**Class Activities**

Chapter Thirteen: Regression and Correlation

Activity #1 (Group)

Have each group identify four individual attributes that each group member can provide information about. For instance, the group may select height, shoe size, and number of beers consumed each day. Ask each group to answer the following questions:

a) Discuss whether any of the bivariate relations would seem at the outset to be linear. What are the reasons that some relationship may be linear and some may not be linear?

b) Construct scatter diagrams relating each pair of variables. Were your intuitions from the previous question correct? Do the relationships appear to be linear?

c) Following the example in Table 13.4, see if your group is able to generate prediction equations for each pair of variables. Provide a written or verbal interpretation of the regression model, including the coefficients of *a* and *b*.

d) Calculate Pearson’s correlation coefficient, *r*, and the coefficient of determination, *r2*. Provide a written or verbal interpretation of each. What do these values tells us about the regression equations for the above pairs of variables?

Activity #2 (Group)

Have each group find a peer-reviewed journal article that uses multiple regression. Ask each group to interpret the regression coefficients, the values of Pearson’s correlation coefficient, *r*, and the coefficient of determination, *r2* , if they are provided in the article. Have each group answer the following questions about their article:

a) Are the regression models in these papers easy to understand? Why or why not?

b)What story was the author trying to tell through the use of a multiple regression model?

Activity #3 (Individual)

Have each student read the following report on education, income inequality and mortality: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=61654>. Students should be able to answer the following questions:

a)What is the author’s argument and why did the author employ the use of multiple regression?

b) Is the use of multiple regression appropriate in this case? Why or why not?

c) Is the author’s analysis exhaustive, or has the author left any other variables that seem to be important?

d) What are the potential problems with the omission of other potentially relevant variables? Could this bias the results shown in the report in any way? If so, how?

Activity #4 (Individual)

Have students think of and list three different bivariate relationships they can examine in their own fields of study in which both variables are scale variables. For example, age and number of sexual partners, GPA and number of drinks they have in a week, etc.

Activity #5 (Group or individual)

Ask students to create a one scale measure that is made up of five dichotomous variables. For example a measure on religiosity, a stress measure, or a measure on family closeness. This exercise shows students how they can use nominal and ordinal variables to create scale variables that can be used in regression analysis.