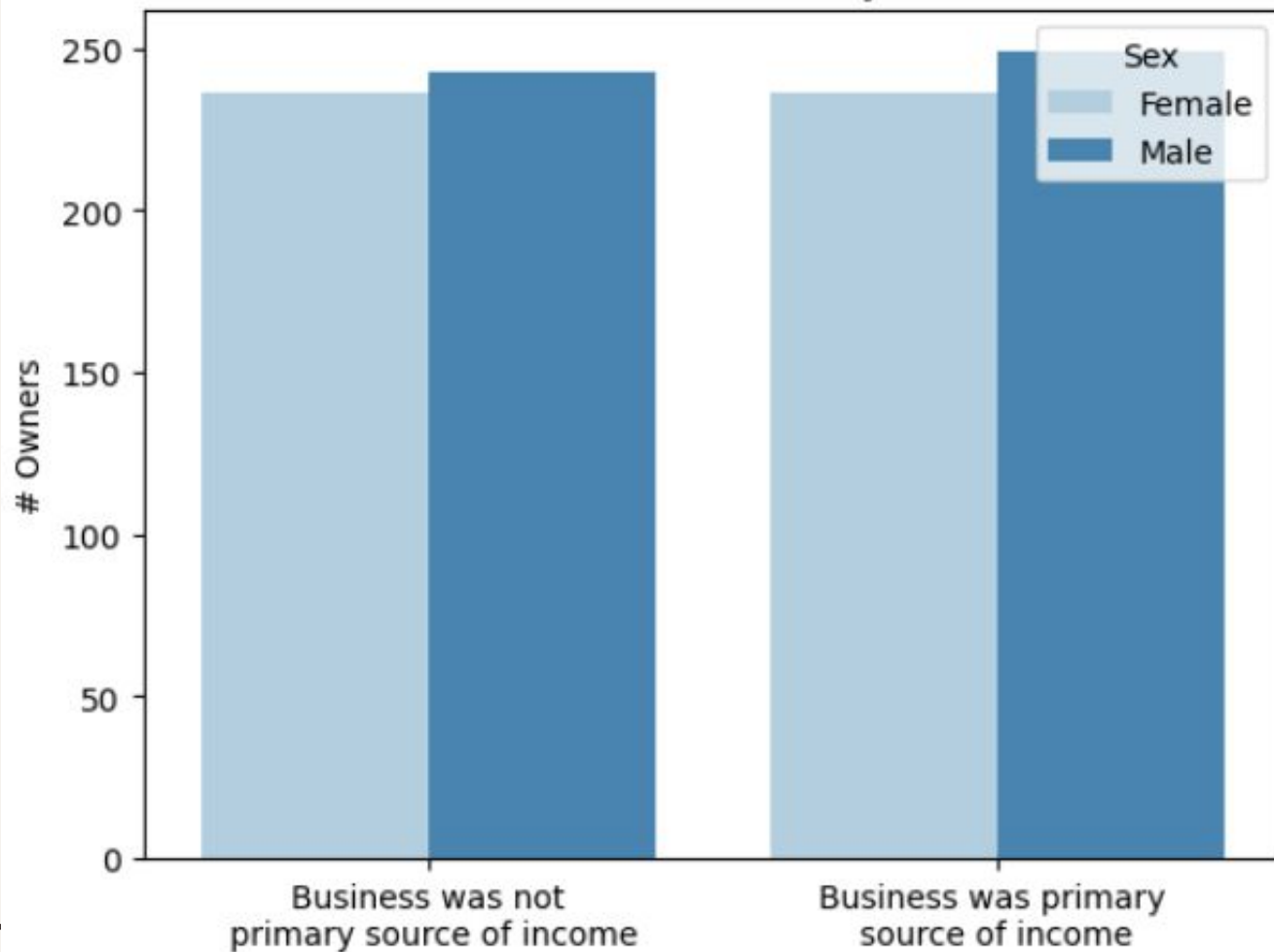


Distribution of Owners by Race across All Industries



**Nonminority & White grouped together →

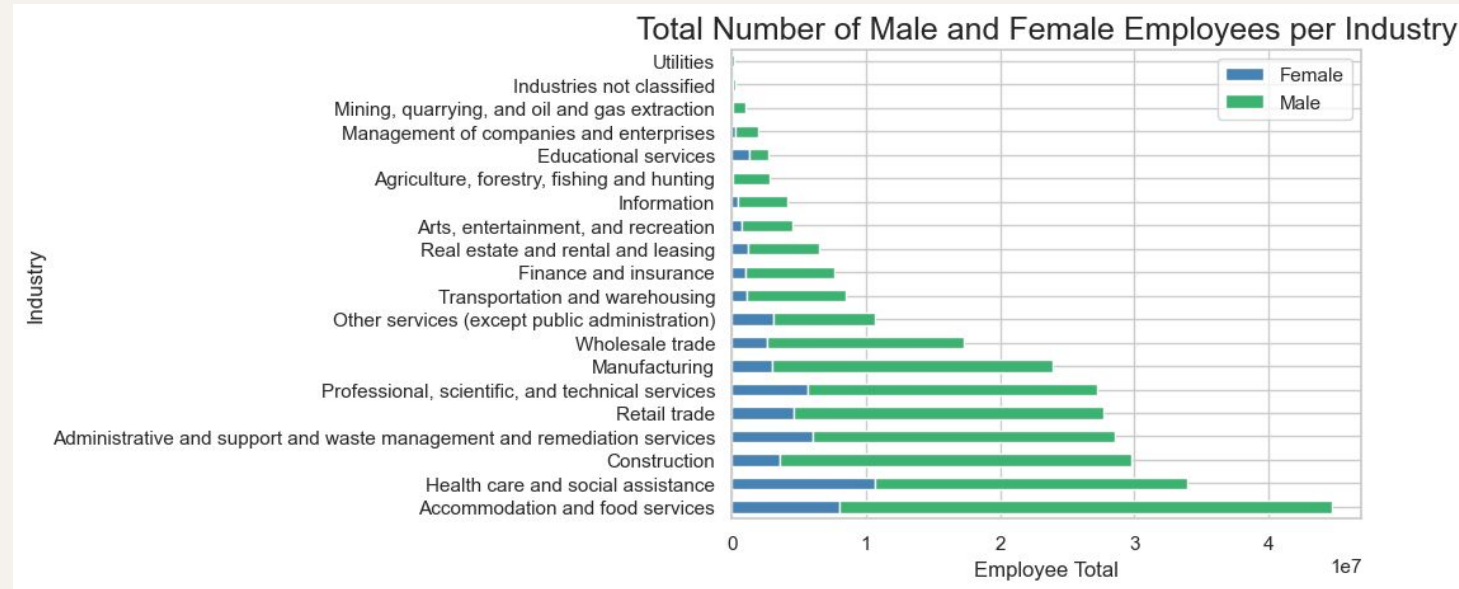
Male vs. Female Owners on Primary Source of Income



Business Characteristics

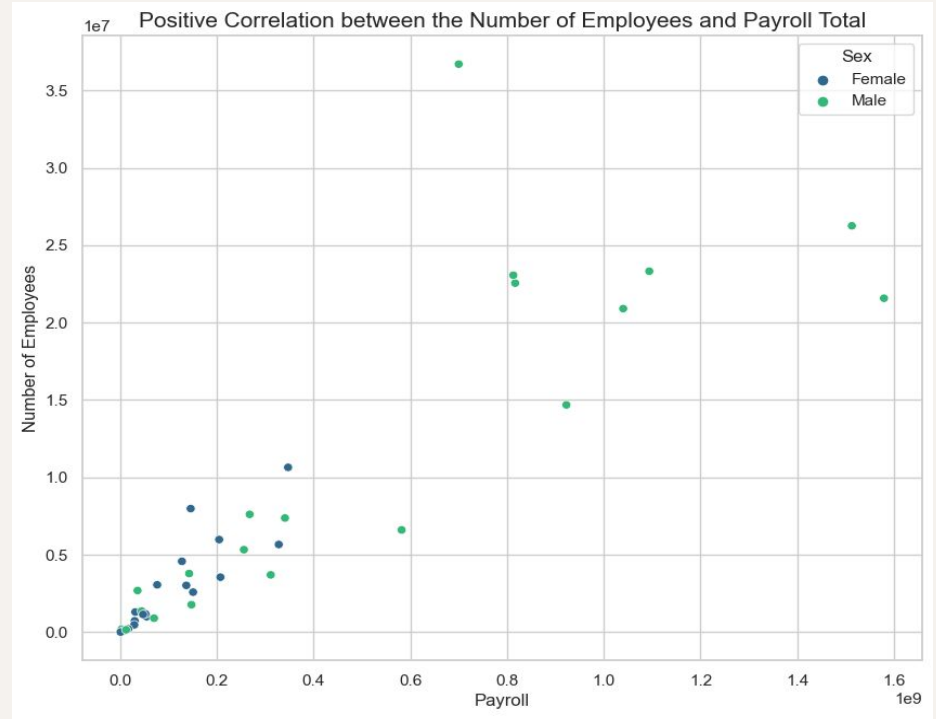
Employee Gender by Industry Groups

How much of a difference is there?



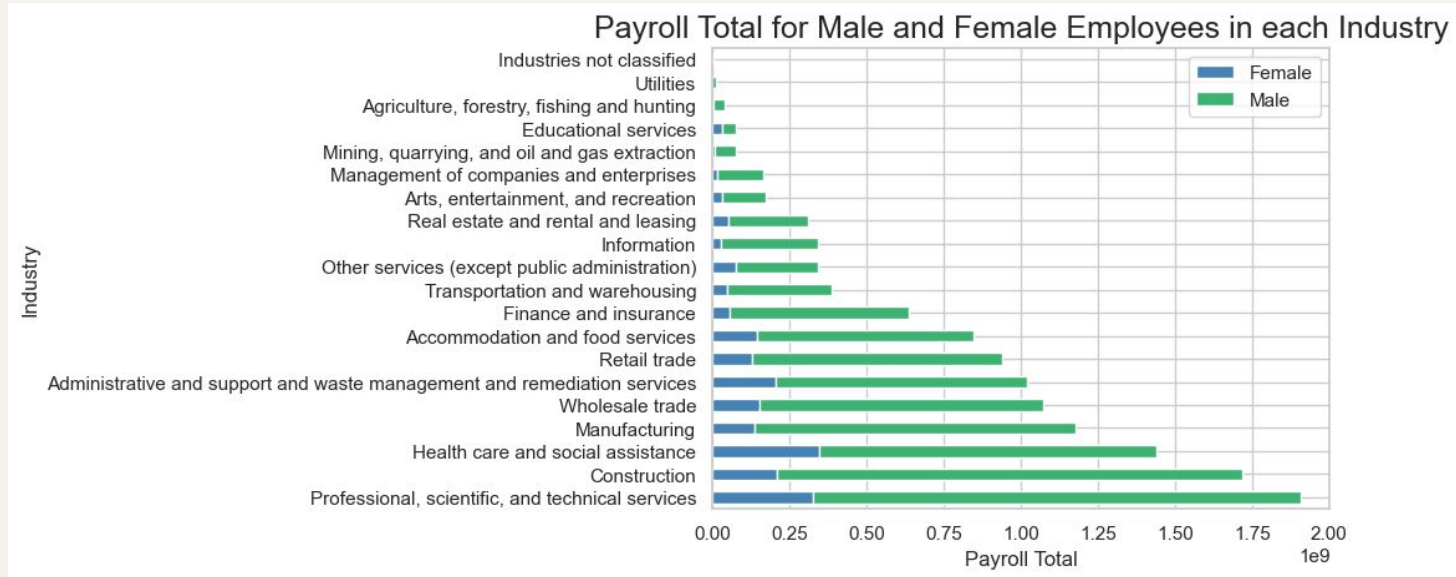
Differences in Payroll?

- Higher number of male employees = a higher payroll.
- Is this skewed?
- Lower amount of employees but highest payroll?



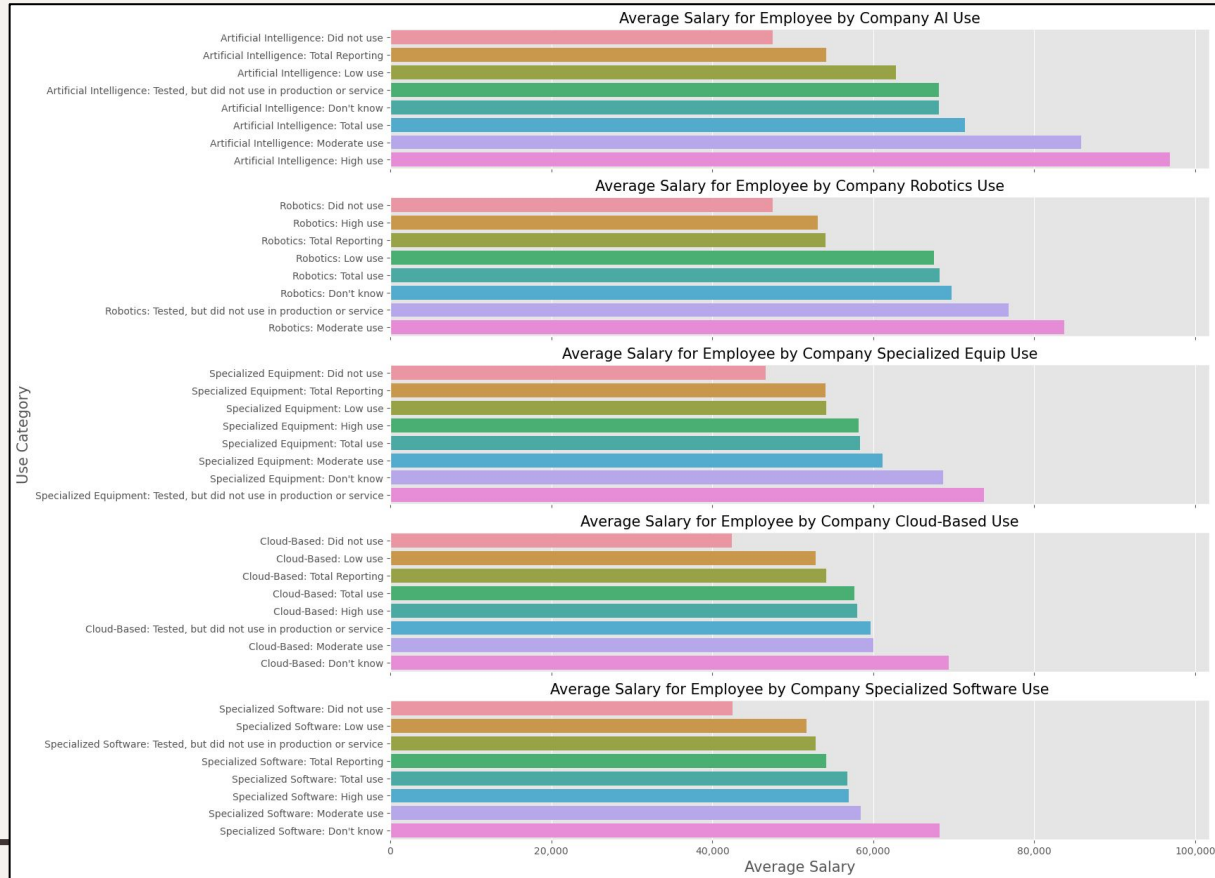
Payroll by Industry

- Employees in some industries have higher salaries than others.
- Higher number of employees doesn't always mean a greater payroll.



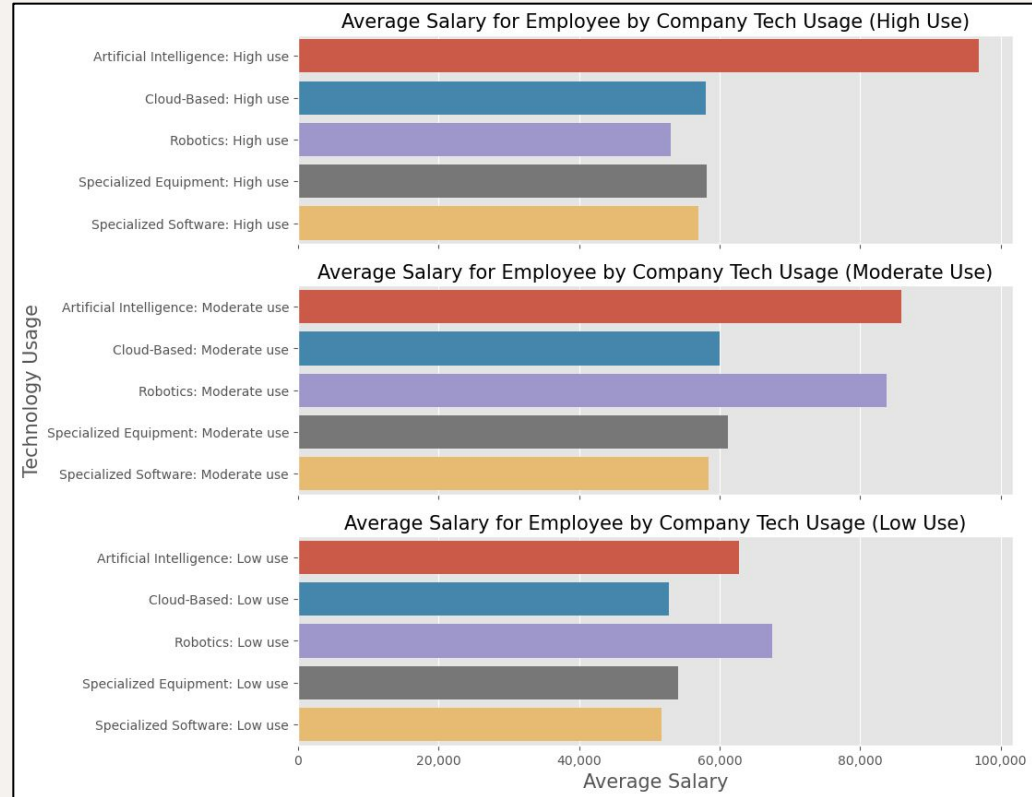
Technology Characteristics

Overview of Tech Use Column



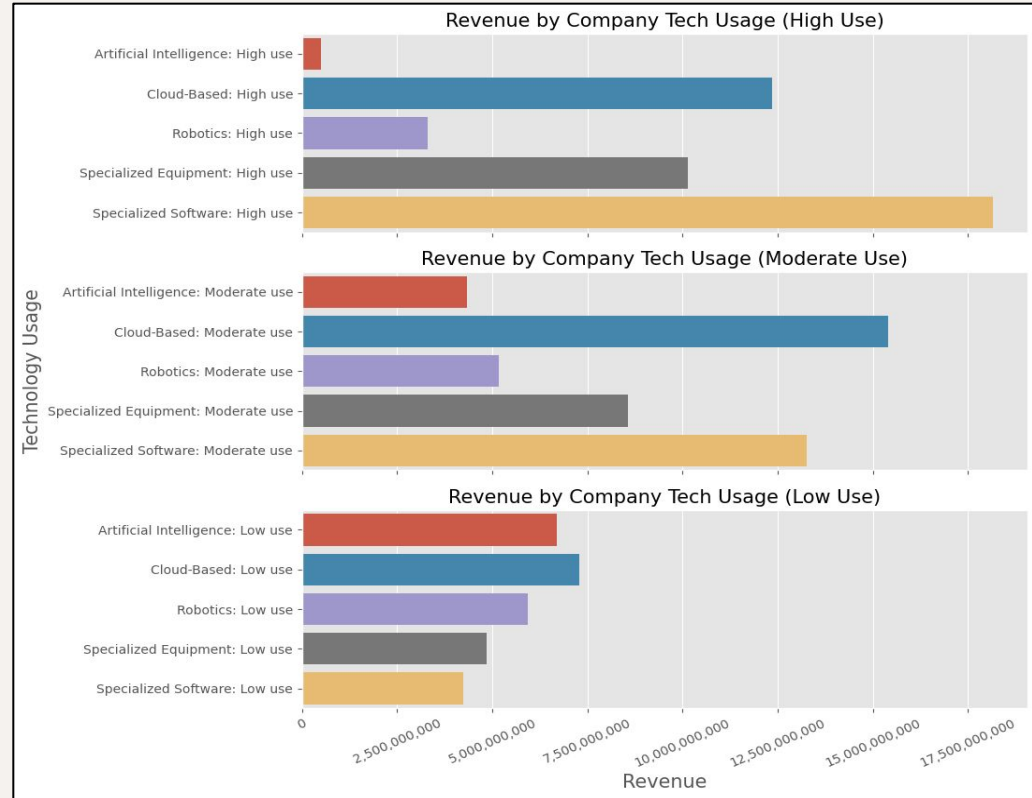
How Tech Use Affects Salaries

- (Annual Payroll / Number of Employees) * 1000
- Increase from low to moderate
- Level off after moderate
- Notable trends
 - AI
 - Robotics



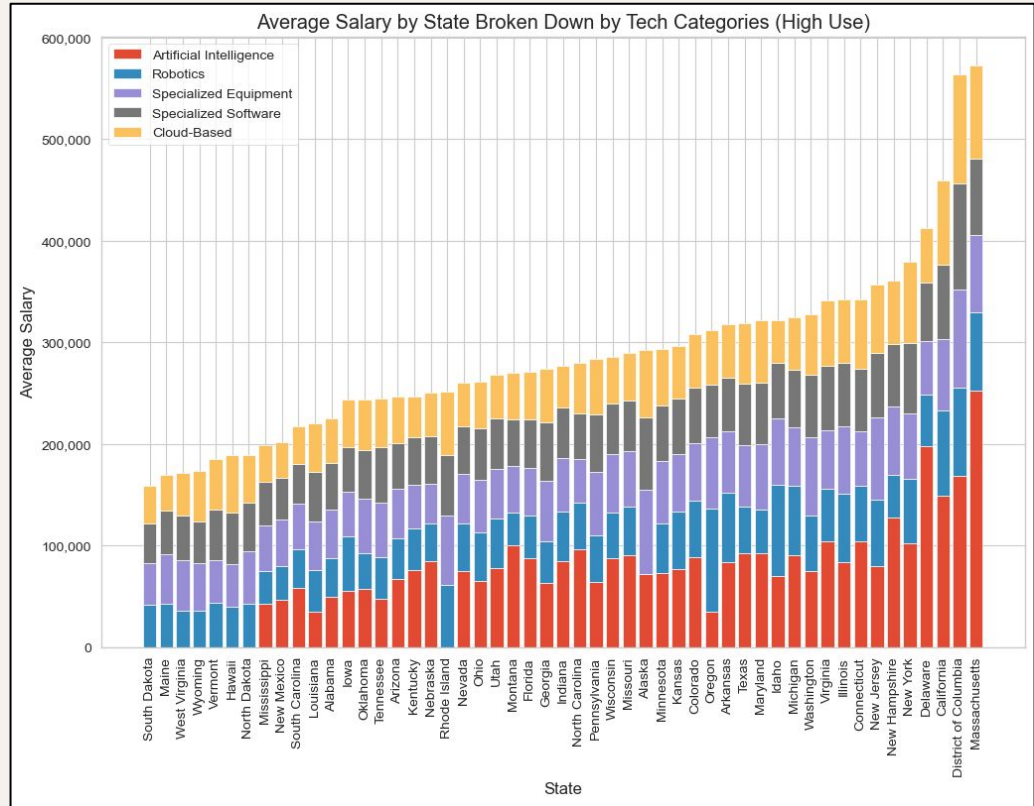
How Tech Use Affects Revenues

- No generalizable trend
- Revenues decrease with higher use
 - Robotics
 - AI
- Revenues increase with higher use
 - Specialized Equipment and Software
- Moderate usage appears optimal for cloud-based



Salaries and High Tech Use by State

- Can these changes be attributed to technology usage
 - Correlated with average state salaries
- AI provides best salary
 - Not present at high use in all states
- Represents which states are best to work in for given tech fields



The image features two thin, dark horizontal lines spanning the width of the frame. The top line has a decorative, curved end on the left side, and the bottom line has a similar decorative, curved end on the right side.

Questions?