Homework assignment 11

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. Please follow the general requirements described in the grading rubric.

1. Show a documentation header. Include your name, the purpose of the program, and the conditions under which others may or may not use your results.

2. Open the comma delimited text file absorbent-paper.csv and display the first ten rows of data.

3. Calculate the mean and standard deviation for Measure1 and Measure2. Do the two measurements look comparable (approximately the same mean and standard deviation)?

4. Restructure the data so that Measure1 and Measure2 are in the single column named fpa. Please save your original data as an SPSS sav file before running the restructure. In your restructured dataset, make sure to include a new variable, evaluation, that is equal to “First” for the data coming from Measure1 and “Second” for the data coming from Measure2. Also keep the case and foot variables in the restructured dataset. Save the restructured data as a new SPSS sav file. Show the first ten rows of this restructured data.

5. Calculate the mean and standard deviation for fpa, separately for the left foot and the right foot. Do the two feet look comparable?

6. Calculate a variance components model for the restructured dataset. Specify case as a random factor. Specify foot and evaluation as fixed factors. Build a model with foot, evaluation and case as main effects, but no interactions. Click on the Options button and specify the ANOVA method and display sums of squares and expected mean squares.

7. Use a calculator to compute the intraclass correlation. Interpret this number.

8. (Extra credit, 2 points) Using a calculator, compute the F ratios for testing the effects of foot and evaluation. Both foot and evaluation are within subject comparisons, so you should use the same mean square error in the denominator for both tests. Explain which mean square is appropriate for these two comparisons. Use the calculator at

<https://homepage.divms.uiowa.edu/~mbognar/applets/f.html>

to compute p-values for the two F ratios. Interpret these p-values.