How to use the Standardization Spreadsheet

This Spreadsheet demonstrates the three-step process to convert any set of numbers into a set of Z-scores. This process is called "standardization" and the Z-Scores are the "standardized" version of the original numbers.

Step One: calculate the mean [Cell B15] and standard deviation [Cell B16] of a set of numbers (here, the set of numbers is in cells B5 to B13).

Step Two: subtract the mean of set [Cell B15] from each number. Results are in cells C5:C13. Note that the new mean of the modified numbers is 0 [Cell C15] The standard deviation remains unchanged [Cell C16].

Step Three: Divide each modified number by the original standard deviation. Results are in cells D5:D13. Note that the mean remains 0 [Cell D15] and the new standard deviation is now 1 [Cell D16].

You can copy the structure of the spreadsheet for sets of numbers (Columns) of any length

This spreadsheet also illustrates how the regression (best-fit) line for the original ordered pairs and the regression line for the pairs of z-scores differ and how they stay the same.

When ordered pairs are converted into Z-Scores:

-The correlation R [Cell F44] and Coefficient of Determination (R^2) [Cell F45] are unchanged.

-The new covariance [Cell F41] and the slope (beta) [Cell F42] both change to equal the correlation.

-The new Y-intercept (alpha) [Cell F44] always changes to 0.