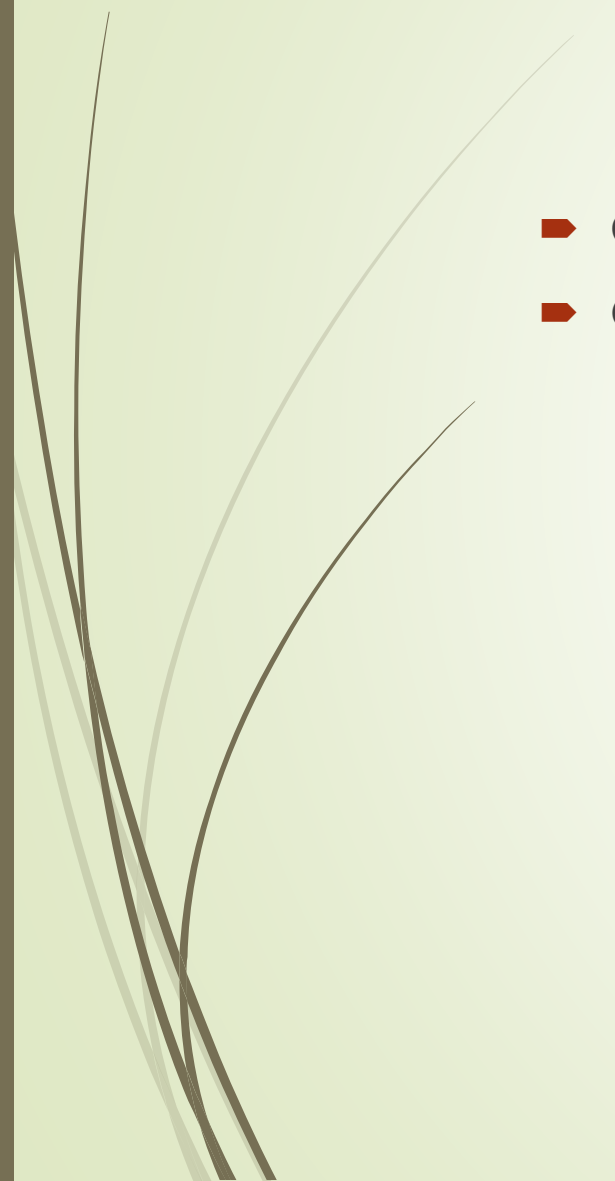




# Coming next...

- CITI training
  - Quiz next week
- 



# Warm up: Beginner's mind

- Discuss with your neighbor about your experiment of “do nothing 10 minutes”.
- Share with the class: where were you? How did you do it? Other's reactions?



# Sociological Research Methods

Chapter 2

# The Scientific Approach

- ▶ The **scientific method** is a procedure for acquiring knowledge that emphasizes **collecting data** through observation and experiment.



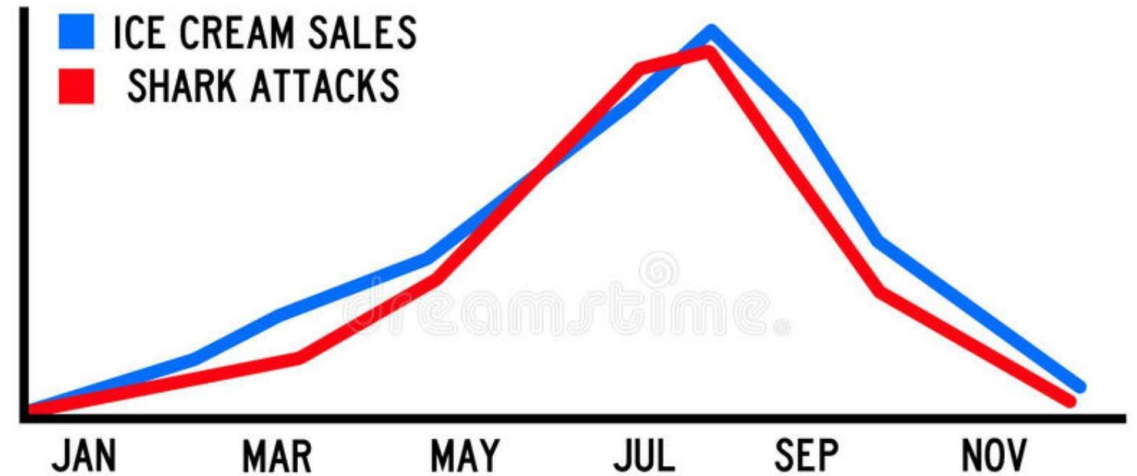
# Steps of the Scientific Method





# Correlation and Causation

- **Correlation**
- **Causation**
- **Spurious correlation**



Both ice cream sales and shark attacks increase when the weather is hot and sunny, but they are not caused by each other (they are caused by good weather, with lots of people at the beach, both eating ice cream and having a swim in the sea)



# Causality versus Correlation

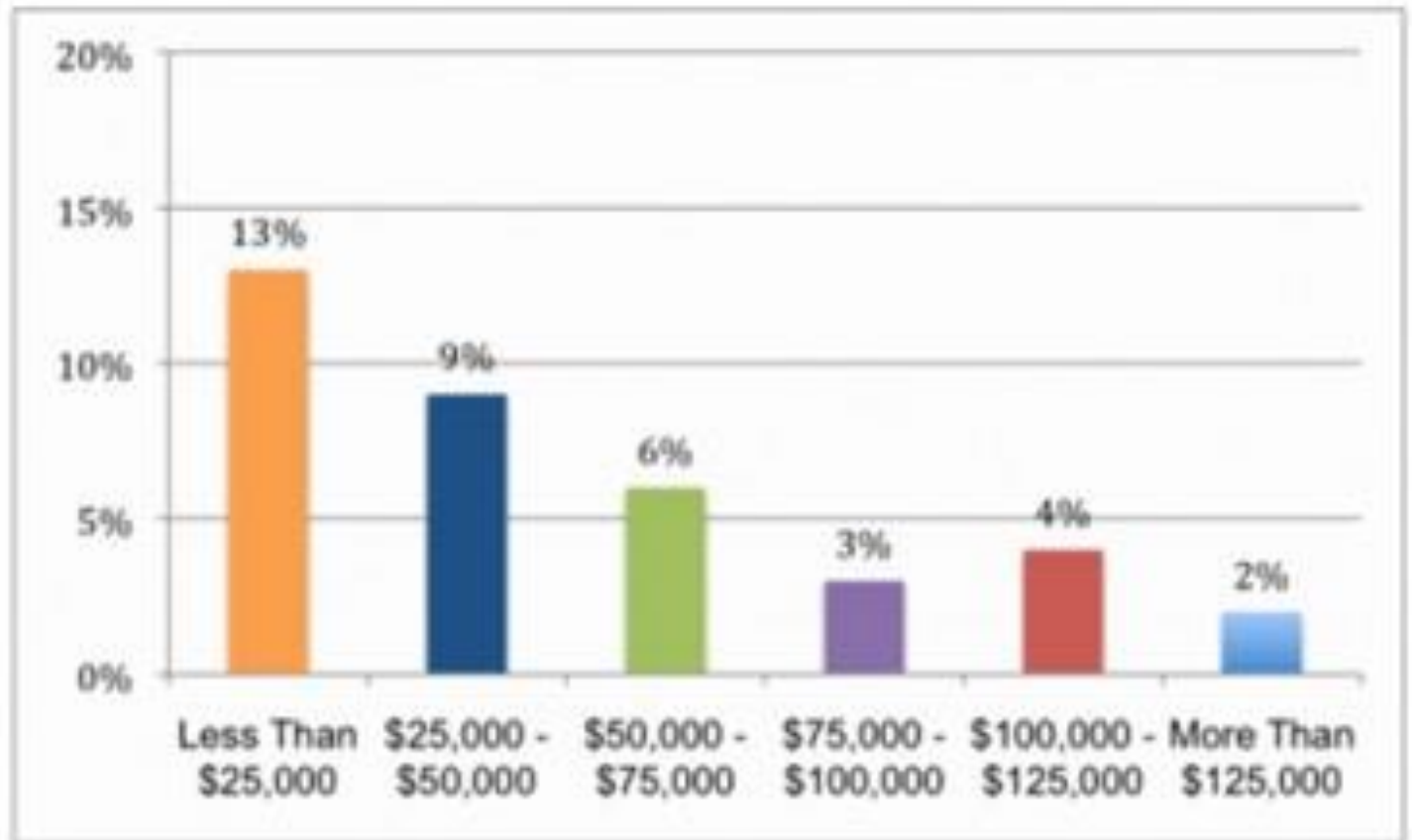
- Sociologists conduct research to TRY to prove causation.
- But it is very difficult to prove.
- To prove causation, correlation and time order are established and alternative explanations are ruled out.

# Variables

## Slide 1 of 2

- A **dependent variable** is the outcome that a researcher is trying to explain.
- An **independent variable** is a measured factor that the researcher believes has a causal impact on the dependent variable.

Parent Reports: Children with Poor/Fair Physical Health, by Household Income





# Variables

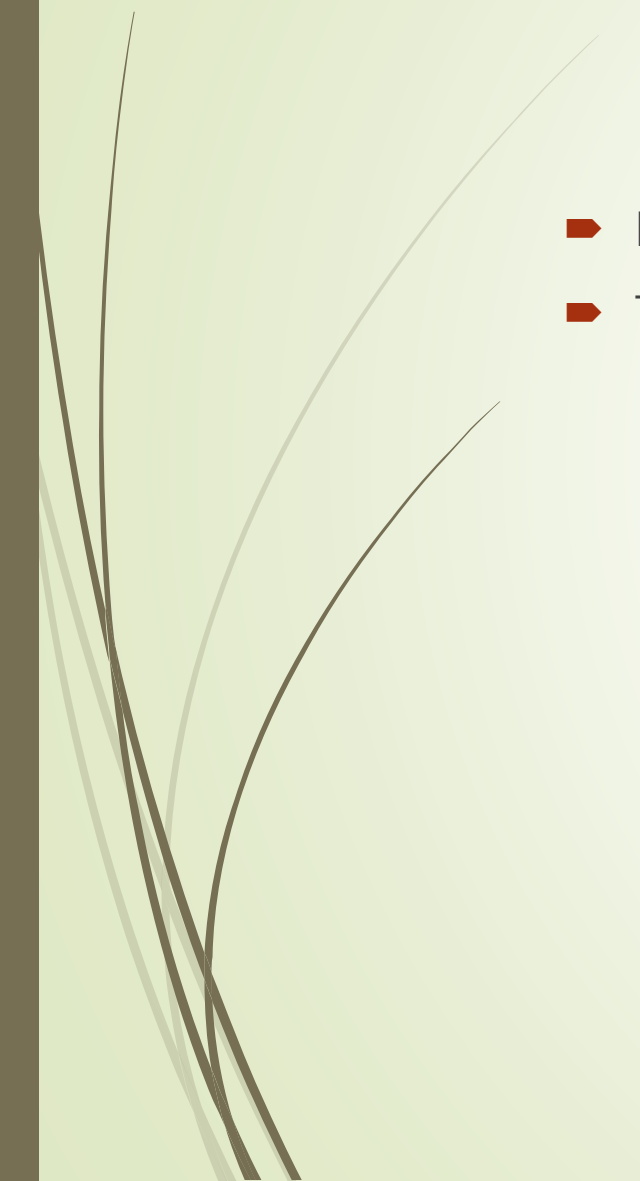
## Slide 2 of 2

- ▶ A **hypothesis** is a proposed relationship between two variables, usually with a stated direction.
  - ▶ The *direction* of the relationship refers to whether your variables move in the same direction (positive) or in opposite directions (negative).

Example: Children who are in the low-income family households have worse physical health.



# Exercise: write a hypothesis

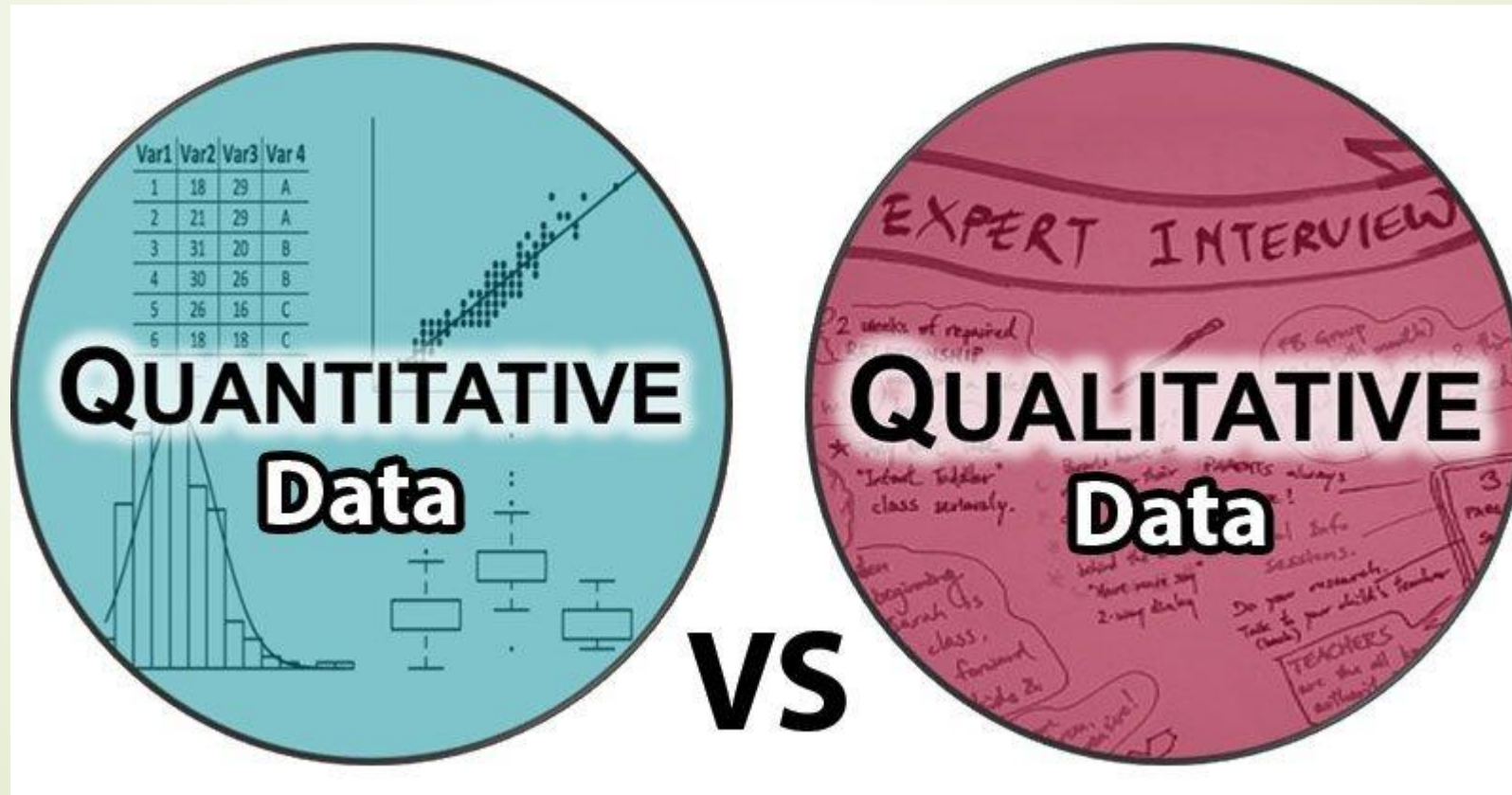
- ▶ Household income and children's school performance
  - ▶ Technology development and connection with others
- 

# Steps of the Scientific Method



# An Overview of Research Methods

Numeric form or not





my2020census.gov to complete your 2020 Census questionnaire.

Before you answer Question 1, count the people living in this house, apartment, or mobile home using our guidelines.

- Count all people, including babies, who live and sleep here most of the time.
- If no one lives and sleeps at this address most of the time, go online at [my2020census.gov](https://my2020census.gov) or call the number on page 8.

The census must also include people without a permanent place to live, so:

- If someone who does not have a permanent place to live is staying here on April 1, 2020, count that person.

The Census Bureau also conducts counts in institutions and other places, so:

- Do not count anyone living away from here, either at college or in the military.
- Do not count anyone in a nursing home, jail, prison, detention facility, etc., on April 1, 2020.
- Leave these people off your questionnaire, even if they will return to live here after they leave college, the nursing home, the military, jail, etc. Otherwise, they may be counted twice.

- How many people were living or staying in this house, apartment, or mobile home on April 1, 2020?

2. Were there any additional people staying here on April 1, 2020 that you did not include in Question 1? Mark ☒ all that apply.

- ☐ Children, related or unrelated, such as newborn babies, grandchildren, or foster children
- ☐ Relatives, such as adult children, cousins, or in-laws
- ☐ Nonrelatives, such as roommates or live-in babysitters
- ☐ People staying here temporarily
- ☐ No additional people

3. Is this house, apartment, or mobile home — Mark ☒

- ☐ Owned by you or someone in this household with a mortgage or loan? *Include home equity loans.*
- ☐ Owned by you or someone in this household free and clear (without a mortgage or loan)?
- ☐ Rented?
- ☐ Occupied without payment of rent?

4. What is your telephone number?

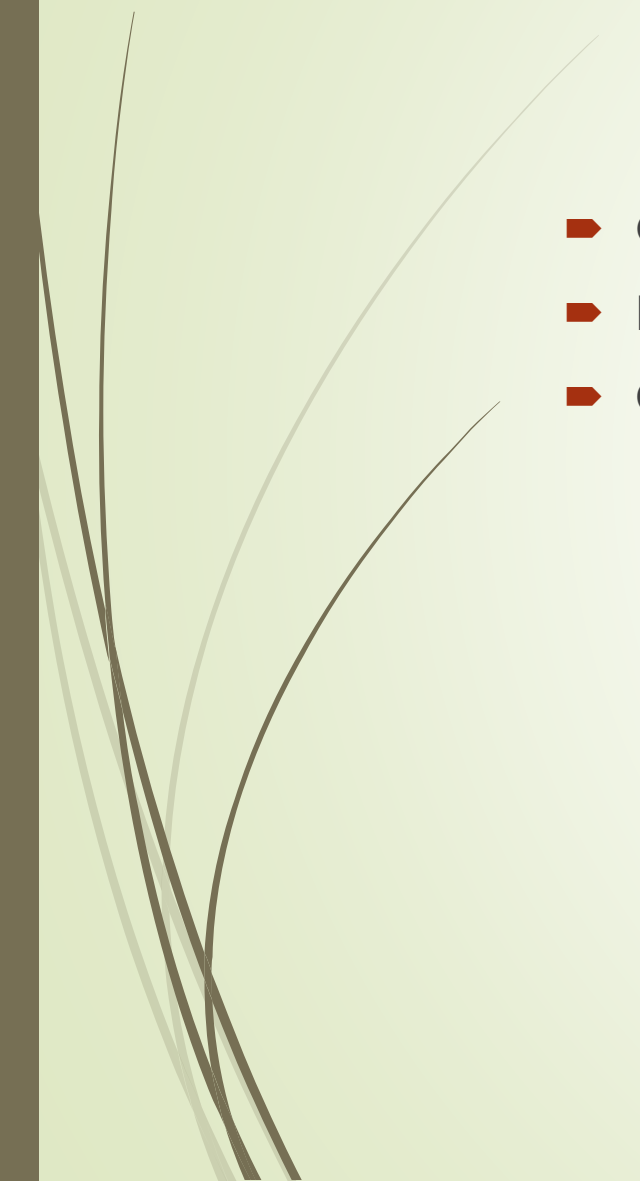
We will only contact you if needed for official Census Bureau business.

Surveys





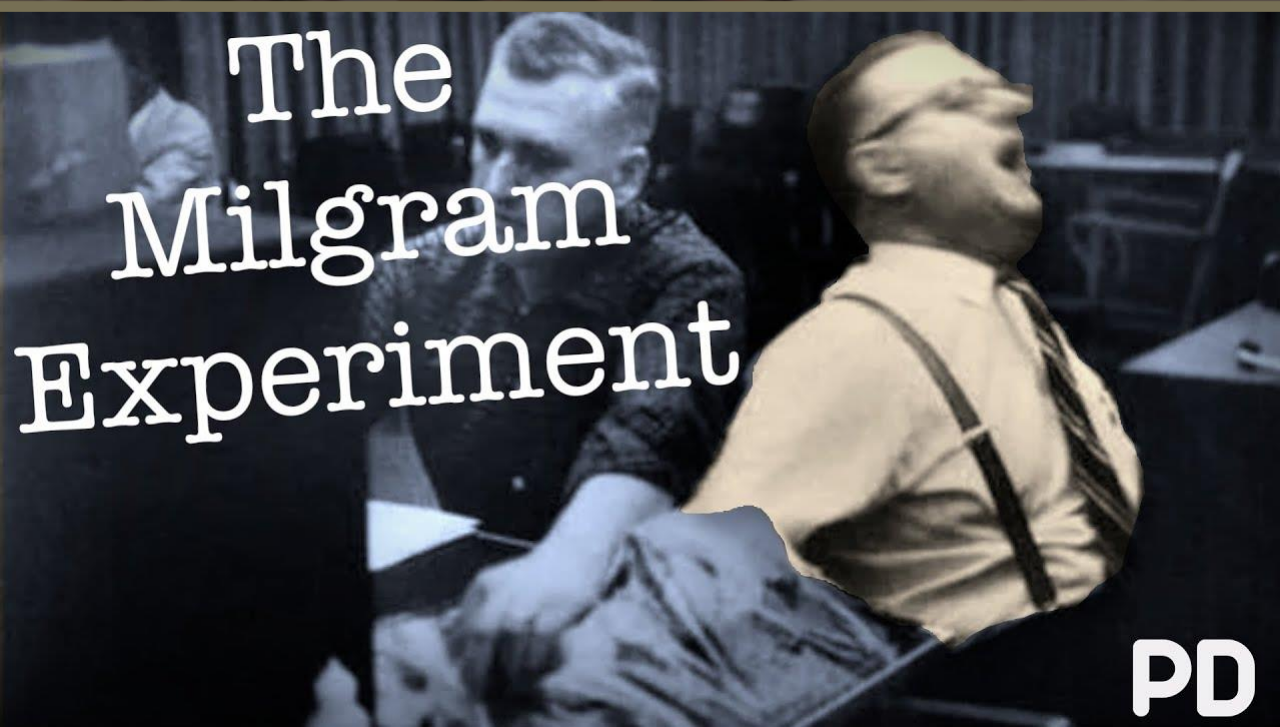
# Survey: pros and cons

- Generalizability, especially the random sample
  - Relatively easier to administer
  - Close –ended
- 

# Experimental Methods

- Many experiments involve:
  - An **experimental group**—participants who receive the experimental “treatment” or “intervention”
  - A **control group**—participants who continue without intervention so they can be compared with the experimental group






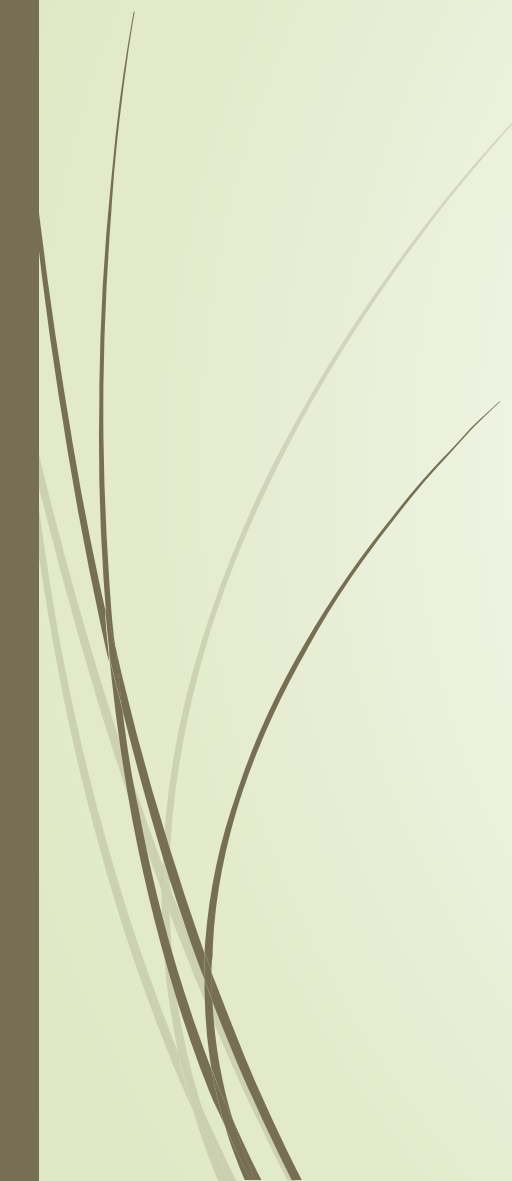
The  
Milgram  
Experiment

PD

Experimental  
Methods



Discussion: Is experimental design  
quantitative or qualitative?



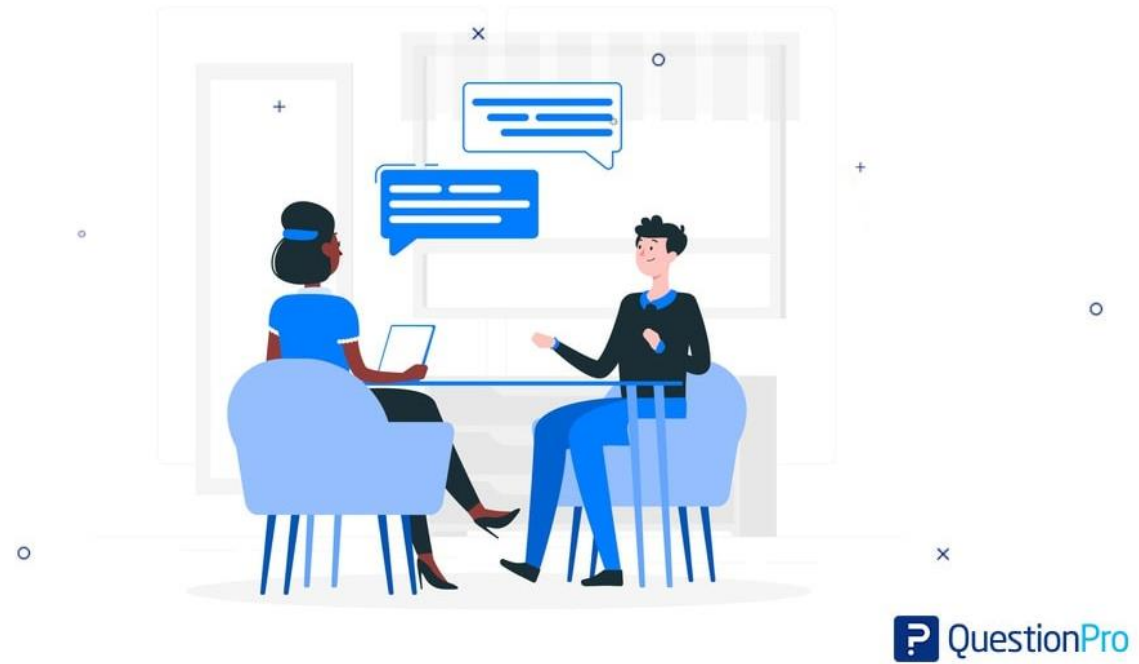


# Experiment: pros and cons

- The most reliable method to prove causality
- Very difficult to conduct and proceed
- Ethical issue
- The least cost effective

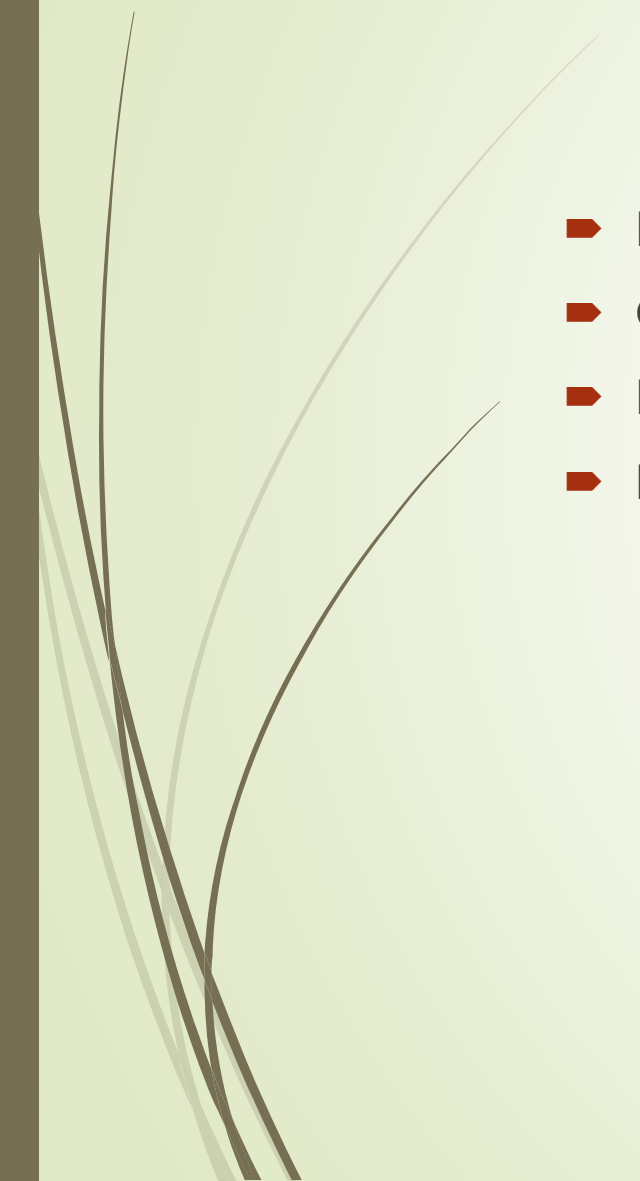


# Interviews/ Focus group






# Interview / Focus group: pros and cons

- Rich data
  - Can be expensive
  - Rely on the interviewers
  - Potential bias
- 



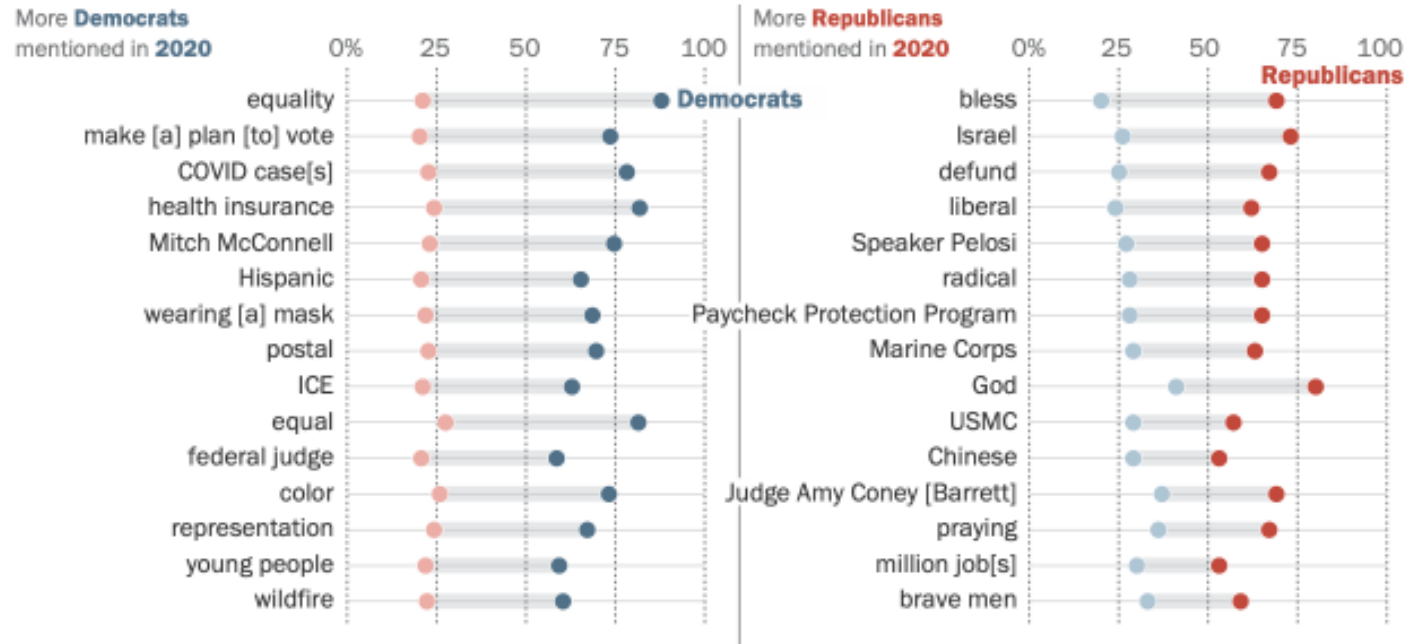
# Content analysis

- a research tool used to determine the presence of certain words, themes, or concepts within some given qualitative data (i.e. text).
  - Using content analysis, researchers can quantify and analyze the presence, meanings and relationships of such certain words, themes, or concepts.
- 

# Content analysis example: Words used in election campaign

## Many of the words used most disproportionately by Democratic lawmakers on social media during 2020 election referenced voting, health or social justice

Share of lawmakers from each party who mentioned \_\_\_\_ on Twitter or Facebook during 2020 election study period



Note: Some terms have been lightly edited for clarity.

Source: Pew Research Center analysis of congressional social media data from the Twitter API, Facebook Graph API and CrowdTangle, a public insights tool owned by Facebook, Sept. 3-Dec. 3, 2020.

\*Charting Congress on Social Media in the 2016 and 2020 Elections"

PEW RESEARCH CENTER





# Ethnography/Participant Observation



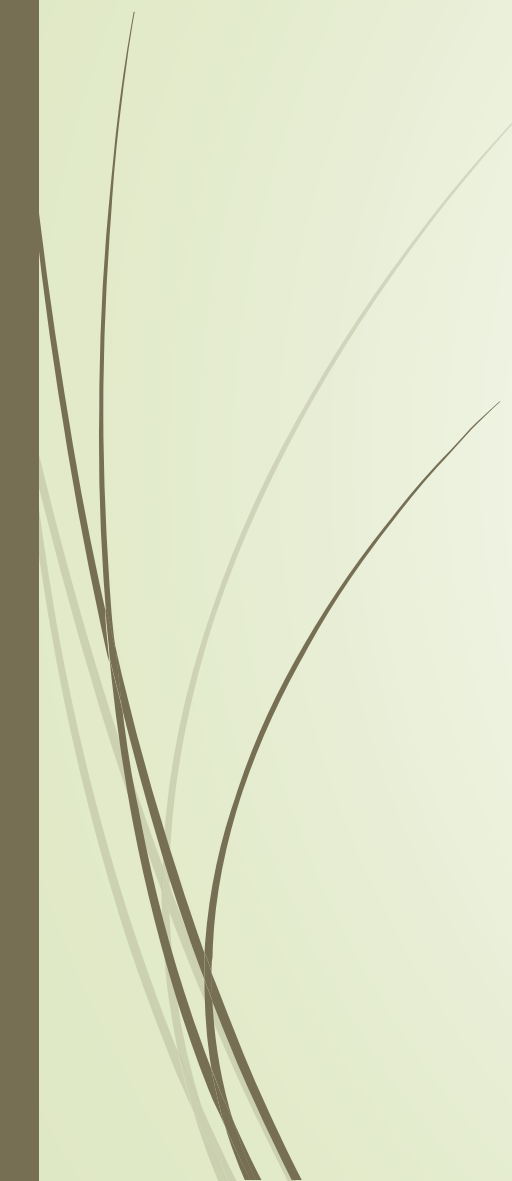


# Ethnography/Participant Observation: Observations and Field Notes

- **Ethnography** usually happens in two steps:
  - The researcher participates in and observes a setting.
  - Then the researcher makes a written account (**field notes**) of what goes on there.
- Ethnographers aim to provide a **thick description** of the setting they observe.
- A sociologist may conduct an **autoethnography**, which is a type of participant observation that focuses on the researcher's own feelings and actions.




# Issues in Sociological Research: Values, Objectivity, and Reactivity

- Most sociologists believe that they should not allow their personal beliefs to influence their research.
  - Max Weber coined the phrase “value-free” sociology to convey the idea that researchers should identify facts without allowing their own personal beliefs or biases to interfere in the process.
  - What do you think?
- 



# Issues in Sociological Research: Research Ethics

- The American Sociological Association has developed its own **code of ethics** to help researchers avoid bias and adhere to professional standards and to protect respondents from harm.



# Conducting Sociological Research: Institutional Review Boards

- Most universities where research is conducted also have an ***institutional review board*** (IRB).
- An IRB is a group of scholars within a university that reviews and approves their colleagues' research proposals and makes recommendations on how to protect human subjects.
- CITI training and certificate is an important part of IRB review process



# Activity: Design your research

- Ask a research question (narrow down)
- Form a hypothesis
- Pick TWO research methods, one quantitative and one qualitative method
- Share with others!