

Welcome!

Week 2: Descriptive Statistics and Causality

TA: Jennifer Lin

PS 210: Introduction to Empirical Methods

2021-09-29

Introductions... AGAIN!

1. Name
2. Pronouns
3. One thing you learned in the last few weeks OR
 - One fun activity you did on campus
 - One fun activity you did with friends
 - Something positive about your life!

Descriptive Statistics

Types of Measures

Suppose you want to survey Northwestern students about their favorite ice cream flavor.



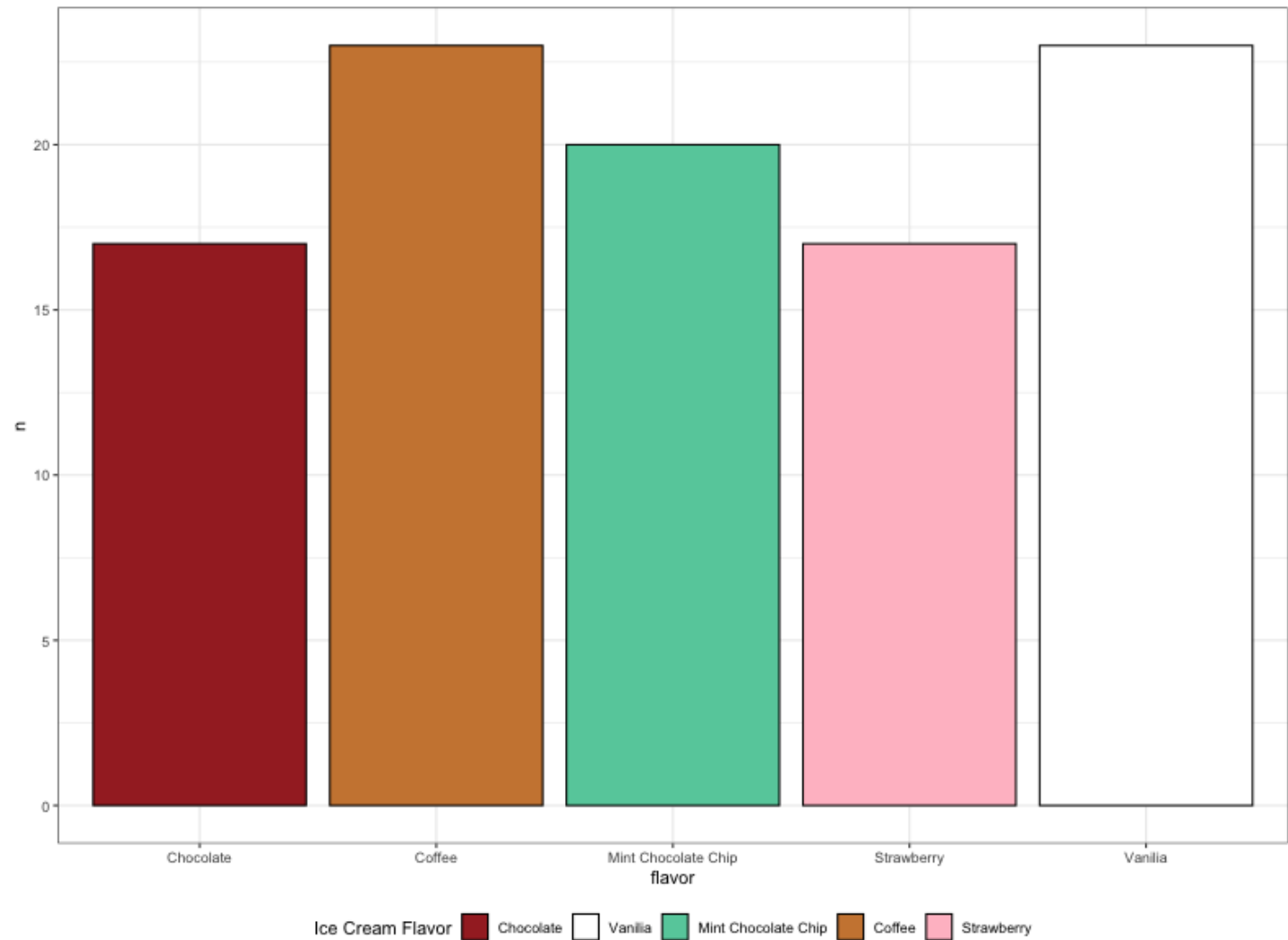
Types of Measures

Nominal

What is your favorite ice cream flavor?

- Chocolate
- Vanilla
- Mint Chocolate Chip
- Coffee
- Strawberry

Northwestern's Favorite Ice Cream Flavors



Types of Measures

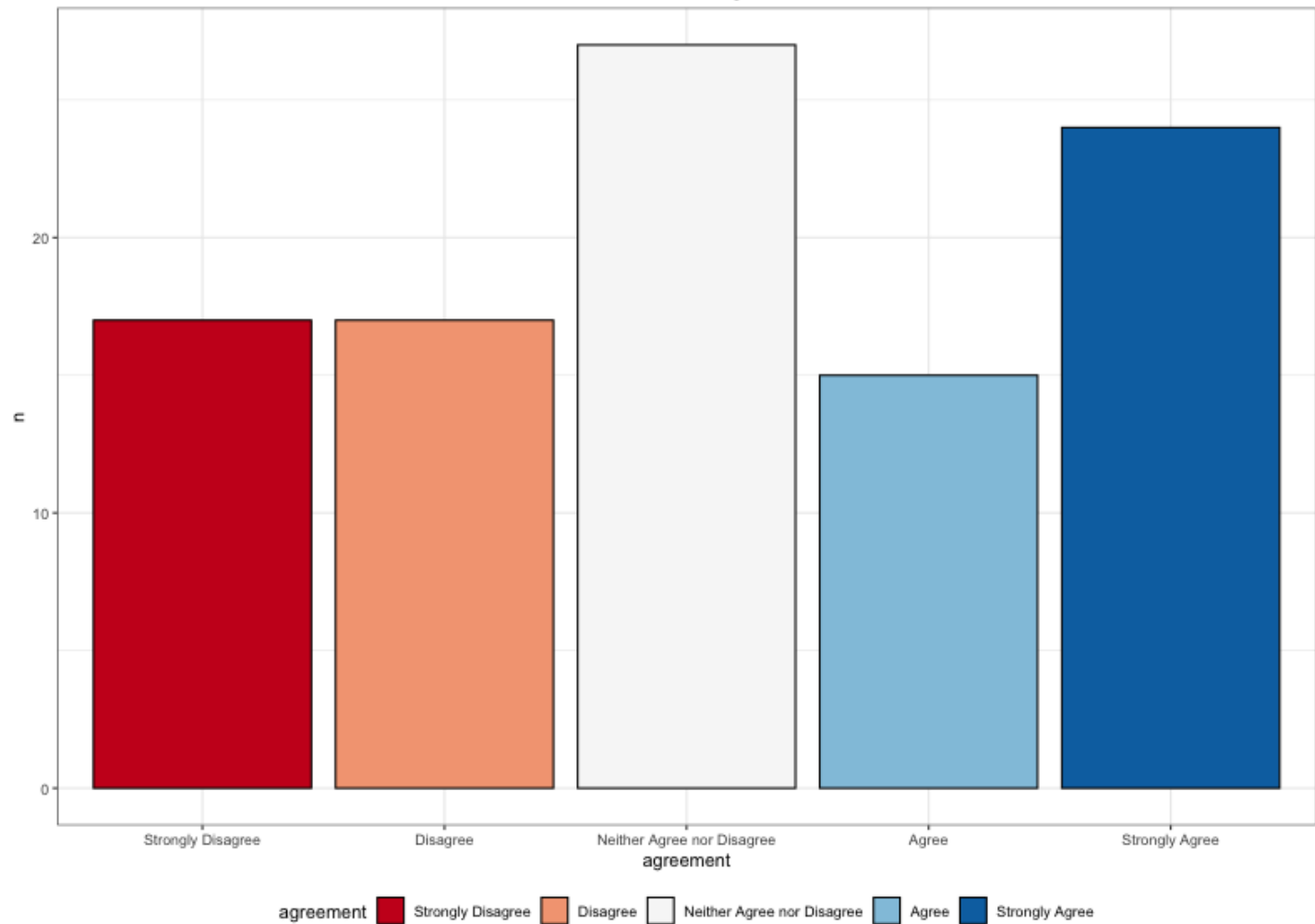
Ordinal

Do you agree or disagree with the fact that Vanilla Ice Cream is your favorite ice cream flavor

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Wildcats Agree that Vanilla is the Best Flavor

Or do they?



Types of Measures

Interval

| *How many scoops of ice cream do you eat each day?*

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4.69	4

Introduction to Causality





Causal Inference

- It is drawing a direct relationship between two variables X and Y.
- It is about getting a *pretty good* grasp of said relationship between X and Y

Case Study: The Case of Voting

- What causes people to go to the polls?
 - Interest in politics
 - Knowledge of the candidates and issues
 - Desire to make a change in the community
 - Tagging along with friends and family
 - Why not?

The Four Questions

- Is there a relationship between X and Y?
- Could Y cause X?
- Is there a causal pathway from X to Y?
- Could there be confounding variables?

Experiments

- Experiments are one of the best ways to identify causal mechanisms
- You create two comparable groups using random assignment, give one group the treatment and another no treatment

An Example

Suppose we want to know whether **desire to effect change** in society really causes **voter turnout**.

Two conditions

1. Prime Desire to Effect Change in society by telling people about things in their neighborhood that need to change
2. Control message -- Recycling is good for the planet

Questions?