

The invalid assumption that correlation implies cause is probably among the two or three most serious and common errors of human reasoning.

– Stephen J. Gould

Name: _____

DUE In One Week

The goal of this assignment is to learn how to do multiple correlations at one time. As you can see on the back of this page, five variables were measured: **CpW** (cups of coffee per week), **AFstCell** (age when owned first cellphone), **FFpM** (fast food visits per month), **TpY** (number of tacos eaten per year), and **ASOCcell** (the age a child should be to own their first cell phone). Enter the data provided into **SPSS-28** and create a correlation matrix. That only means you will be telling SPSS to perform all correlations at the same time. If you prefer, you *can* do them one at a time (i.e., 10 different correlations) – but that seems like a waste of time to me.

Part I

Create an SPSS data file to be analyzed.

[After data entry: Analyze → Correlate → Bivariate → Select all data variables to analyze → OK]

Part II

Use SPSS to calculate a **complete correlation matrix**. (a) The 10 correlations should be summarized below in the UNSHADED portions of the table; (b) The *best (strongest) correlation* should be recorded in the blanks beneath the table (note that $df = N - 2$, where N represents the number of *pairs* of data being compared in the correlation – so in this case we had data from **32** people, your df should be **30**); and (c) then generate scatter-plots (two per page would be ideal) of the *two strongest* and the *two weakest* correlations identified in the correlation table below.

| | CpW | AFstCell | FFpM | TpY | ASOCcell |
|-----------------|------------|-----------------|-------------|------------|-----------------|
| CpW | 1.00 | | | | |
| AFstCell | | 1.00 | | | |
| FFpM | | | 1.00 | | |
| TpY | | | | 1.00 | |
| ASOCcell | | | | | 1.00 |

The strongest correlation obtained was: _____ correlated with _____.

$r =$ _____ $df =$ 30 $p =$ _____

Part III

Use SPSS to **generate scatter-plots of four correlations** (explore the SPSS options under *Graphs → Legacy Dialogs → Select the Scatter/Dot option, then tiny graph with dots: “Simple Scatter” → Define → Select a variable for the Y Axis and then a variable for the X Axis → OK → A scatter plot will be generated, but you will need to double-click on it to activate options → This will generate your graph in a stand-alone pop-up window; from the little graph icons, select the small icon that represents “Add Fit Line at Total” (hover the mouse over each icon until you find the correct one) → Close the “properties” pop-up as well as the figure pop-up and now your output file should contain a figure with a best-fit line in it. Click on the graph to select it, then copy and paste it into a word document (no more than two graphs per page).*

| CpW | AFstCell | FFpM | TpY | ASOCcell |
|------------|-----------------|-------------|------------|-----------------|
| 3 | 9 | 7 | 10 | 12 |
| 0 | 14 | 15 | 2 | 14 |
| 15 | 13 | 15 | 75 | 13 |
| 3 | 10 | 8 | 10 | 13 |
| 2 | 14 | 4 | 12 | 12 |
| 2 | 9 | 5 | 40 | 12 |
| 0 | 14 | 30 | 15 | 10 |
| 3 | 14 | 35 | 8 | 10 |
| 5 | 12 | 9 | 0 | 13 |
| 0 | 8 | 5 | 5 | 12 |
| 4 | 15 | 10 | 90 | 16 |
| 0 | 14 | 12 | 35 | 14 |
| 0 | 13 | 3 | 200 | 13 |
| 3 | 10 | 10 | 47 | 13 |
| 5 | 11 | 2 | 15 | 10 |
| 14 | 16 | 2 | 5 | 75 |
| 4 | 11 | 22 | 20 | 13 |
| 0 | 10 | 4 | 12 | 12 |
| 5 | 10 | 7 | 15 | 12 |
| 2 | 10 | 10 | 30 | 12 |
| 3 | 11 | 6 | 300 | 16 |
| 15 | 12 | 5 | 15 | 13 |
| 5 | 10 | 5 | 40 | 12 |
| 0 | 10 | 16 | 30 | 13 |
| 4 | 13 | 16 | 300 | 15 |
| 6 | 12 | 7 | 10 | 11 |
| 2 | 13 | 10 | 12 | 13 |
| 3 | 13 | 8 | 25 | 14 |
| 11 | 13 | 3 | 24 | 13 |
| 0 | 13 | 5 | 10 | 15 |
| 7 | 8 | 15 | 500 | 12 |
| 5 | 8 | 7 | 45 | 10 |