Economic Data Analysis

Part 1.0 | Data Types

Taylor Weidman

Types of Data

Data comes in all shapes, sizes, and types.

- Value Type: numerical data, categorical data
- Unit of Observation: cross-section data, time series data, panel data
- Number of Variables: univariate data, bivariate data, multivariate data

Types of Data: Numerical Data Examples

Numerical data is data that’s best recorded in numerical form, continuous or discrete.

- Annual income (continuous)
- Hours worked (discrete, maybe)
- Annual GDP (continuous)
- Number of moves (discrete)

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  - Education levels (High School, Bachelor's, Master's, PhD)
  - Survey responses (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)
  - Size categories (Small, Medium, Large)
  - Pain scales (No Pain, Mild, Moderate, Severe)

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- Binary: only two categories
  - Economics major (YES/NO)
  - Human (YES/NO)

Data Types

Numerical/Quantitative Variables

- Discrete: countable numbers with meaningful intervals
  - Number of Children in a Household (1, 2, …)
  - Number of Siblings
- Continuous: quantities measurable on the reals
  - Household income in USD

Economic Data Analysis

Part 1.1 | Categorical Variables

Taylor Weidman

Example 1.1 | Coffee Shops by State

Summarize the locations of coffee shops in Part_1_1_Coffee_Shops.csv

Categorical Variables: Coffee Shop Locations by State

Q. Which state has the most locations?

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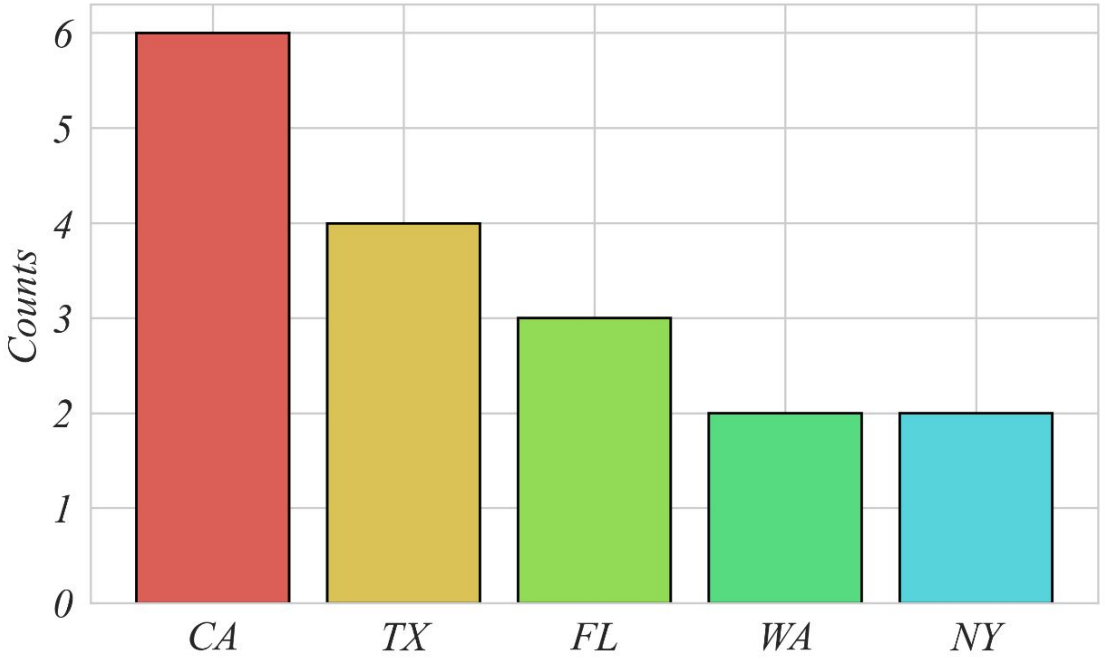

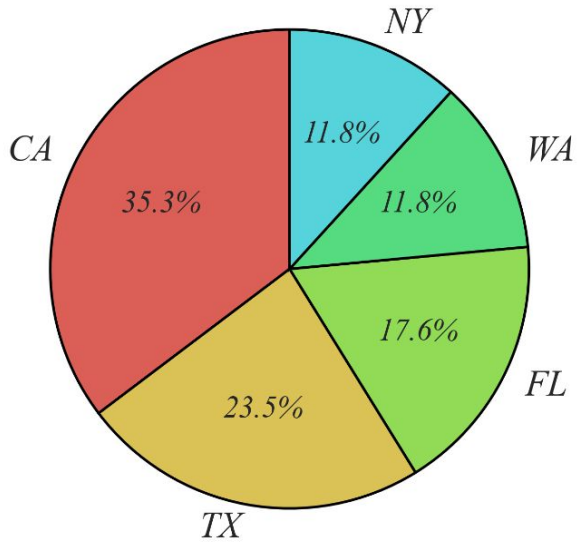

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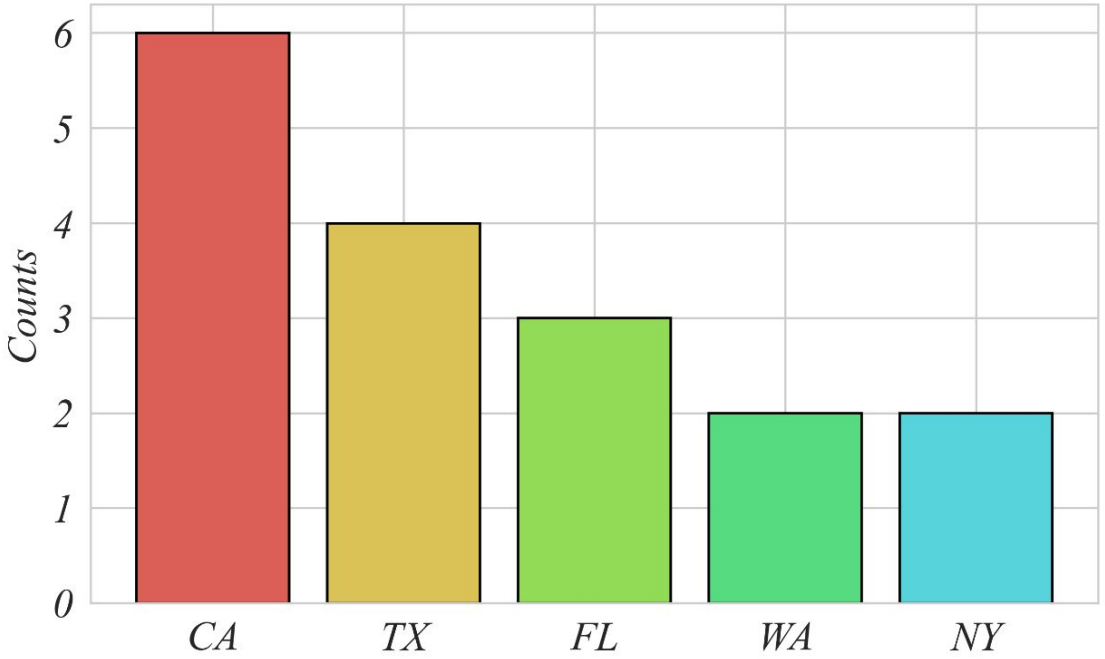
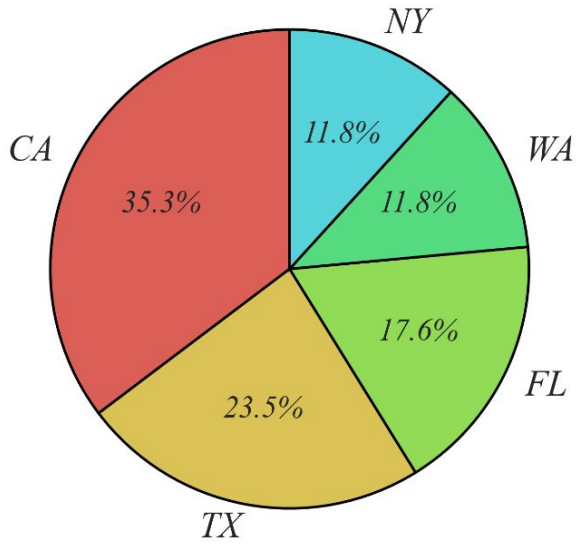
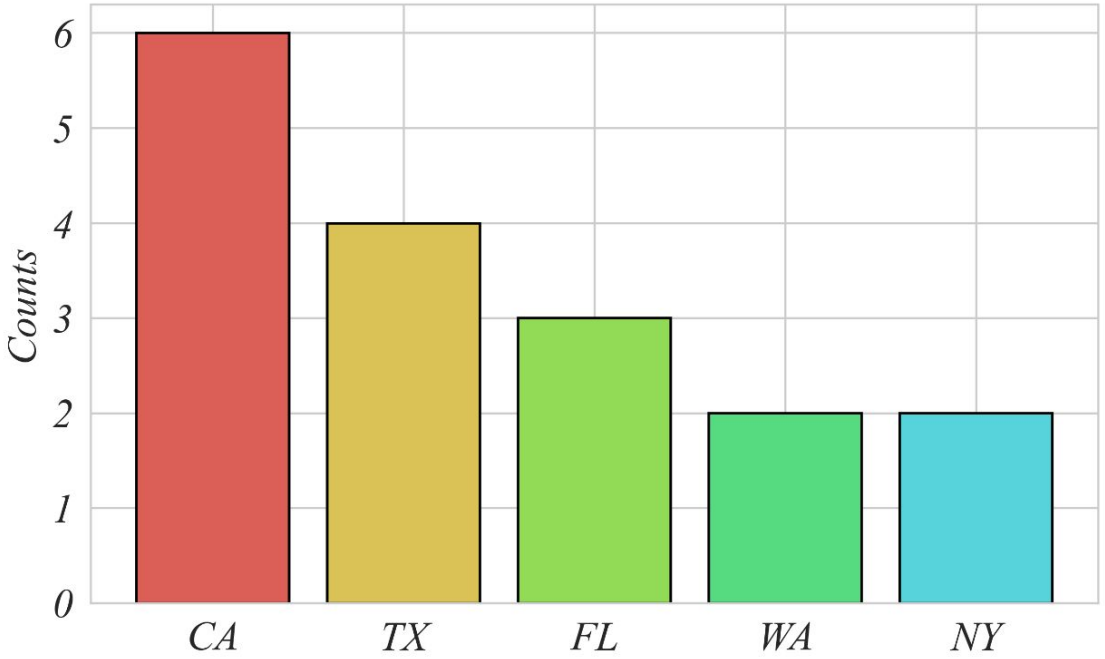


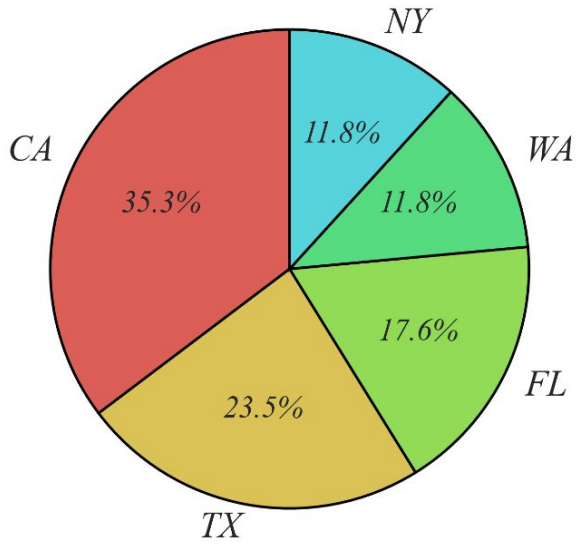


Both graphs work, but bar graphs are easier to read.

Categorical Variables: Coffee Shop Locations by State

Q. Does FL or WA have more locations?





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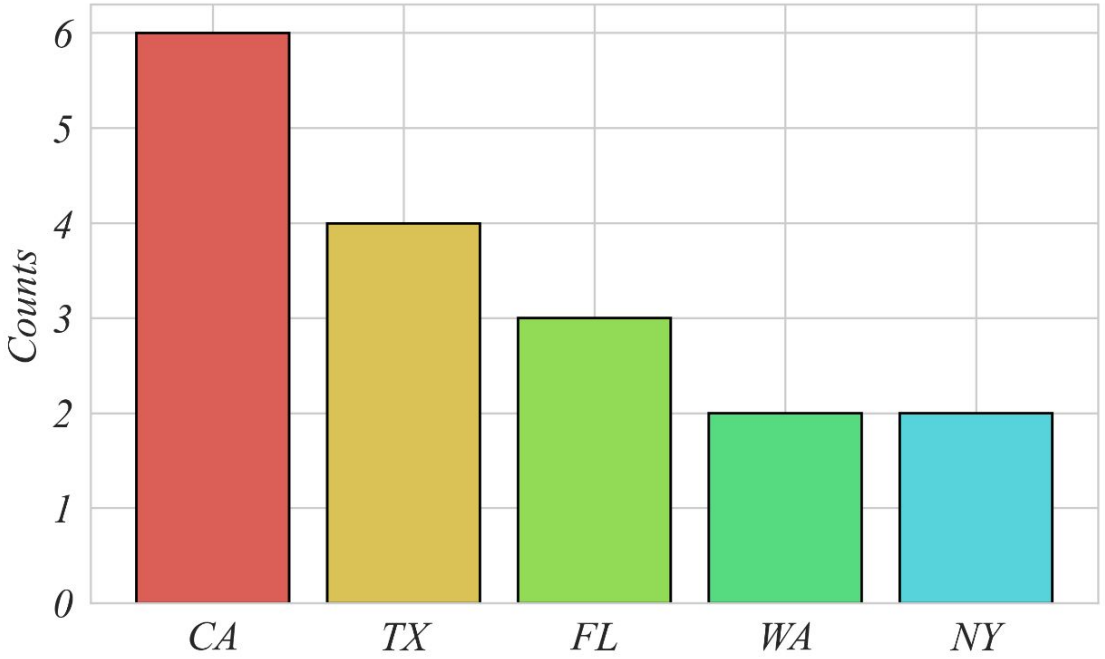
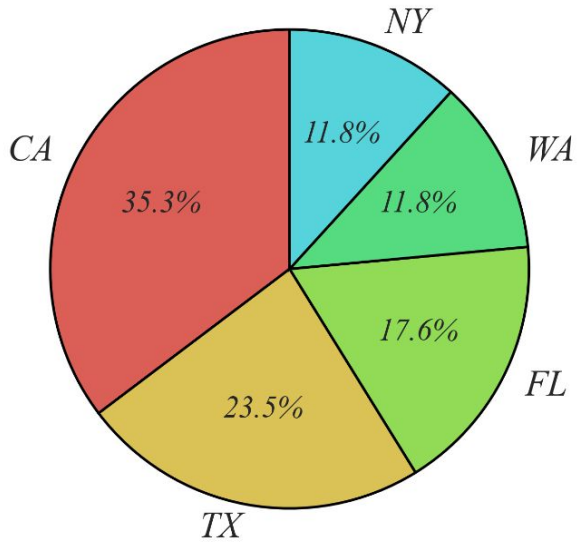
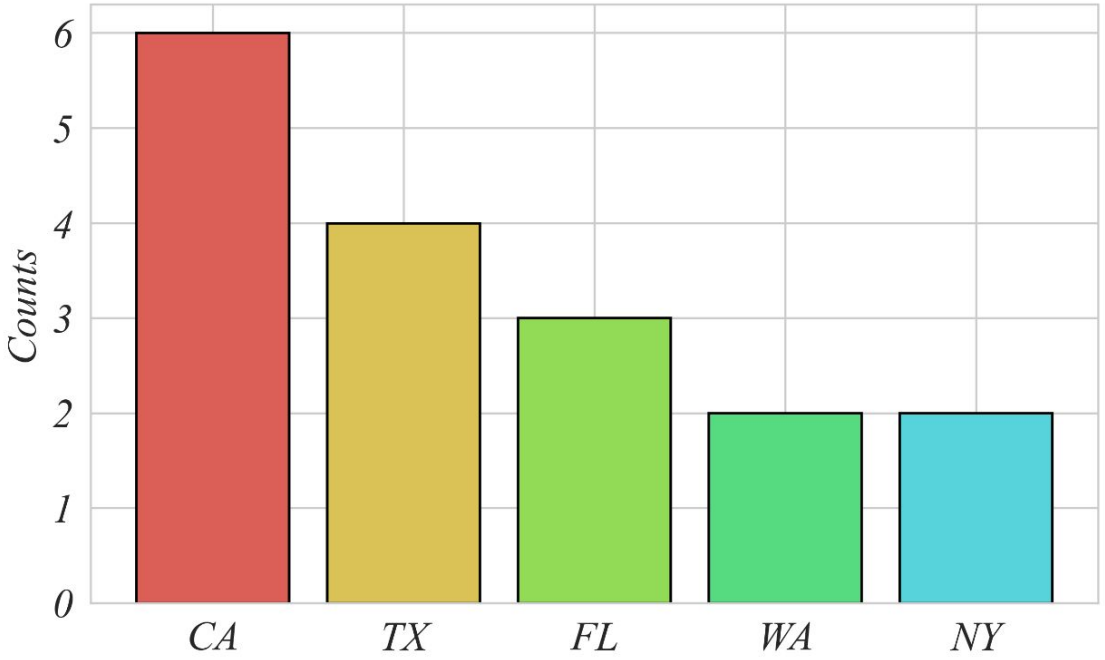


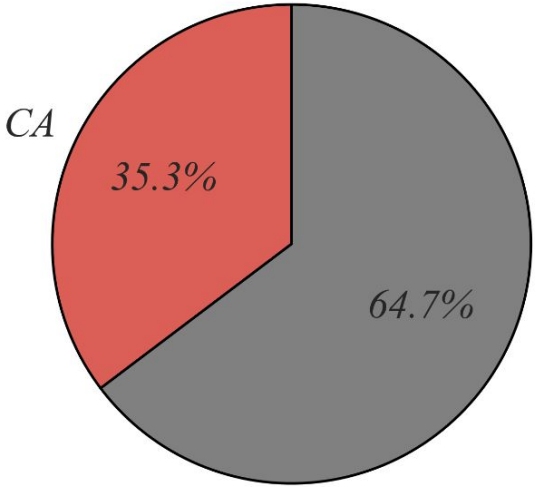


Bar graphs make it especially easy to compare between categories.

Categorical Variables: Coffee Shop Locations by State

Q. What share of coffee shops are located in CA?





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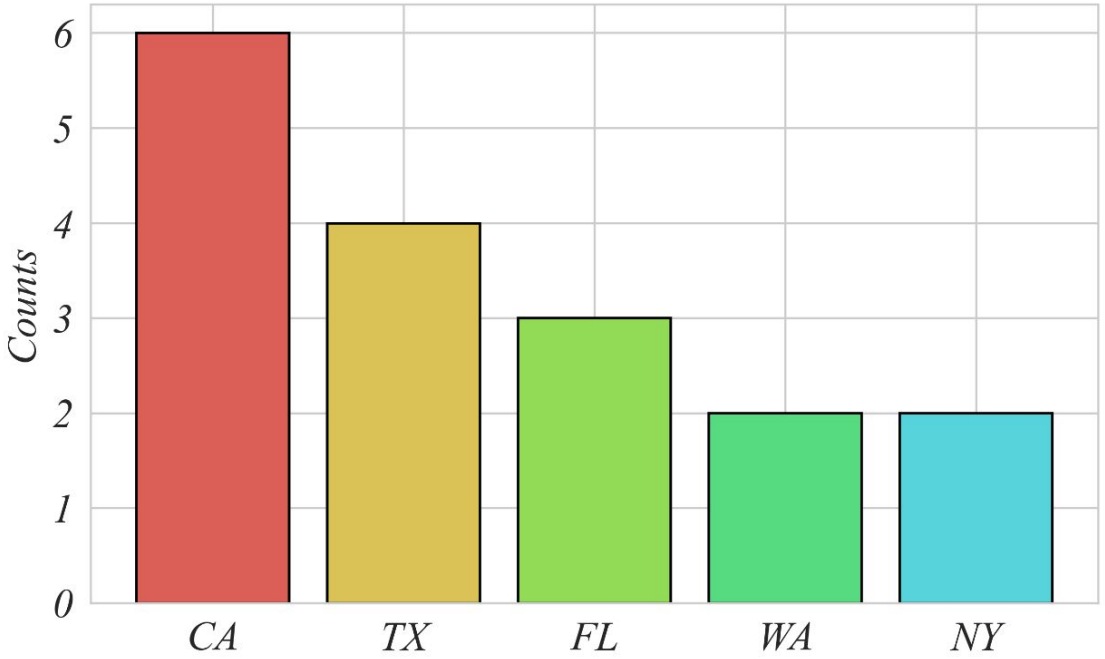

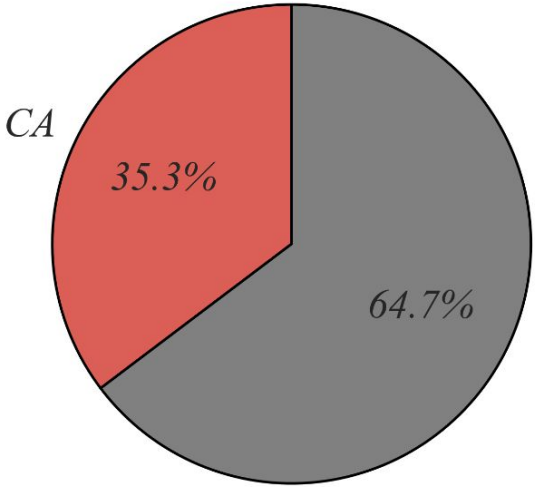

Pie graphs can be used (with caution) for binary categorical variables.

Categorical Variables

- Use ***bar graphs*** to compare values with each other.
- Use ***pie graphs*** to compare one value against the total.