**Chapter 1: Work Questions**

Instructions: classify the measurement type in each of the following examples as:

1. Nominal
2. Ordinal
3. Interval/ratio
   1. An individual’s religious affiliation

Answer: a. Nominal

Objective: Conceptual

Page number: 12–15

Level: Intermediate

* 1. A person’s occupation

Answer: a. Nominal

Objective: Conceptual

Page number: 12–15

Level: Intermediate

* 1. A person’s IQ score

Answer: c. Interval/ratio

Objective: Conceptual

Page number: 8–12

Level: Intermediate

* 1. A person’s age in years

Answer: c. Interval/ratio

Objective: Conceptual

Page number: 8–12

Level: Intermediate

* 1. A person’s hair shade (very light, light, medium, dark, very dark)

Answer: b. Ordinal

Objective: Conceptual

Page number: 8–12

Level: Intermediate

* 1. An individual’s racial background

Answer: a. Nominal

Objective: Conceptual

Page number: 8–12

Level: Intermediate

* 1. A person’s hair color (red, brown, blonde, etc.)

Answer: a. Nominal

Objective: Conceptual

Page number: 8–12

Level: Intermediate

* 1. Someone’s comprehension of another language (illiterate, read/speak somewhat, fluent)

Answer: b. Ordinal

Objective: Conceptual

Page number: 8–12

Level: Intermediate

* 1. A person’s highest degree earned (less than high school, completed high school, some college, etc.)

Answer: b. Ordinal

Objective: Conceptual

Page number: 8–12

Level: Intermediate

1. The number of children a person has

Answer: c. Interval/ratio

Objective: Conceptual

Page number: 8–12

Level: Intermediate

**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:

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

Answer:

* 1. Nominal
  2. Interval
  3. Ordinal
  4. Interval

1. 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:
   1. Did you vote in the last election? Yes or No?
   2. With which political party do you identify? Democrat, Republican, or Independent?
   3. How often do you vote in elections? Never, Rarely, Sometimes, or Always?
   4. On a 0–10 scale, how “extreme” do you consider your views? 0 is equivalent to mainstream and 10 is equivalent to radical.
   5. What level of education have you attained? Bachelor’s, Master’s, or Doctorate?
   6. Do you coach a school sports team? Yes or No?

Answer:

* 1. Nominal
  2. Nominal
  3. Ordinal
  4. Interval
  5. Ordinal
  6. Nominal

1. 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:
   1. 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.
   2. 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.
   3. 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.
   4. 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:

* 1. Content analysis, IV = gender, DV = aggressiveness in description of Super Bowl.
  2. Experiment, IV = type of sport, DV = aggressiveness of play
  3. Participant observation, IV = whether team wins or losses, DV = extent of arguing and fighting
  4. Survey, IV = aggressiveness, DV = preferred sporting events

1. Identify the level of measurement—nominal, ordinal, or interval/ratio—represented in each of the following questionnaire items:
   1. Your sex:
      1. \_\_\_\_\_ Female
      2. \_\_\_\_\_ Male
   2. 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
   3. How many people are in your immediate family? \_\_\_\_\_\_\_\_\_\_\_
   4. 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
   5. Your annual income from all sources: \_\_\_\_\_\_\_\_\_\_\_ (specify)
   6. Your religious preference:
      1. \_\_\_\_\_ Protestant
      2. \_\_\_\_\_ Catholic
      3. \_\_\_\_\_ Jewish
      4. \_\_\_\_\_ Other \_\_\_\_\_\_\_\_\_\_\_ (specify)
   7. The social class to which your parents belong:
      1. \_\_\_\_\_ Upper
      2. \_\_\_\_\_ Upper-middle
      3. \_\_\_\_\_ Middle-middle
      4. \_\_\_\_\_ Lower-middle
      5. \_\_\_\_\_ Lower
   8. In which of the following regions do your parents presently live?
      1. \_\_\_\_\_ Northeast
      2. \_\_\_\_\_ South
      3. \_\_\_\_\_ Midwest
      4. \_\_\_\_\_ West
      5. \_\_\_\_\_ Other \_\_\_\_\_\_\_\_\_\_\_ (specify)
   9. Indicate your political orientation by placing an X in the appropriate space:

LIBERAL­­­\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:Conservative

1 2 3 4 5

Answer:

* 1. Nominal
  2. Interval
  3. Interval
  4. Ordinal
  5. Interval
  6. Nominal
  7. Ordinal
  8. Nominal
  9. Interval (assuming equal intervals between points on scale)

1. For each of the following items, indicate the level of measurement—nominal, ordinal, or interval:
   1. A tailor uses a tape measure to determine exactly where to cut a piece of cloth.
   2. The speed of runners in a race is timed in seconds by a judge with a stopwatch.
   3. Based on attendance figures, a ranking of the Top 10 rock concerts for the year is compiled by the editors of a music magazine.
   4. A zoologist counts the number of tigers, lions, and elephants she sees in a designated wildlife conservation area.
   5. A convenience store clerk is asked to take an inventory of all items still on the shelves at the end of the month.
   6. 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,
   7. Using a yardstick, a parent measures the growth of his child on a yearly basis.
   8. In a track meet, runners in a half-mile race were ranked first, second, and third place.

Answer:

* 1. Interval
  2. Interval
  3. Ordinal
  4. Nominal
  5. Nominal
  6. Ordinal
  7. Interval
  8. Ordinal

1. 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):
   1. Do males vote more than females? To find out, the researcher analyzes data collected by a major polling organization.
   2. 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.
   3. 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.
   4. 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:

* 1. Secondary analysis
  2. Survey
  3. Participant observation
  4. Experiment

1. 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?
   1. Nominal
   2. Ordinal
   3. Interval

Answer: (a) Nominal

1. 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):
   1. Does family size affect school performance? Students are asked to circle their letter grade (A, B, C, D, or F) in various school subjects.
   2. Does family size differ by socioeconomic status? Parents are asked to provide their yearly income in dollars.
   3. 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.
   4. 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:

* 1. Ordinal
  2. Interval
  3. Interval (assuming equal intervals between points on scale)
  4. Nominal

1. 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?
   1. Meta-analysis
   2. Content analysis
   3. Experiment
   4. Participant observation
   5. Secondary analysis

Answer: (d) Participant observation

1. 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:
   1. 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.
   2. 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.
   3. 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:

* 1. Survey
  2. Participant observation
  3. Content analysis

Chapter 1: Why the Social Researcher Uses

Statistics

Chapter Overview

In the first chapter, we linked our everyday predictions about the course of future events with the experiences of social researchers who use statistics as an aid in testing their hypotheses about the nature of social reality. Almost daily, everyone takes educated guesses about the future events in their lives. Unlike haphazard and biased everyday observations, however, researchers seek to collect *systematic* evidence in support of their ideas. For this purpose, and depending on their particular research objective, they might decide to conduct a survey, an experiment, participant observation, content analysis, secondary analysis, or meta-analysis. Depending on the particular level of measurement, series of numbers are often employed by social researchers to categorize (nominal level), rank (ordinal level), or score (interval/ratio level) their data. Finally, social researchers are able to take advantage of two major functions of statistics in the data-analysis stage of social research: description (that is, reducing quantitative data to a smaller number of more convenient descriptive terms) and decision making (that is, drawing inferences from samples to populations).

Learning Objectives

Students should be able to do the following at the end of this chapter:

1.1: Illustrate research strategies employed by social researchers to test their hypotheses on the nature of social reality

1.2: Relate the importance of testing hypotheses about the nature of social reality given that we may be misled by our preconceptions

1.3: Report the steps of systematically testing our ideas about the nature of social reality

1.4: Illustrate how social researchers use numbers to categorize, rank, and score their data depending upon the level of measurement

1.5: Demonstrate how statistics is used as a tool for description and decision making in the data-analysis stage of social research

Chapter Outline

Introduction: Why the Social Researcher Uses Statistics

It is common to make predictions—to invest in the stock market, choose which candidate to vote for, take medicine for a cold, and so forth. Sometimes are predictions are correct, sometimes they are not.

**The Nature of Social Research.**

* **Variables and Constants** - Aspects such as gender of mother (female) are constants among population, whereas aspects such as age of mother vary across populations or over time.
* **Unit of Observation** - Data on individuals or aggregate data, such as cities or households
* **Hypothesis** - Statement of a relationship between two or more variables
* **Dependent and Independent Variables** - Independent variables are the presumed causes, whereas the dependent variables are the presumed effects.
* **Research Methods** - Experiment; survey; content analysis; participant observation; secondary analysis; and meta-analysis

**Why Test Hypotheses?** The social reality of matters is likely to be different from commonly held perceptions, so hypothesis testing helps us to empirically test the validity of relationships.

The Stages of Social Research:

1. Identify problem
2. Develop instruments
3. Collect data
4. Analyze data
5. Interpret and communicate results

**Using Series of Numbers to Do Social Research** - Data help with performing statistical analysis and testing hypotheses.

* Three Major Levels of Measurement - Nominal, Ordinal, and Interval/Ratio
* Nominal - Involves naming or labeling. The categories must be mutually exclusive, meaning that every case must be placed in one, and only one, category.
* Ordinal – Involves ordering cases in terms of the degrees to which they have any given characteristic. This yields information about the ordering of categories, but it does not indicate the magnitude of differences between categories.
* Interval/Ratio - Involves using constant units of measurement, which yield equal intervals between points on the scale. Ratio also has a true or absolute zero point.
* Some variables can be measured using different levels, depending on the hypothesis
* Variables that are ordinal may be treated as interval, when the ordered categories are fairly evenly spaced

**The Functions of Statistics** - Statistics functions as a tool of description or decision making.

* Data can be described and analyzed through frequency distributions or graphs, or by basic descriptive statistics.
* Data can be used to make inferences, to make decisions based on data collected on only a sample of the larger group.
* Statistical significance – A researcher needs to establish a level of significance in his or her research; helps determine whether results can be generalized from the sample to the population.
* Rounding off - We usually round off the final answer to two decimal places and do not round off while calculating the intermediate steps.
* Summary: Why the Social Researcher Uses Statistics

Key Terms

hypothesis

variable

experiment

survey

content analysis

participant observation

secondary analysis

meta-analysis

measurement

level of measurement

nominal

ordinal

interval/ratio

Demonstrations and/or Activities

Pick any current issue, such as depression or cancer, and try to get students to determine what the independent variables might be for such an issue. Clearly demonstrate how the outcome is the dependent variable, whereas the inputs are all independent variables in such cases.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

HANDOUT 1.1  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DETERMINING LEVELS OF MEASUREMENT  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Taken from Chapter 1, the following handout can be used as a quiz, an in-class assignment, or for discussion. The features that you might point out are as follows:

* Nominal variables classify or categorize data.
* Ordinal variables rank or order the variable attributes in a logical or meaningful way.
* Interval/ratio variables assign a score that is at an equal distance, or interval, from those scores adjacent to them. This allows a greater number of mathematical techniques.

**Handout 1.1**

Name: Date: Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

LEVELS OF MEASUREMENT

* 1. Suppose you were interviewing people about their views on gun control. You ask the respondents the following question: How much do you agree or disagree with this statement, “The United States needs stiffer laws controlling the purchase and ownership of guns.” The respondents are then asked to rank their feelings on the following scale: strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, or strongly disagree. You would be using what level of measurement?
     1. Nominal
     2. Interval/ratio
     3. Ordinal
  2. The jersey numbers associated with players on a baseball team are examples of scores on a(n):
     1. nominal scale.
     2. interval/ratio scale.
     3. ordinal scale.
  3. Compared to the ordinal level of measurement, the interval/ratio level:
     1. not only indicates the order of categories but also the exact distance between them.
     2. does not provide labeling of each score.
     3. starts from a true zero point.
     4. only categorizes.
  4. Statistics can be used to:
     1. reduce data to more easily understood, descriptive terms.
     2. generalize results.
     3. determine when an observed difference between two or more groups is the result of chance, or when it is the result of real differences between groups.
     4. all of the above
  5. Sociologists use measurement to:
     1. classify or categorize data.
     2. rank order data.
     3. assign a score.
     4. all of the above

Handout 1.1 Continued

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Nominal measurement is used primarily to:
     1. classify or categorize data.
     2. rank order data.
     3. assign a score.
     4. all of the above
  2. Ordinal measurement is used primarily to:
     1. classify or categorize data.
     2. rank order data.
     3. assign a score.
     4. all of the above

Classify the measurement type in each of the following examples as:

* + - 1. nominal
      2. ordinal
      3. interval/ratio  
         1. What city you live in
         2. The number of children in a family
         3. Tuition in dollars
         4. Attitudes toward premarital sex between consenting adults (always wrong, usually wrong, sometimes wrong, never wrong)

The numbers on an athlete’s jersey \_\_\_\_\_\_\_\_\_\_

Racial categories

Fear of crime (a lot, some, none)

The number of hours per week a survey respondent watches TV

The number of stolen cars in a city   
  
**What Are the Independent and Dependent Variables?**

A social researcher is attempting to look at the relationship between race and income.

A sociologist conducts research on religious affiliation and views on premarital sex.

A sociologist examines the relationship between being drunk and a person’s bowling score.

A sociologist examines the relationship between political party affiliation and views on the War in Afghanistan.

**Handout 1.2**

Describe a research project students might like to carry out, including how they would approach each of the five stages of social research. Have the other students critique their implementation of the steps and make suggestions for improvement.

* 1. Reduce the problem to a testable hypothesis.
  2. Develop an appropriate set of instruments.
  3. Collect data.
  4. Analyze the data in light of the initial hypotheses.
  5. Interpret and communicate the results.

**Handout 1.3**

Describe a research question that interests you. Consider how you might devise a research project using one or more of the following methodologies, and explain why each methodology is or is not appropriate for your question. It is possible that more than one methodology could be used to address a particular research question.

1. The experiment
2. The survey
3. Content analysis
4. Participant observation
5. Secondary analysis
6. Meta-analysis