SPSS24 HELP SHEET: Wilcoxon signed-rank test (using legacy dialogs)

CONTENTS
1. How to enter data to do a Wilcoxon signed-rank test.
2. How to do a Wilcoxon signed-rank test.

1. How to enter data to do a Wilcoxon signed-rank test.
For general advice on data entry see the "**How to enter data into SPSS**" help sheet.

Wilcoxon signed-rank tests are used on related data: Data from one sample go in one column and for the other sample in another column: Related data points in the two samples must be in the same case (i.e., row). The samples/columns are identified by which category of the independent variable they are from. In this example, the dependent variable is *Time spent grazing* and the independent variable is *Reproductive status* of the ewe. *Time spent grazing* is given as a percentage and is a scale level of measurement. *Reproductive status* is measured at the nominal level: *percgr_wo* (variable label = Without lamb) or *percgr_w* (variable label = With lamb). ID indicates the identity of the ewe and is not involved directly in the analysis.

Variable View:
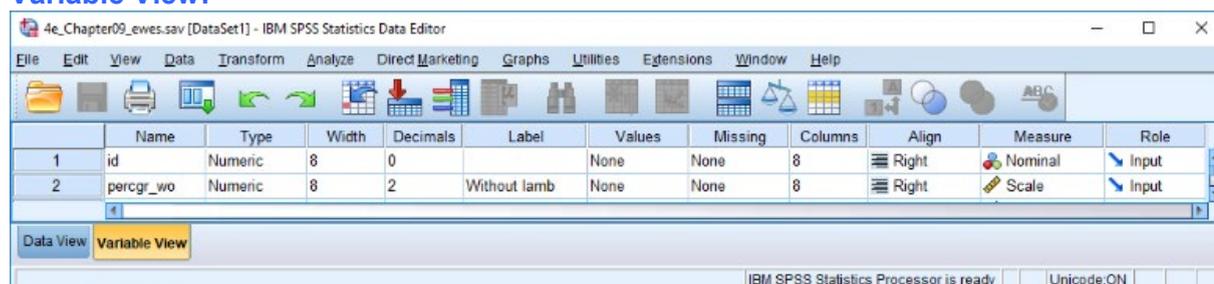
Data View   (Value Labels off or on)
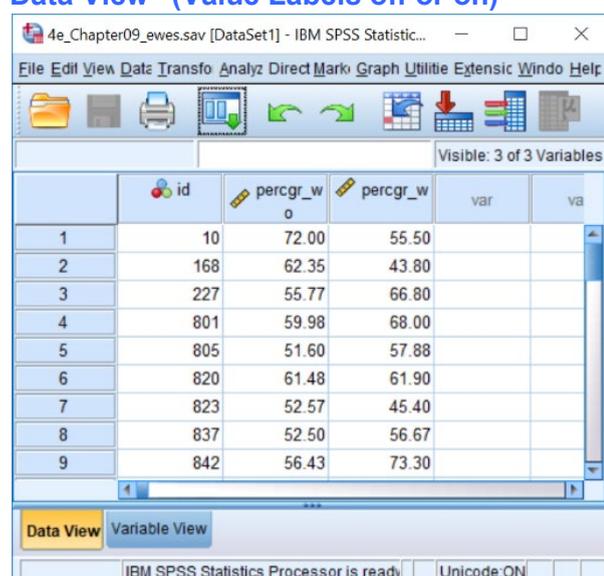
2 How to do a Wilcoxon signed-rank test

To get SPSS to conduct a Wilcoxon signed-rank test :
Open your data file.
Select: Analyze – Nonparametric Tests – Legacy Dialogs - 2 Related Samples...
This will bring up the Two-Independent-Samples Tests window.

Select the variables that you want to analyse, and send them to the **Test Pair(s) List** box
(in the example above this is *With Lamb* and *Without Lamb*). Click **OK**.
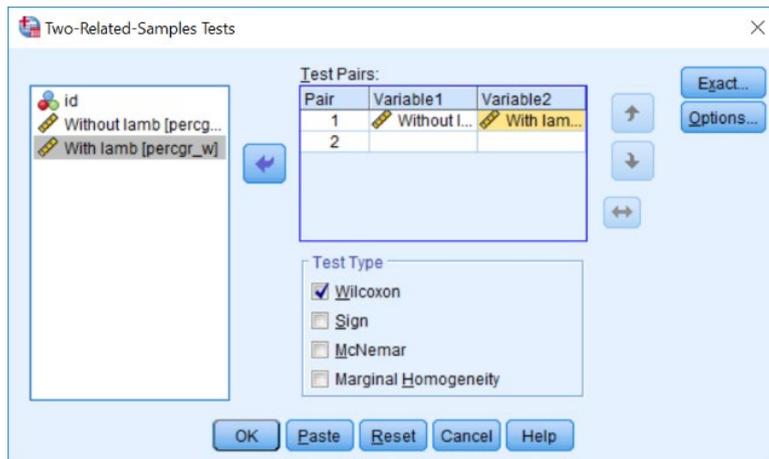
This will produce the following in the **Output** window.

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks	
With lamb - Without lamb	Negative Ranks	3ᵃ	9.67	29.00	← Statistic (T-)
	Positive Ranks	13ᵇ	8.23	107.00	← Statistic (T+)
	Ties	0ᶜ			← Number of pairs where the difference is zero (N=n minus this number)
	Total	16			← Total number of pairs (n)

a. With lamb < Without lamb
b. With lamb > Without lamb
c. With lamb = Without lamb

Test Statisticsᵃ

	With lamb - Without lamb	
Z	-2.017ᵇ	← Statistic (z)
Asymp. Sig. (2-tailed)	.044	← *P*

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

NB: Using this route, SPSS reports both the sum of ranks for the positive and for the negative differences. This is based on the sample 2 minus sample 1 so it depends on the order as to which is which. You only need to report one of them.

In summary the key information is:
T = 107, n = 16, N = 16, P = 0.044