Homework assignment 06

Use black text (if possible) for everything you include in this document. Keep both your answers and the original questions. Save this document in PDF format and submit it on Canvas. Include your last name, the course number and the module number in the name of your file.

For every assignment, make sure that your graphs conform to the following requirements:

* Do not display unnecessary decimal places on your graph axes.
* Include units of measurement (when appropriate) on graph axis labels
* Avoid the use of color in histograms. Fill boxes and points with white or transparent colors.
* Include ticks on both axes
* Replace the default title provided by SPSS with one that includes your name and the date
  + For example, “This scatterplot was produced by Steve Simon on 2023-09-19”

For this assignment and any future assignments, you do not need to show dialog boxes or program code. You are welcome to use a program other than SPSS (e.g., Python, R, SAS, Stata) if you are adventurous.

1. Show a documentation header.

2. Download the file data-06-crp.sas7bdat and import it into SPSS. Display the first ten rows of data.

3. You can assess how CRP has changed over time either by computing a difference (CRP\_6WK – Baseline\_CRP) or by computing a ratio (CRP\_6WK / Baseline\_CRP). Run both calculations. Show the first ten rows of data after making these computations.

4. Draw histograms for the difference and ratio. Change the histograms so that the width of the bars is 10 units starting at -80 for the difference histogram and 1 unit starting at zero for the ratio histogram. Display both histograms below.

5. Draw a Q-Q plot for both variables. You do not need to adjust the colors, axis values or axis labels, but include your name and date in the titles. Display both plots below, but do not include the detrended plot.

6. Calculate the skewness and kurtosis for both variables. Display the tables below.

7. Assess the normality or lack of normality using all of the information above. If any of the information is contradictory, point this out.

8. Calculate the log transformation of ratio. Assess the normality or lack of normality using the histogram, Q-Q plot, skewness, and kurtosis. Adjust the number of bars and/or the width in the histogram as you see fit (the default is actually not that bad!). Include the graphs and tables below.

9. Assess the normality or lack of normality for the log ratio using all of the information above. If there are any contradictory results, make not of them.

10. Explain why I did not ask you to calculate a log transformation on the difference variable.

11. Download the file data-06-housing.csv and import it into SPSS. Show the first ten rows of data.

12. Draw a graph showing the relationship between the size of the house and the price. Include a linear trend line. Show the graph below.

13. Use the general linear model to estimate the slope and intercept of the linear trend line. Include the output below.

14. Interpret the slope and intercept.

15. Draw a scatterplot showing the relationship between the custom-build and the price. Include a linear trend line. Show the graph below.

16. Use the general linear model to estimate the slope and intercept of the linear trend line. Include the output below.

17. Interpret the slope and intercept.