

**SPSS PC Version 10: Using SPSS to create confidence interval estimations<sup>1</sup>**

The following uses a set of variables from the “1995 National Survey of Family Growth” to demonstrate how to use some procedures available in SPSS PC Version 10.

- To create a confidence interval go to the *Analyze* menu in SPSS, choose *Compare Means*, and then *One Sample T Test...* This procedure allows you to build confidence intervals around the sample mean for any variable in the data set. This can be used to determine whether this sample mean is significantly different from some value that you choose. To create a confidence interval just choose the variables that you want to use in your estimation, put them in the box titled "Variable(s)" and hit "OK." For example, to use the NSFG sample to estimate the level of education of American women between the ages of 14 and 45 I would put the variable *educ* ("Education in years") in the "Variable(s)" list and get the following output:

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
EDUC Education in Years	10847	12.6809	2.7715	2.661E-02

**One-Sample Test**

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
EDUC Education in Years	476.530	10846	.000	12.6809	12.6288	12.7331

The syntax for this is:

```
T-TEST
  /TESTVAL=0
  /MISSING=ANALYSIS
  /VARIABLES=educ
  /CRITERIA=CIN (.95) .
```

- The first box of the output indicates that all 10,847 women in the sample have valid education data and the mean level of education is 12.68 years with a standard deviation of 2.77. Using this standard deviation, SPSS estimates the standard error (the standard deviation of the sampling distribution of means) as .02661. The lower and upper boundaries of the 95% confidence interval based on this information are presented in the last two columns of the second box. (the other 4 columns of the second table indicate whether the sample mean of 12.68 is statistically significantly different from 0 -- you can ignore this information). The results of our confidence interval indicate that we can be 95% confident that the level of education obtained by American women age 14-45 is somewhere between 12.63 and 12.73 years.
- By default, SPSS creates a 95% confidence interval. To create a confidence interval with a different confidence level click on the "Options..." button on the right side of the dialog box. In the new dialog box that pops up you can change the "Confidence Interval" number to whatever your little heart desires as long as it is a number between 1 (for a 1% confidence interval) and 99.9 (for a 99.9% confidence interval).

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