

SPSS24 HELP SHEET: Kruskal-Wallis test (using legacy dialogs)

CONTENTS

1. How to enter data to do a Kruskal-Wallis test.
2. How to do a Kruskal-Wallis test using legacy dialogs.

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: Data for the dependent variable go in one column and data for the independent variable goes in another. In this example, the dependent variable is *Nitrogen* and the independent variable is *Site*. *Nitrogen* is measured as % nitrogen of dry weight and is 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 = Site 1), 2 (value label = Site 2) or 3 (value label = Site 3).

Variable View

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	Site	Numeric	8	0		{1, Site 1}...	None	8	Right	Nominal	Input
2	Nitrogen	Numeric	8	2	Nitrogen Conte...	None	None	8	Right	Scale	Target

Data View (View – Value Labels off)

	Site	Nitrogen	var	var	var
1	1	2.92			
2	1	2.88			
3	1	3.25			
4	1	2.64			
5	1	3.28			
6	2	3.06			
7	2	2.60			
8	2	2.55			
9	2	2.42			
10	2	2.35			

Data View (View – Value Labels on)

	Site	Nitrogen	var	var	var
1	Site 1	2.92			
2	Site 1	2.88			
3	Site 1	3.25			
4	Site 1	2.64			
5	Site 1	3.28			
6	Site 2	3.06			
7	Site 2	2.60			
8	Site 2	2.55			
9	Site 2	2.42			
10	Site 2	2.35			

2. How to do a Kruskal-Wallis test using legacy dialogs.

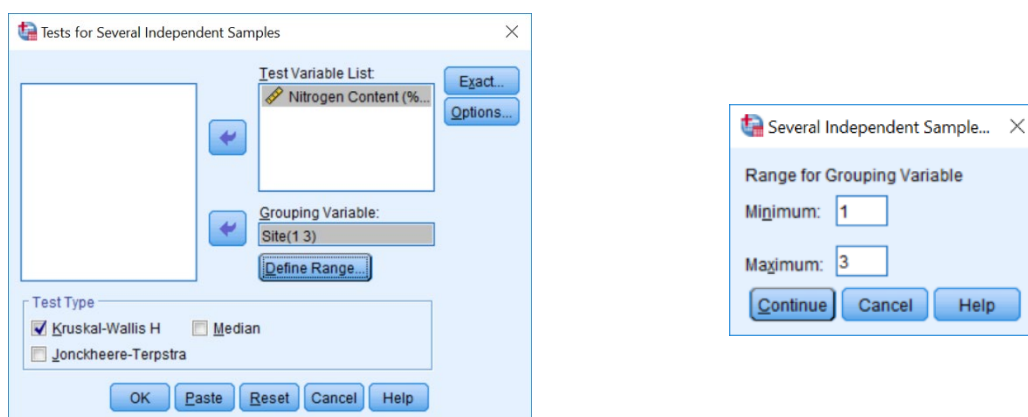
To get SPSS to conduct a Kruskal-Wallis test :

Open your data file.

Select: Analyze – Nonparametric Tests – Legacy Dialogs - K Independent Samples...

This will bring up the **Tests for Several Independent Samples** window.

Select the dependent variable and send it to the **Test Variable List** box (in this example *Nitrogen*). Select the independent variable, and send it to the **Grouping Variable** box (in the example *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 this example 1). Under **Maximum** type the highest number code used for a sample (in this example 3). Click **Continue** and then **OK**.



The key elements of the output are:

Ranks			
	Site	N	Mean Rank
Nitrogen Content (% dry weight)	Site 1	5	8.20
	Site 2	5	3.60
	Site 3	5	12.20
	Total	15	

Sample sizes (n_1, n_2, n_3)

Test Statistics ^{a,b}	
	Nitrogen Content (% dry weight)
Chi-Square	9.260
df	2
Asymp. Sig.	.010

a. Kruskal Wallis Test
b. Grouping Variable: Site

Statistic (χ^2)
Degrees of Freedom
 P

In summary the key information from the test is

$$\chi^2_2=9.26, n_1=20, n_2=20, n_3=20, P=0.010$$