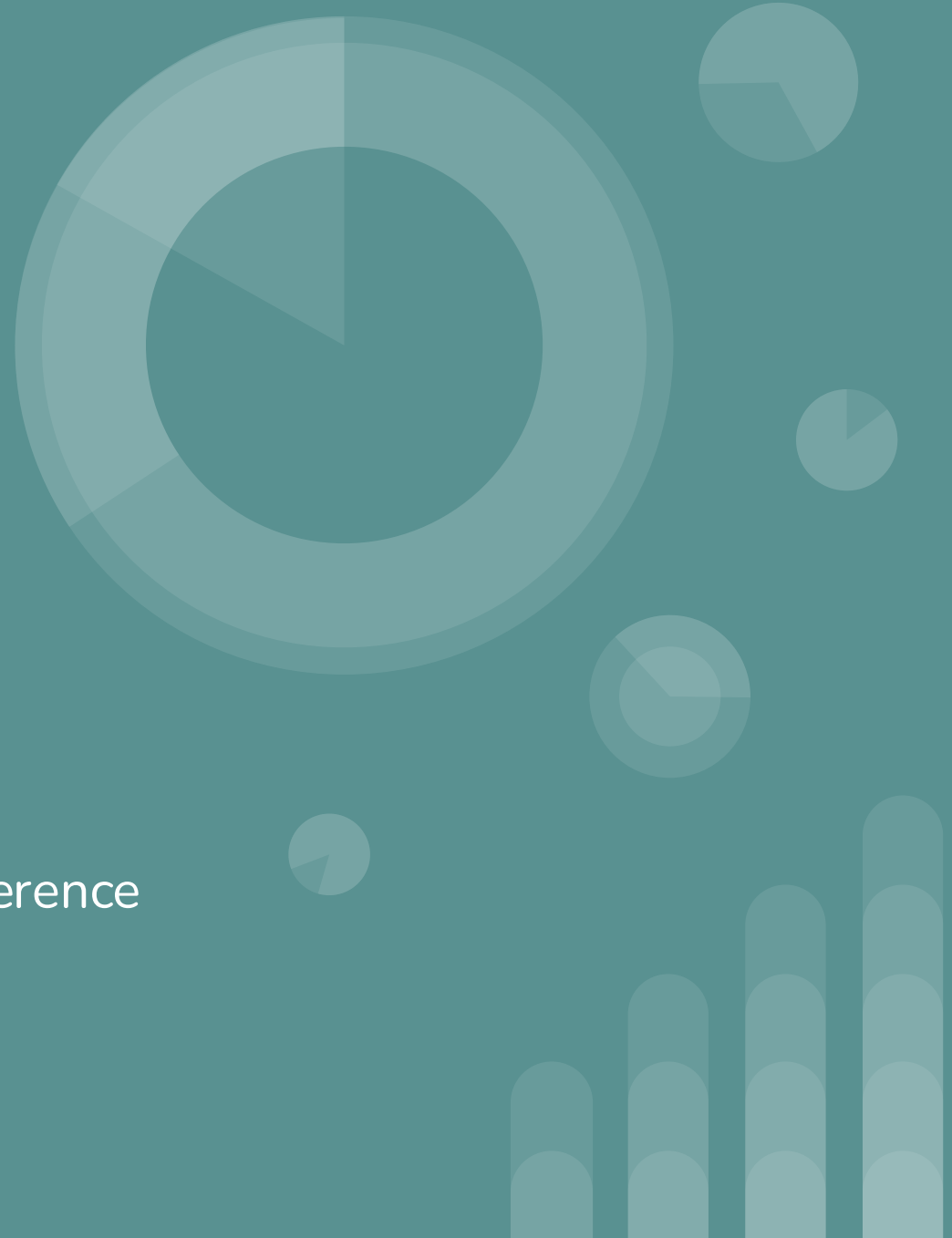


# Topic 5: Examining Categorical Data

STOR 155: Introduction to Data Models and Inference  
Dr. Teressa Bergland  
Fall 2025





# Announcements + Warm-Up

Course PSAs:

- Homework 4 due **TODAY, Friday 9/05 on WebAssign**
- Homework 5 due **Monday, 9/08**

Warm-Up:

- Brainstorm! Think of a categorical variable for something you'd like to study.
- You can use the same population you proposed in Topic 2 or pick a new one!



# Contingency Tables

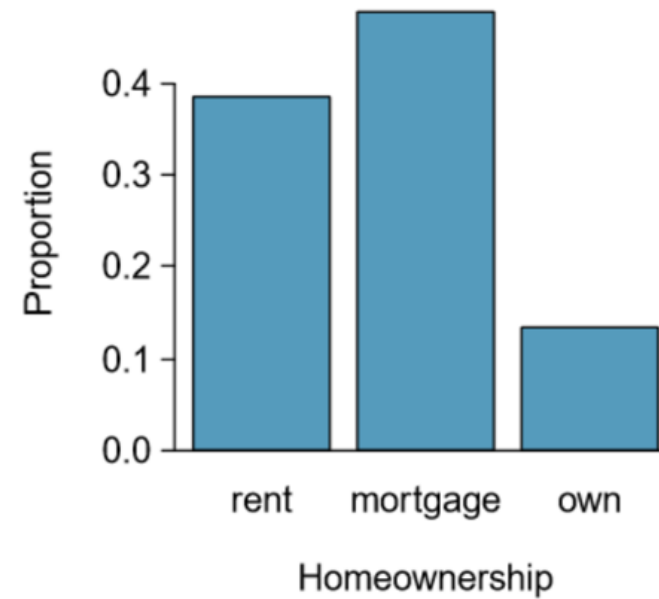
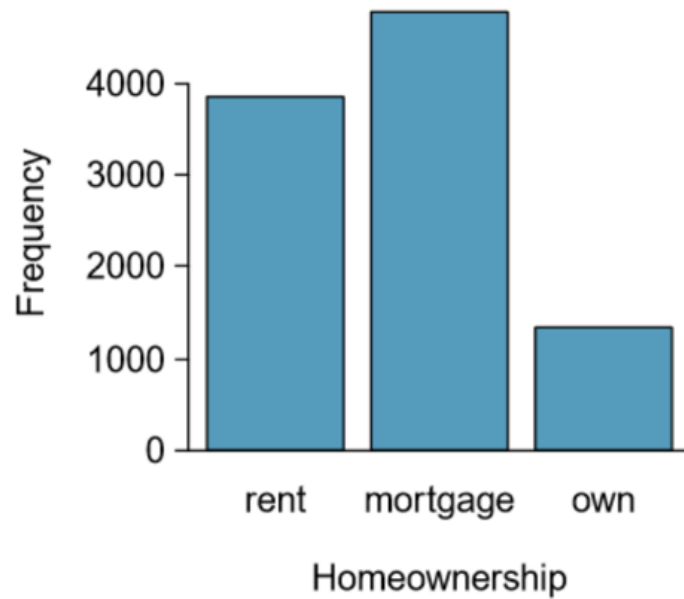
Question: Does there appear to be a relationship between loan application type and homeownership status?

|          |            | homeownership |          |      |       |
|----------|------------|---------------|----------|------|-------|
|          |            | rent          | mortgage | own  | Total |
| app_type | individual | 3496          | 3839     | 1170 | 8505  |
|          | joint      | 362           | 950      | 183  | 1495  |
|          | Total      | 3858          | 4789     | 1353 | 10000 |

Examine row proportions!



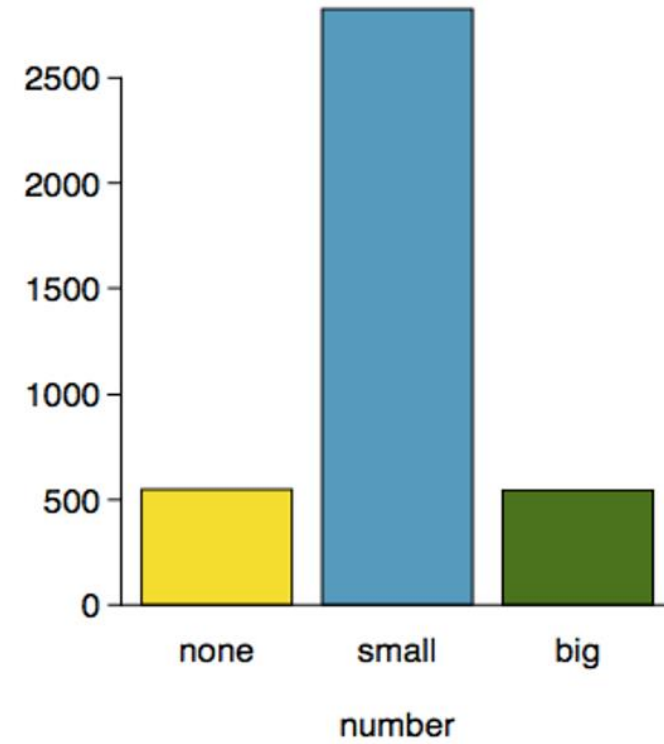
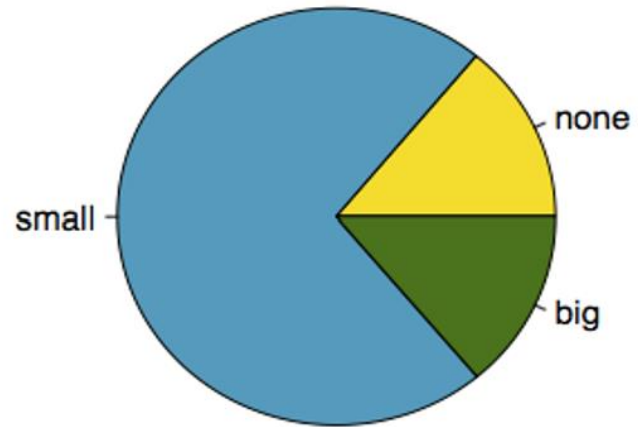
# Bar Plots



Note: these are NOT histograms!



# Pie Charts vs. Bar Plots



## Side-by-Side Plots

