

## ACTIVITY 2

PART A – January 11, 2018

Week 2, Thursday

**Due:** Thursday, January 18

**Instructions:** A hard copy of the final version of Activity #2 is due on Thursday, January 18 (Week 3). You will be given the activity in parts, but it is your responsibility to keep track of all questions on one master document for each respective activity.

- (1) For each of the following, identify whether or not we are discussing a **nominal**, **ordinal**, or **interval-ratio** level of measurement:
  - a. A variable that does not have categories
  - b. A person's opinion on the tax plan (agree, neutral, disagree)
  - c. A person's party identification (Democrat, Independent, Republican)
  - d. Age, when measured by how old a respondent reports themselves to be
  - e. A variable with categories, but we are unable to rank the categories
- (2) Calculate the **mean** for the data that you see on the screen. Show your work.
- (3) Calculate the **mean** for the data that you see on the screen. Show your work.
- (4) Calculate the **median** for the data that you see on the screen. Show your work.
- (5) Calculate the **mode** for the data that you see on the screen. Show your work.
- (6-9) Answer the questions about **level of measurement**.
- (10-13) Answer the questions about **measures of central tendency**.
- (14-17) Answer the questions about **bar graphs** or **histograms**.

You have been tasked to figure out why midterm scores for this class have been so low. Essentially, this is our research question: What factors affect midterm scores in Dr. Guerrero's class? Using the scientific method, come up with one hypothesis that explains the midterm score in this particular class. Using the data spreadsheet given to you on the course webpage, develop a hypothesis around this explanation.

- (18) What is your hypothesis?
- (19) What is the null hypothesis?

Find a partner to work with for this next part.

- (20) Who is your partner?
- (21) What is their hypothesis? Clarify your partner's hypothesis if need be.
- (22) Determine if your partner's hypothesis is **directional** or **non-directional**?
- (23) What concept in that hypothesis would serve as the **independent variable**?
- (24) What concept in that hypothesis would serve as the **dependent variable**?
- (25) What is a possible **causal mechanism** for this hypothesis? *Explain your logic.*

With your partner, choose the hypothesis that you think is more likely to be correct. Use that hypothesis to answer the following two questions.

(26) For your independent variable:

- (a) What is the **level of measurement** for this variable?
- (b) Report the value(s) for the most appropriate measure of **central tendency**.
- (c) Report the value(s) for **variability**.
- (d) Draw the most appropriate graph for this variable.

(27) For your dependent variable:

- (a) What is the **level of measurement** for this variable?
- (b) Report the value(s) for the most appropriate measure of **central tendency**.
- (c) Report the value(s) for **variability**.
- (d) Draw the most appropriate graph for this variable.