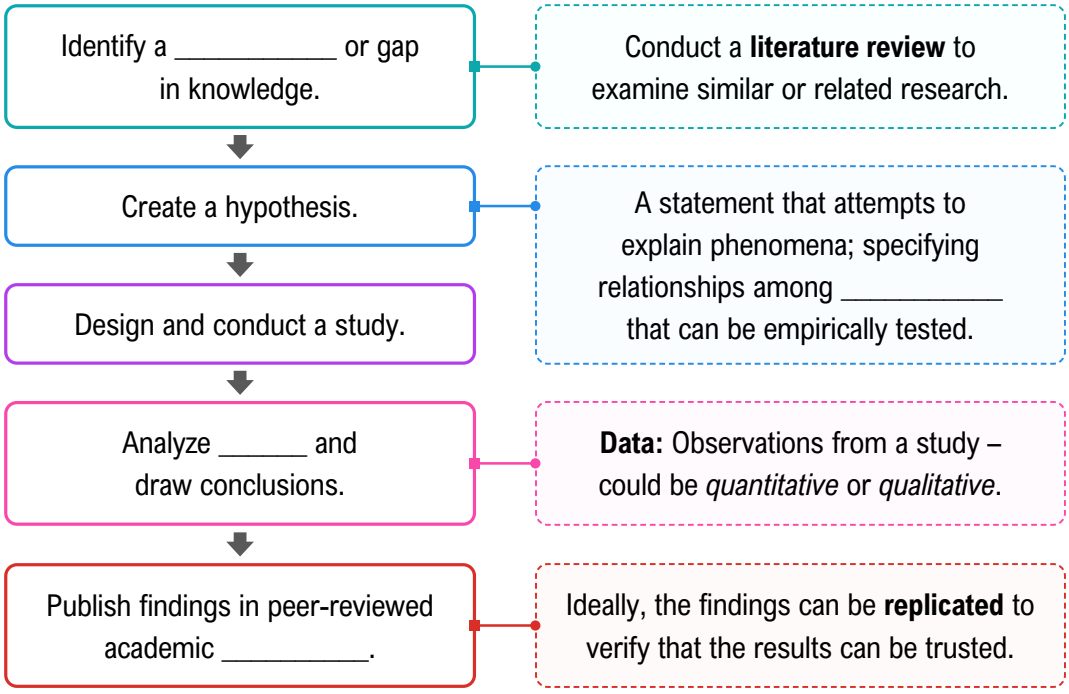
TOPIC: BASICS OF RESEARCH

How the Scientific Method Applies to Sociology

◆ The scientific method guides sociologists as they develop and empirically test theories about society.



EXAMPLE

Which of the following is not an important step of the scientific method?

a) Conducting a literature review to identify a gap in our current knowledge.

b) Creating a hypothesis that specifies the relationship between variables.

c) Proving that your hypothesis is correct.

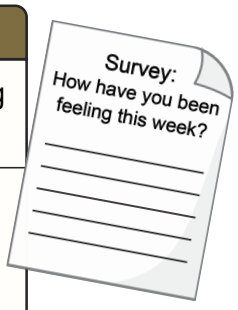
d) Publishing findings in a peer-reviewed journal.

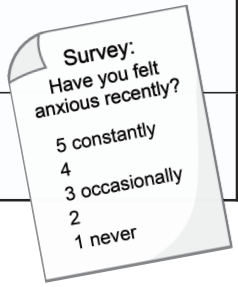
TOPIC: BASICS OF RESEARCH

Qualitative vs. Quantitative Research

◆ There are two types of research 1) Quantitative and 2) Qualitative.

	Quantitative Research	Qualitative Research
Definition	Research method that involves using _____ data.	Research method that involves using _____- numerical data.
Useful For	Understanding relationships between variables, determining cause-and-effect relationships.	Understanding how people _____, experience, and make meaning in their social world.
Data	Numerical.	Text, interview transcripts, field notes, videos, & images.
Analysis	_____.	Finding recurring ideas, themes, or _____ across the data.





EXAMPLE

Complete the Venn diagram using the responses in the box.

a) Research method that involves numerical data.
b) Data commonly comprised of field notes, videos, and images.
c) Research method that involves non-numerical data.
d) Data is usually analyzed using statistics.
e) A useful type of research to understand the social world.

PRACTICE

Grayson, a graduate student, wants to better understand the lives of the unhoused population in his city. Over a period of 6 months he immerses himself within this community, conducting interviews, taking photographs, and making observations. Based on this information, what type of research is Grayson conducting?

a) Quantitative research.
b) Qualitative research.

TOPIC: BASICS OF RESEARCH

Variables

- **Variables:** Construct of interest that can _____ from person to person (or situation to situation).

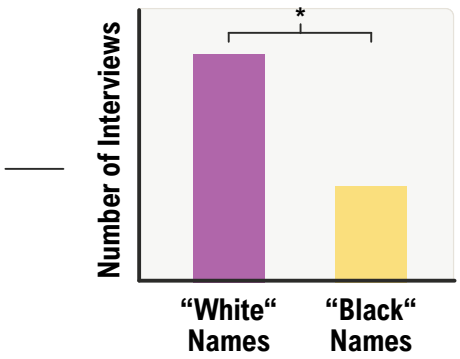
Tip: The dependent variable depends on the independent variable to help it change!

Independent Variable (IV)	Dependent Variable (DV)
A variable believed to influence or change another variable. The hypothesized _____.	A variable that is measured or observed, assumed to be influenced by the IV. The hypothesized _____.

- Independent variables can be 1) **manipulated** or 2) **measured**. Dependent variables are always _____.

Example 1 (IV Manipulated)

Hypothesis: Job applicants with names perceived as stereotypically "White" will get more interviews compared to applicants with names perceived as stereotypically "Black," even if their resumes are identical.

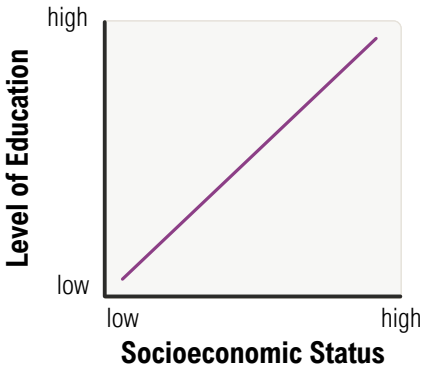


_____

_____

Example 2 (IV Measured)

Hypothesis: Individuals from higher socioeconomic status (SES) backgrounds will attain more years of formal education than individuals from lower SES backgrounds.



_____

_____

TOPIC: BASICS OF RESEARCH

EXAMPLE

A sociologist wants to know whether public beauty (art, murals, flowerbeds) increases community engagement. In one town, public beauty is added to several main streets. In a town with similar demographics, no changes are made. Over the next few weeks, the research team observes community engagement in both locations, tracking both spontaneous social interactions on the street and participation in local events. What is the independent variable? What is the dependent variable?

Independent Variable	
Dependent Variable	

PRACTICE

A research team is investigating the effects of social media use on adolescent mental health. They hypothesize that teens who spend more than 1 hour a day using social media platforms will have poorer mental health compared to adolescents who spend less than 1 hour. In this research study, what is the independent variable?

a) Social media use.

b) Mental health.

TOPIC: BASICS OF RESEARCH

Operational Definitions

- Many concepts in sociology are _____ or difficult to define, so we need to *operationalize* our variables.
- **Operational Definition:** A description of a variable in _____ terms.
  - Tells you how the researcher is going to define and _____ their variable.
  - Allows the research *consumer* to better understand the results of the study.

Example

Research Question: Do children who grow up in **low SES** households have **poorer health** in adulthood?

Researcher 1

Low SES: Childhood household income below the federal poverty line, as reported on tax records.

Poor Health: Self-report questionnaire where health was rated as "poor" or "fair" at age 40.

Researcher 2

Low SES: Parents' highest level of education was high school diploma or less.

Poor Health: Number of severe or chronic health issues diagnosed by a medical provider between ages 18-40.

Even if these studies found the same result, it would mean two _____ things!

EXAMPLE

Two researchers are studying the same question: Does time spent on social media apps affect academic performance in college students? Researcher A defines social media use as "total time spent on any social media platform per day," while Researcher B defines social media use as "the number of times a student checks social media during classes." What does this illustrate?

a) Differences in sampling.
b) The difference in qualitative vs. quantitative research design.
c) How the same variable can be operationalized differently.
d) That social media use is nearly impossible to operationalize.

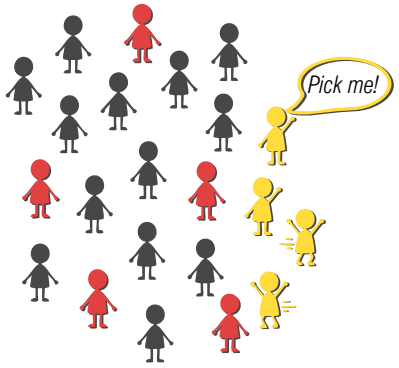
TOPIC: BASICS OF RESEARCH

Research Samples

- **Population:** A _____ set of individuals the researcher is trying to understand.
- **Sample:** The _____, selected from the population, that participates in the research.
- **There are two types of samples:**

Representative Sample

A group of individuals that _____ the population on important characteristics (race, gender, etc.). Often the result of random sampling.



Convenience Sample

A _____-random sample where participants are selected based on their willingness, ability, or motivation to participate in research.

- **Random Sampling:** Every member of the population has an _____ chance of being selected.

EXAMPLE

Which of the following scenarios best describes random sampling?

a) A researcher interviews 100 students at the university she works at to better understand what motivates students to get involved in community activities on campus.

b) A research team randomly selects 1,000 participants from the U.S. Census Bureau.

c) A graduate student posts a research flyer on their social media account to attract participants.

d) A researcher hands out a questionnaire to the students in their Intro to Sociology course.

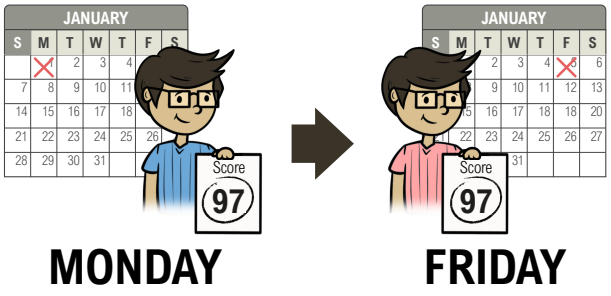
TOPIC: BASICS OF RESEARCH

Reliability and Validity

◆ Studies should be designed to maximize both **reliability** and **validity**:

Reliability

The degree to which an assessment provides _____ scores across time and place.



Validity

How well the study _____ what it is intending to measure.

Variable: Socioeconomic Status

Measured using highest level of education.

Variable: Socioeconomic Status

Measured using a combination of:
1) current household income
2) highest level of education
3) occupational prestige

◆ Good reliability and validity make research more **generalizable**:

- We can more confidently apply findings from our sample to the _____.

EXAMPLE

Dr. Yang is examining the relationship between time spent in nature and job satisfaction. His data shows a correlation coefficient of $r = .006$. Which of the following statements provides the **BEST** description of this data?

a) Time spent in nature and job satisfaction have a strong positive correlation.

b) There appears to be a moderate positive relationship between time spent in nature and job satisfaction.

c) Time spent in nature and job satisfaction are negatively correlated.

d) There appears to be almost no relationship between time spent in nature and job satisfaction.