

Chapter 1: Why the Social Researcher Uses Statistics

1. A sociologist collects information from high school teachers about their job satisfaction. For each of the following items, indicate the level of measurement—nominal, ordinal, or interval:

- a. What field of study do you teach? Math, Science, Social Studies, English, or Other?
- b. How many students do you have in a class?
- c. On a five-point scale (from strongly favorable to strongly unfavorable), how do you feel about your work?
- d. How many years have you been teaching?

Answer:

- a. Nominal
- b. Interval
- c. Ordinal
- d. Interval

2. A political scientist asks a series of questions to gauge how politically active individuals are. For each of the following items, indicate the level of measurement—nominal, ordinal, or interval:

- a. Did you vote in the last election? Yes or No?
- b. With which political party do you identify? Democrat, Republican, or Independent?
- c. How often do you vote in elections? Never, Rarely, Sometimes, or Always?
- d. On a 0–10 scale, how “extreme” do you consider your views? 0 is equivalent to mainstream and 10 is equivalent to radical.
- e. What level of education have you attained? Bachelor’s, Master’s, or Doctorate?
- f. Do you coach a school sports team? Yes or No?

Answer:

- a. Nominal
- b. Nominal
- c. Ordinal
- d. Interval
- e. Ordinal
- f. Nominal

- 3.** A sociologist undertakes a series of studies to investigate various aspects of sports violence. For each of the following research situations, identify the research strategy (experiment, survey, content analysis, or participant observation) and the independent and dependent variables:
- a.** Do male and female sports reporters describe combative sporting events (such as football) in the same way? To find out, the sociologist collects the game reports filed by a number of male and female newspaper writers on the day following the Super Bowl. He compares the aggressiveness contained in the adjectives used by the reporters to describe the game.
 - b.** Do children react differently after watching combative and noncombative sports? To find out, the sociologist randomly assigns school children to watch taped versions of either a hockey game (combative) or a swimming meet (noncombative). She then observes the aggressiveness of play demonstrated by the children immediately following their viewing of the tapes.
 - c.** Are fans more aggressive when their team wins or loses? To find out, the sociologist spends his Saturdays in a sports bar that features the local college game on wide-screen television. He dresses in a team sweatshirt and becomes one of the crowd. At the same time, he observes the extent of arguing and fighting that goes on around him when the team is winning and losing.
 - d.** Do levels of personal aggressiveness influence the kinds of sporting events that people prefer to watch? To find out, the sociologist distributes a questionnaire to a random sample of adults. In addition to standard background information, the questionnaire includes a series of items measuring aggressiveness (for example, "How often do you get involved in heated arguments with neighbors or friends?") and a checklist of which sports the respondents like to watch.

Answer:

- a. Content analysis, IV = gender, DV = aggressiveness in description of Super Bowl.
 - b. Experiment, IV = type of sport, DV = aggressiveness of play
 - c. Participant observation, IV = whether team wins or losses, DV = extent of arguing and fighting
 - d. Survey, IV = aggressiveness, DV = preferred sporting events
4. Identify the level of measurement—nominal, ordinal, or interval/ratio—represented in each of the following questionnaire items:
- a. Your sex:
 1. _____ Female
 2. _____ Male
 - b. Your age:
 1. _____ Younger than 20
 2. _____ 20–29
 3. _____ 30–39
 4. _____ 40–49
 5. _____ 50–59
 6. _____ 60–69
 7. _____ 70 or older
 - c. How many people are in your immediate family? _____
 - d. Specify the highest level of education achieved by your mother:
 1. _____ None
 2. _____ Elementary school
 3. _____ Some high school
 4. _____ Graduated high school
 5. _____ Some college
 6. _____ Graduated college
 7. _____ Graduate/professional school
 - e. Your annual income from all sources: _____ (specify)
 - f. Your religious preference:
 1. _____ Protestant
 2. _____ Catholic
 3. _____ Jewish
 4. _____ Other _____ (specify)

g. The social class to which your parents belong:

1. _____ Upper
2. _____ Upper-middle
3. _____ Middle-middle
4. _____ Lower-middle
5. _____ Lower

h. In which of the following regions do your parents presently live?

1. _____ Northeast
2. _____ South
3. _____ Midwest
4. _____ West
5. _____ Other _____ (specify)

i. Indicate your political orientation by placing an X in the appropriate space:

LIBERAL _____ : _____ : _____ : _____ : _____ : Conservative
1 2 3 4 5

Answer:

- a.** Nominal
- b.** Interval
- c.** Interval
- d.** Ordinal
- e.** Interval
- f.** Nominal
- g.** Ordinal
- h.** Nominal
- i.** Interval (assuming equal intervals between points on scale)

- 5.** For each of the following items, indicate the level of measurement—nominal, ordinal, or interval:
- a.** A tailor uses a tape measure to determine exactly where to cut a piece of cloth.
 - b.** The speed of runners in a race is timed in seconds by a judge with a stopwatch.
 - c.** Based on attendance figures, a ranking of the Top 10 rock concerts for the year is compiled by the editors of a music magazine.
 - d.** A zoologist counts the number of tigers, lions, and elephants she sees in a designated wildlife conservation area.
 - e.** A convenience store clerk is asked to take an inventory of all items still on the shelves at the end of the month.
 - f.** The student life director at a small college counts the number of freshmen, sophomores, The student life director at a small college counts the number of freshmen, sophomores,
 - g.** Using a yardstick, a parent measures the growth of his child on a yearly basis.
 - h.** In a track meet, runners in a half-mile race were ranked first, second, and third place.

Answer:

- a.** Interval
- b.** Interval
- c.** Ordinal
- d.** Nominal
- e.** Nominal
- f.** Ordinal
- g.** Interval
- h.** Ordinal

- 6.** A political scientist undertakes a series of studies to find out more about the voting population in her local town. For each of the following research situations, identify the research strategy (experiment, survey, content analysis, participant observation, or secondary analysis):
- Do males vote more than females? To find out, the researcher analyzes data collected by a major polling organization.
 - How many elderly people living in nursing homes vote? To find out, the researcher visits local nursing homes and questions elderly residents to find out how many voted in the last election.
 - How organized is the election process? On Election Day, the researcher goes to a voting site, pretends to be just another voter, and observes how quickly and efficiently voters are moved through the voting process.
 - Are people more likely to vote if they are well informed about the candidates? To find out, the researcher provides detailed information about both candidates to a random group of citizens over the age of 18 and compares their voter turnout on Election Day to that of a random group of citizens over 18 who did not receive the information.

Answer:

- Secondary analysis
 - Survey
 - Participant observation
 - Experiment
- 7.** Governments can be divided into three different types—unitary governments, federal governments, and confederations—depending on where the concentration of power is located. This would be considered which level of measurement?
- Nominal
 - Ordinal
 - Interval

Answer: (a) Nominal

- 8.** A sociologist conducts a survey to determine the effects of family size on various aspects of life. For each of the following questionnaire items, identify the level of measurement (nominal, ordinal, or interval):
- Does family size affect school performance? Students are asked to circle their letter grade (A, B, C, D, or F) in various school subjects.
 - Does family size differ by socioeconomic status? Parents are asked to provide their yearly income in dollars.

- c.** Does parental health differ by family size? Parents are asked to rate their overall health on a scale from 1 to 5, with 1 being in very good health and 5 being in very poor health.
- d.** Do the effects of family size differ with race and ethnicity? Respondents are asked to indicate if they are black, white, Hispanic, Asian, or other.

Answer:

- a.** Ordinal
 - b.** Interval
 - c.** Interval (assuming equal intervals between points on scale)
 - d.** Nominal
- 9.** To understand better the lives of homeless people, a researcher decides to live on the streets for one week disguised as a homeless person. Which of the following would describe this research strategy?
- a.** Meta-analysis
 - b.** Content analysis
 - c.** Experiment
 - d.** Participant observation
 - e.** Secondary analysis

Answer: (d) Participant observation

- 10.** A social psychologist is interested in studying how people experience grief. For each of the following situations, identify the research strategy (experiment, survey, content analysis, or participant observation) that she would be using:
- a.** To find out how people cope with the loss of loved ones, the psychologist selects a random sample of people and distributes a questionnaire that asks them to provide information about their personal grieving experiences.
 - b.** The psychologist attends a grief-counseling meeting and pretends that she is one of the mourners (after having obtained permission from the grief counselor). In this way, she is able to observe firsthand how people express their grief.
 - c.** The grief counselor provides the psychologist with several anonymous journals in which people are urged to express their grief by writing down their thoughts and feelings in a stream-of-consciousness manner. The psychologist then reads through the various journal entries in an attempt to find patterns in the way that people experience grief.

Answer:

- a.** Survey
- b.** Participant observation
- c.** Content analysis

Chapter 2: Organizing the Data

1. From the following table representing achievement for 173 television viewers and 183 nonviewers, find (a) the percent of nonviewers who are high achievers, (b) the percent of viewers who are high achievers, (c) the proportion of nonviewers who are high achievers, and (d) the proportion of viewers who are high achievers.

Achievement	Viewing Status	
	<i>Nonviewers</i>	<i>Viewers</i>
High achievers	93	46
Low achievers	90	<u>127</u>
Total	183	173

Answer:

a.

$$\begin{aligned}\% &= (100)\frac{f}{N} \\ &= (100)\frac{93}{183} \\ &= 50.8\%\end{aligned}$$

b.

$$\begin{aligned}\% &= (100)\frac{f}{N} \\ &= (100)\frac{46}{173} \\ &= 26.6\%\end{aligned}$$

c.

$$\begin{aligned} P &= \frac{f}{N} \\ &= \frac{93}{183} \\ &= 0.51 \end{aligned}$$

d.

$$\begin{aligned} P &= \frac{f}{N} \\ &= \frac{46}{173} \\ &= 0.27 \end{aligned}$$

2. From the following table illustrating the handedness of a random sample of men and women, find (a) the percent of men who are left-handed, (b) the percent of women who are left-handed, (c) the proportion of men who are left-handed, and (d) the proportion of women who are left-handed. (e) What can you conclude about gender and the prevalence of left-handedness?

Handedness of Men and Women		
Handedness	Gender	
	<i>Male</i>	<i>Female</i>
Left-handed	15	8
Right-handed	<u>86</u>	<u>114</u>
Total	101	122

Answer:

a.

$$\begin{aligned}\% &= (100) \frac{f}{N} \\ &= (100) \frac{15}{101} \\ &= 14.9\%\end{aligned}$$

b.

$$\begin{aligned}\% &= (100) \frac{f}{N} \\ &= (100) \frac{8}{122} \\ &= 6.6\%\end{aligned}$$

c.

$$\begin{aligned}P &= \frac{f}{N} \\ &= \frac{15}{101} \\ &= 0.15\end{aligned}$$

d.

$$\begin{aligned}P &= \frac{f}{N} \\ &= \frac{8}{122} \\ &= 0.07\end{aligned}$$

e. Left-handedness is more prevalent among men.

3. As part of a public health survey, a random sample of college students were asked about their weekly drinking habits. The following results were obtained:

Gender of Student	Never	< 3 Drinks per Week	3+ Drinks per week
Men	116	88	49
Women	164	104	32

- Are there independent and dependent variables in this case? If so, what are they? If not, why not?
- What percent of the sample reports not drinking?
- What percent of men report drinking, but having fewer than three drinks per week?
- What percent of women report drinking, but having fewer than three drinks per week?
- What percent of men report drinking at least three drinks per week?
- What percent of women report drinking at least three drinks per week?
- What percent of the sample reports having at least three drinks per week?

Answer:

- Gender is the independent variable
Number of drinks is the dependent variable

b.

$$\begin{aligned} \% &= (100) \frac{f}{N} \\ &= (100) \frac{280}{553} \\ &= 50.6\% \end{aligned}$$

c.

$$\begin{aligned} \% &= (100) \frac{f}{N} \\ &= (100) \frac{88}{253} \\ &= 34.8\% \end{aligned}$$