NuMBerS numerical methods for biosciences students

SPSS 13.0 HELP SHEET: Kruskal-Wallis test

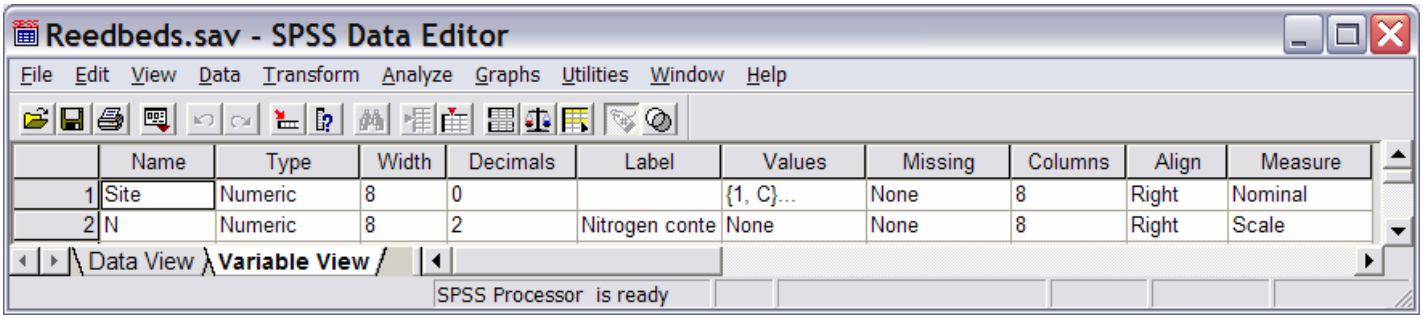
CONTENTS

1. How to enter data to do a Kruskal-Wallis test.

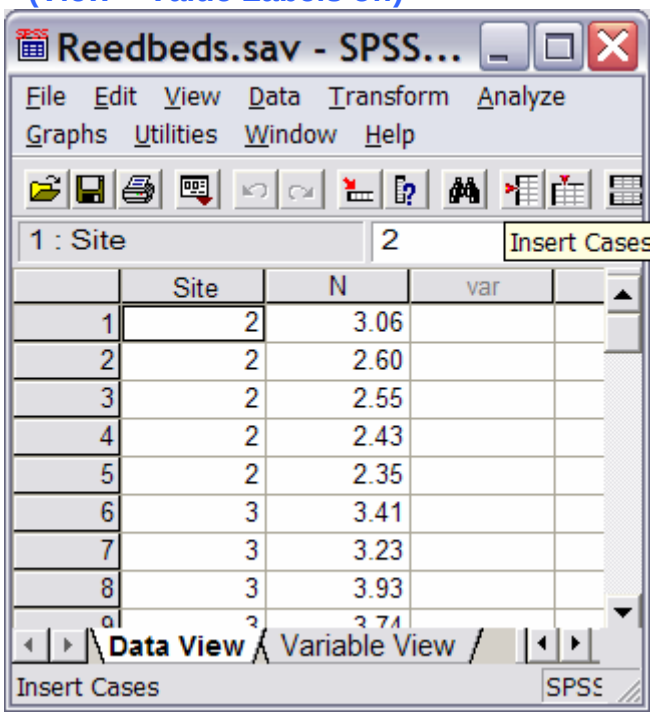
For general advice on data entry see the "**How to enter data into SPSS"** help sheet.

Kruskal-Wallis tests are used on unrelated: Data for the dependent variable goes in one column and data for the independent variable goes in another. In this example, the dependent variable is *N* and the independent variable is *Site*. *N* is the nitrogen content of reeds measured as % of dry weight which is a scale level of measurement. *Site* refers to the area within the reed bed that the samples of reeds were taken from measured at the nominal level: either 1 (value label = C), 2 (value label = D) or 3 (value label = E).

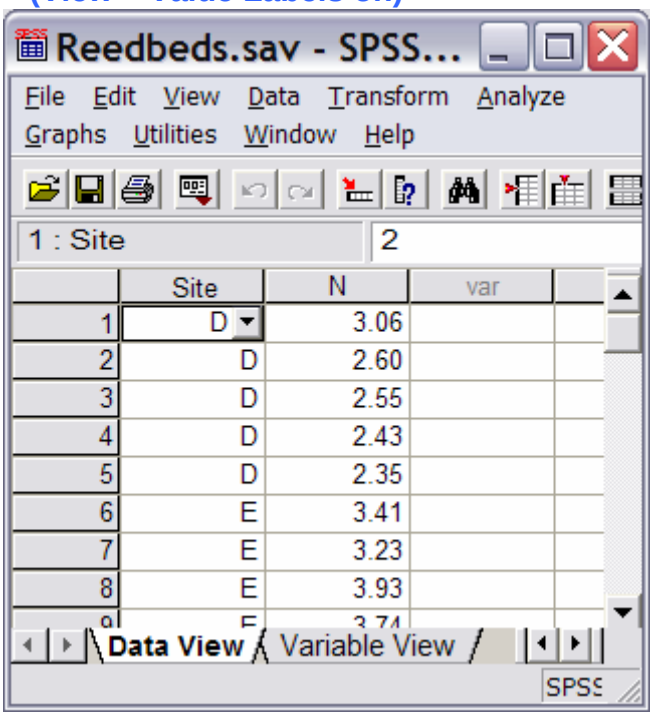
Variable View:



Data View (View – Value Labels off)



Data View (View – Value Labels on)



Dawn Hawkins: Anglia Ruskin University, February 2007

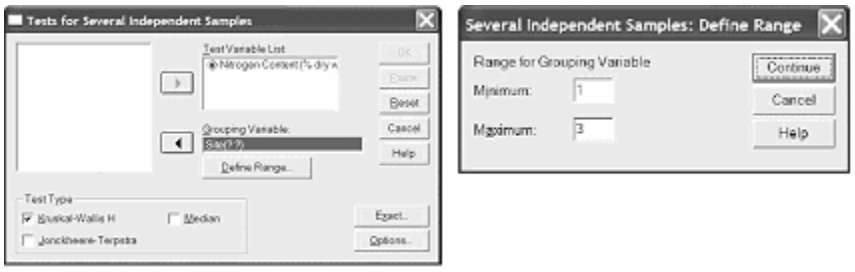
2. How to do a Kruskal-Wallis test.

To get SPSS to conduct a one-way Anova :

Open your data file.

Select: Analyze – Nonparametric Tests – K Independent Samples…

This will bring up the Tests for Several Independent Samples window (below, left):



Select the dependent variable and send it to the **Test Variable List** box (in the example above this is *Nitrogen Content*). Select the independent variable, and send it to the **Grouping Variable** box (in the example above this is *Site*).

Press the **Define Range** button to bring up the Define Range window (above right). Under **Minimum** type the lowest number code used for a sample (in the example above this is *1*). Under **Maximum** type the highest number code used for a sample (in the example above this is *3*). Click Continue and then OK.

The key elements of the output are:

Ranks

	Site	N	Mean Rank
Nitrogen content (% dry weight)	C	5	8.20
	D	5	3.60
	E	5	12.20
	Total	15	

Test Statistics[a,b]

	Nitrogen content (% dry weight)	
Chi-Square	9.260	← ***STATISTIC***
df	2	← ***DEGREES OF FREEDOM***
Asymp. Sig.	.010	← ***P***

a. Kruskal Wallis Test

b. Grouping Variable: Site

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