

How to interpret an ANOVA table?

ANOVA

ANOVA involves the calculation and interpretation of a number of parameters which are all summarized in a table. In practice, the calculations are best carried out using statistical software or a MS Excel® spreadsheet. Before going into details of calculations from the first principle, let's take a look at a typical output from a one-way ANOVA in a results table form, whether manual or using software. We will also see how the results are interpreted.

The general form of a results table from a one-way ANOVA, for a total of N observations in k groups is shown in Table 1 below.

Table 1: Results table from *one-way* analysis of variance

<i>Source of variation</i>	<i>Sum of squares SS</i>	<i>Degrees of freedom, ν</i>	<i>Mean square MS</i>	<i>F</i>
Between-group	SS_b	$k - 1$	$MS_b = SS_b / (k - 1)$	MS_b / MS_w
Within-group	SS_w	$N - k$	$MS_w = SS_w / (N - k)$	
Total	$SS_T = SS_b + SS_w$	$N - 1$		

The above table shows 3 rows relating to different sources of variation and a number of columns containing calculated values related to each source of variance.