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Note: Prior to the assignment, students receive instruction on:

- Correlational Research and how it is conducted
- What data is collected
- How the data is analyzed (scatterplots, correlation coefficients, and significance testing), and how it is interpreted and analyzed
- Students see demonstrations and do practice activities in class.

While completing the assignment:

- Students have 8 weeks to complete the project
- The project is broken into steps, with class time to discuss each step, both as a class and in research teams:
  - Research question development
  - Article search (outside of class) leading to development of hypothesis, variables, sampling plan
  - Data collection
  - Data calculations and analysis
  - Discussion and conclusions
- Students have two weeks to collect their data

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PSY 138 Research Methods in Behavioral Sciences

What's the Relationship? Are Those Behaviors *Really* Related?
Correlational Research Assignment

The purpose of this assignment is to design a correlational research study to answer a correlational research question. You will work in groups of 3-4 students.

To complete the assignment:

Part 1

1. As a group, develop a correlational research question that looks at the relationship between two behaviors. You should select two common variables that can be measured on a rank ordered or continuous scale.

   For example, your question could be, "Is there a relationship/association between…"

   a. Family income and years of education completed
   b. Family income and number of children
   c. Hours/week a student works and his/her GPA

    d. Hours/week a student watches sports on television and hours/week spent studying
2. Locate 1-2 empirical research articles that investigated the relationship between the variables. You will test the research results by conducting your own research study.
3. Describe your variables:
    a. What are the operational definitions?
    b. What is your measurement scale?

4. State your hypothesis. Are you predicting a positive, negative, or no relationship between your variables?

5. Decide on your population and sample. You should consider the following:
    a. Population demographics, for example: age; gender; ethnicity, socioeconomic status, and/or any other characteristics appropriate for your research question.
    b. Sample selection: probability (which type)? Non-probability (which type)?

6. Once you have your research question, variables, and hypothesis, each group member should collect data from a minimum of 15 individuals.

7. Using an Excel spreadsheet, set up your data:
    a. Enter the data from you and your group by creating three columns of information:
        1. Subject number (1, 2, 3, …)
        2. Variable 1 (enter measurement for each subject)
        3. Variable 2 (enter measurement for each subject)
    b. Create a scatterplot.
    c. Calculate Pearson's *r* correlation coefficient.
    d. Determine whether the correlation coefficient is statistically significant at the .05 alpha level. Use this **link** to go to an online significance of correlation calculator. Use the "directional" result for your *p* value.
8. Print your Excel spreadsheet (which contains data, scatterplot, and Pearson r).

Part II

Individually, submit a written paper (typed, double-spaced) 12-point font) describing the following items. You should write a minimum of one paragraph for each item.

1. Your research question and hypothesis:
    a. What was your research question? Why were you interested in researching this topic?
    b. What did you hypothesize about the relationship (correlation) between your variables?
    c. Why did you believe there was a relationship between the variables, and in what direction did you believe there would be a relationship?
    d. Note: when answering these questions, be sure to refer to your empirical research article(s).
2. Your variables:
    a. How did you measure your variables?
        1. What scales did you use?
        2. What was the range of the scale?
        3. How was the scale scored?
3. Your sample:
    a. What were your sample demographics?
    b. How did you select your sample?
4. Answer to your research question:
    a. What was the correlation (positive, negative, no correlation) between your variables?
        1. Describe and interpret the scatterplot
        2. Describe and interpret the effect size (Pearson r)
        3. How strong was the correlation?
        4. In what direction is the correlation?
    b. What was that statistical significance?
        1. Describe and interpret the *p* value
        2. Is the correlation significant?
    c. Are the results what you hypothesized? Why or why not?
    d. What are the limitations of your study?
        1. Are your results generalizable? Why or why not?
        2. How did your sample affect your results?
    e. If you were to repeat your study, how could you improve it?