

Directions for Bootstrapping

Type original data set into a column of an Excel Worksheet. Calculate Xbar and s. Then click

Data

Data Analysis

Sampling

Input Range = range of original data

Random – Number of Samples = number of data points in the original data set

Output Range = range you want the resample put in (or at least the top cell).

Repeat repeat repeat moving one column to the right each time until you have m resamples.

Calculate sample mean, sample standard deviation and t value for each resample

$$t_i = (\bar{X}_i - \bar{X}) / (s_i / \sqrt{n})$$

Transpose the row of t values to a column using Copy and then move the cursor to an empty cell and Paste Transpose.

Sort smallest to largest. There you have it, a simulated t distribution custom designed for your data set. You might want to do a histogram.

The confidence interval is equation 4.3 in Manly, page 110.

$$(\bar{X} - t_{\text{high}} * s / \sqrt{n}, \bar{X} - t_{\text{low}} * s / \sqrt{n})$$

Yes, I know it's tedious. Students have tried to develop clever ways around this which is great – you'll learn something about EXCEL. But, it will take you longer than doing it by hand. Tedious but not hard. Call your mom, listen to your IPOD, watch Survivor,... It won't take that long.

SAMPLING DIALOG BOX (FROM EXCEL HELP FUNCTION)

Input Range Enter the references for the range of data that contains the population of values that you want to sample. Microsoft Office Excel draws samples from the first column, then the second column, and so on.

Labels Select if the first row or column of your input range contains labels. Clear if your input range has no labels. Excel generates the appropriate data labels for the output table.

Sampling Method Click **Periodic** or **Random** to indicate the sampling interval that you want.

Period Enter the periodic interval at which you want the sampling to take place. The *period*-th value in the input range and every *period*-th value thereafter are copied to the output column. Sampling stops when the end of the input range is reached.

Number of Samples Enter the number of random values that you want in the output column. Each value is drawn from a random position in the input range, and any number can be selected more than once.

Output Range Enter the reference for the upper-left cell of the output table. Data is written in a single column below the cell. If you select **Periodic**, the number of values in the output table is equal to the number of values in the input range, divided by the sampling rate. If you select **Random**, the number of values in the output table is equal to the number of samples.

New Worksheet Ply Click to insert a new worksheet in the current workbook and paste the results starting at cell A1 of the new worksheet. To name the new worksheet, type a name in the box.

New Workbook Click to create a new workbook in which results are added to a new worksheet.