



# Psyc 381

## Repeated Measures $t$ test

### A brief how-to guide

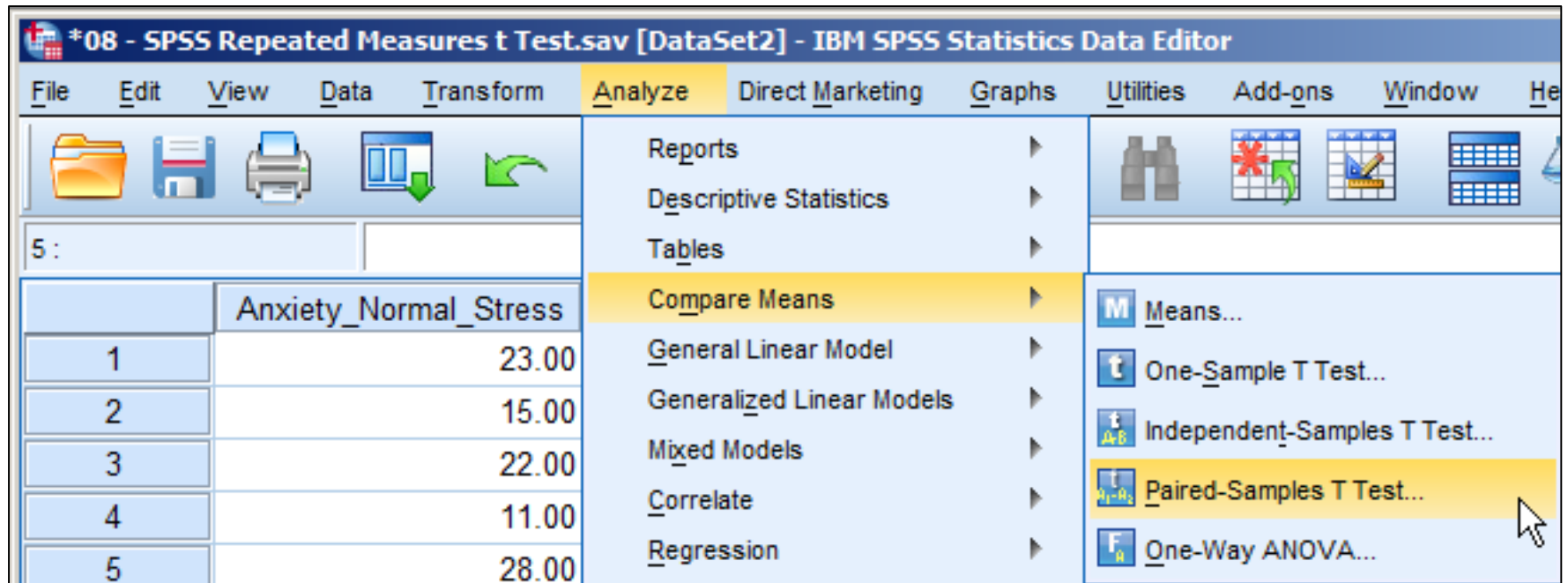
# Data Entry

- First recall that in SPSS each row of data typically represents data collected from the same source (or participant)
- A repeated measures  $t$  test compares two observations taken from the same individual (across an entire sample). To enter these data, two columns will be needed: one column for the first observation and another column for the second observation. This will be done with one row for every participant that provided data. Make sure to label your columns based on the context (or condition) under which the data collection occurred.

	Anxiety_Normal_Stress	Anxiety_High_Stress	var
1	23.00	38.00	
2	15.00	13.00	
3	22.00	24.00	
4	11.00	13.00	
5	28.00	32.00	
6	8.00	14.00	
7	13.00	9.00	
8	21.00	25.00	
9	10.00	13.00	
10	13.00	12.00	
11	7.00	13.00	
12	11.00	13.00	
13	10.00	17.00	
14	.	.	

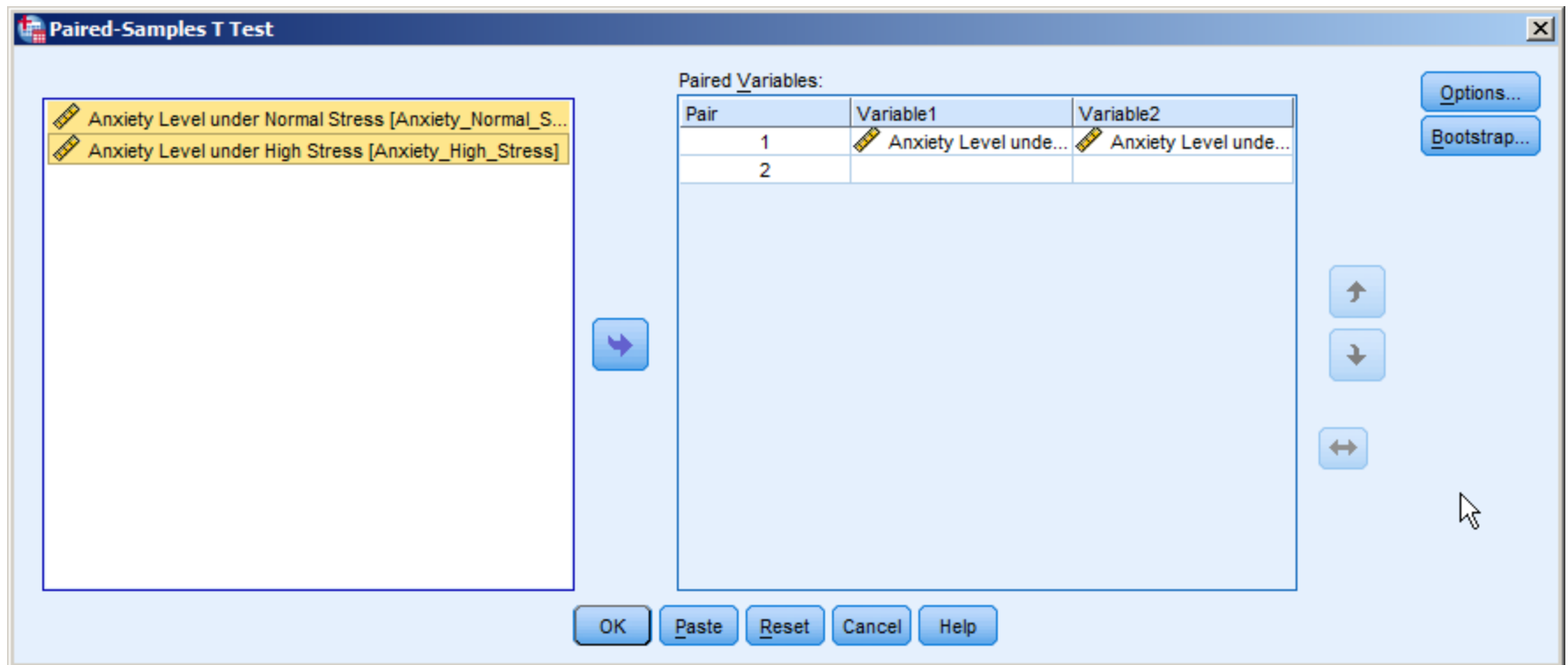
# Start the analysis

- To request a repeated measures  $t$  test in SPSS, navigate to the following menu option:



# Selecting the variables

- Once you have selected the correct analysis, you need to identify the pair(s) of observations you want to use in the analysis using the menu below.
  - To do so, select from the available variables in the left window and move the matched pairs to the right window so that they are in the same pair row under Variable 1 and Variable 2



# Reading the output

- You will be given three pieces of output in the separate output window.
  - The first piece contains a general set of descriptive statistics of the measured variable for each observation, which are typically reported when describing your results.
  - The second piece contains the correlation between the two observation occasions. This information can be informative in some instances but it is typically not reported as part of a results summary.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Anxiety Level under Normal Stress	14.7692	13	6.58475	1.82628
	Anxiety Level under High Stress	18.1538	13	8.84916	2.45432

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Anxiety Level under Normal Stress & Anxiety Level under High Stress	13	.850	.000

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# Reading the output

- You will be given three pieces of output in the separate output window.
  - The third piece contains the values used in the  $t$  test.
  - First, notice that SPSS will identify the pair of observations being compared – make sure this pair matches your intended analysis.
  - On the left side, the mean refers to the mean of the difference scores (D) and the standard deviation and standard error both refer to the set of difference scores.
  - On the right side is the observed  $t$  value, the degrees of freedom (df), and the observed  $p$ -value (non-directional).

**Paired Samples Test**

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Anxiety Level under Normal Stress - Anxiety Level under High Stress	-3.38462	4.75287	1.31821	-6.25674	-.51249	-2.568	12	.025