For written assignments, you will need to attach three files:

Word Document (with responses to the assignment questions).

SPSS syntax file (to show the procedures you used in the analysis)

SPSS output file (to show the output you are using in your analysis)

Note: Remember to remove filters for subsequent questions.

1. Using the data file BUCJ59105ACHICAGO.SAV: You have been asked to develop a statistical profile of crime in the city in 2020 and answer the following questions. In your answer, use an appropriate tabular or graphic technique that displays the answer to others in an effective way:
   1. What were the three most frequent offenses occurring in the city in 2020?
   2. What were the three districts that had the highest number of crimes reported?
   3. Homicide is a concern – what districts reported the most homicides in 2020?
   4. What percent of all crimes reported in 2020 were cleared by arrest?
   5. What percent of all crimes involved a domestic component?
2. Using the file BUCJ59105CCHICAGOCCAS.SAV
   1. Compute two new variables:
      1. BURGRATE
      2. MVTHEFTRATE
   2. How many community areas are there in Chicago?
   3. For each of these variables, what is the minimum rate? The maximum rate? The median rate? The mean rate? The standard deviation?
   4. What variables for the neighborhood would you want to consider looking at to explore these differences?
3. Analysis of Variance. Using the file BUCJ59105CCHICAGOCCAS.SAV, look at the relationship between unemployment rates and burglary rates using an analysis of variance model. The variable UNEMPGROUP assigns neighborhoods to one of three groups: low unemployment rate (under 6.5%); moderate unemployment rate (6.5% up to 13.8%); and high unemployment (13.8% or higher). This variable creates three equal groups of 25 neighborhoods each. The two neighborhoods with the highest unemployment rates were not assigned to a group.
   1. Consider the relationship between unemployment rates in the neighborhood and burglary rates. Perform a one-way analysis of variance
   2. What are the mean burglary rates for each of the three groups?
   3. Is there a significant difference between the groups? What statistic did you use to make this conclusion?
   4. Which groups are different from each other? Are any groups not statistically significantly different?
   5. Based on the results of your analysis, what policies would you recommend to city leadership to reduce burglary rates in the city? Can you relate your findings to a theory from criminology?

1. Linear regression. Using the file BUCJ59105CCHICAGOCCAS.SAV, Consider the relationship of motor vehicle theft rates and median income rates in the neighborhoods. You will use your own variable MVTHEFTRATE along with MEDINC.
   1. Do a scatterplot with trendline of MVTHEFTRATE and MEDINC with MEDINC in the x-axis and MVTHEFTRATE on the y-axis. What does the trend line indicate? Are neighborhoods with higher incomes more or less likely to report a motor vehicle theft?
   2. Write an equation for the regression model.
   3. Are the results statistically significant?
   4. What does the R2 tell us? Why is it important?
   5. In a few sentences, interpret the results of your analysis. What policies would you recommend to city leadership to reduce motor vehicle theft in the city? Can you relate your findings to a theory from criminology?