PSYCHOLOGY 515 - EXPERIMENTAL DESIGN
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Assignment No. 1

Suppose a survey of cities of comparable size yields the following data for a given year:

City	*Number of police officers*	*Number of robberies*
1	64	625
2	53	750
3	67	560
4	52	690
5	82	515
6	59	680
7	67	630
8	90	510
9	50	800
10	77	550
11	88	550
12	71	525
13	58	625

1. Put the above data into JMP. (Don't put the 'City' column in.) Save the file with some appropriate name. Journal the worksheet (from the menu Edit|Journal), but don't save it yet or close it (you can, however, minimize it if you wish).

2. Name the 2 variables in an appropriate way, and use JMP's 'Distribution' analysis platform to describe (i.e., histogram, N, means, standard deviations, etc.) the 2 variables. While you are in this window, save (standardized) Z-scores for the 2 variables by clicking on the red triangle then Save|Standardized. Journal the distribution window, but don't save it yet or close it (you can, however, minimize it).

3. Use the 'Fit Y by X' analysis platform to make a scatterplot of the variables with number of robberies on the Y-axis and number of police officers on the horizontal axis. Do the same with the Z-scores, i.e., put the Z-scores for robberies on the Y-axis and Z-scores for officers on the X-axis. Actually, it easiest to do 4 plots at once by including both raw scores and Z-scores for officers as X-variables and both raw and Z-scores for robberies as Y-variables. Notice exactly what is the same and what is different about the plots.

4. Have JMP compute the regression equation for predicting no. of robberies from no. of police officers, by clicking on the red triangle on the appropriate plot and choosing 'Fit Line.' Journal the window (again, don't save or close yet).

5. Have JMP compute the correlations between all the variables in the data table by using the Multivariate analysis platform. Make sure you also look at the scatterplot matrix and the ‘Correlations-Pairwise’ output. If they don't automatically appear, bring them up by clicking on the red triangle and selecting the appropriate item. (By the way, notice that you don't have to click exactly on the red triangle. If you *right*-click any where on the bar that contains the red triangle, you’ll get the same drop-down menu. It's a very useful and informative exercise to right-click on various parts of the output. Try it; you’ll learn lots of stuff.) Notice which correlations are the same. Think about and make sure you understand why they are the same. Journal the window.

6. Go to your ‘Journal: Untitled’ window if you are not already there and save it, giving it an appropriate name. The window should have all the analyses you have done so far. Do not save it as a JRN file (which is the default). Save it as a ‘Microsoft Word’ (.DOC) file or a 'Rich Text Format’ (.RTF) file. To do that, you will have to select the appropriate File Type from the drop-down menu.

7. Exit from JMP and get into your favorite word processor. Open the file you have just created, and view it in your word processor. You may need to instruct your word processor to look in the correct subdirectory and to view ‘all files (*.*)’ in the file open dialog box in order for it to list the file. Once you have opened it, put your name at the top of the page, add any comments you wish throughout the output, save it in your word processor format and e-mail the file to me as an attachment. (Alternatively, you may print it to turn in.)