

SPSS24 HELP SHEET: Anova

CONTENTS

1. How to enter data to do a Anova.
2. How to do a Anova.

1. How to enter data to do a Anova.

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

One-way Anova’s 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 an Anova

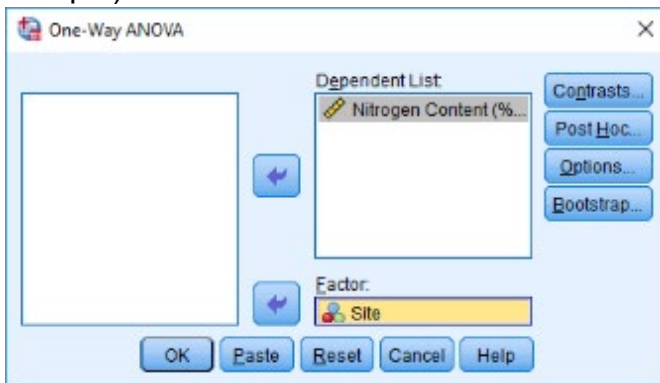
To get SPSS to conduct a One-way Anova:

Open your data file.

Select: Analyze – Compare Means – One-Way Anova...

This will bring up the **One-Way ANOVA** window:

Select the dependent variable and send it to the **Dependent List** box (*Nitrogen* in this example). Select the independent variable, and send it to the **Factor** box (*Site* in this example). Click **OK**.



The key elements of the output are:

ANOVA

Nitrogen Content (% dry weight)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.043	2	1.022	11.950	.001
Within Groups	1.026	12	.085		
Total	3.069	14			

Annotations: An arrow labeled 'Statistic (F)' points to the value 11.950 in the F column. An arrow labeled 'P' points to the value .001 in the Sig. column. A dashed orange box highlights the values 2 and 12 in the df column, with an arrow labeled 'Degrees of Freedom' pointing to the 12.

In summary the key information from the test is:

$F_{2,12}=11.95$, $P=0.001$