

The A by S Analysis of Variance

One can apply repeated measures to subjects in two or more separate groups. For example, we may be interested in the differences between males and females sampled from a school that have been administered a standardized achievement test. We will use the ABRDATA.LAZ file to demonstrate this analysis. Notice the variables we have selected and the options chosen:

Directions: It is assumed you have one grid column variable representing the group codes for the (A) between treatment groups effect and 2 to k column variables representing the repeated measures. Group codes should be sequential values of 1, 2, etc. You may elect to plot the means.

Available Variables:

Row
Col

Group Variable
Row

Option
☒ Plot Cell Means

Repeated Measures
C1
C2
C3
C4

Reset
Cancel
Compute
Return

When we click the Compute button, the following results are observed:

ANOVA With One Between Subjects and One Within Subjects Treatments

Source	df	SS	MS	F	Prob.
Between	11	181.000			
Groups (A)	1	10.083	10.083	0.590	0.4602
Subjects w.g.	10	170.917	17.092		
Within Subjects	36	1077.000			
B Treatments	3	991.500	330.500	128.627	0.0000
A X B inter.	3	8.417	2.806	1.092	0.3677
B X S w.g.	30	77.083	2.569		
TOTAL	47	1258.000			

Means

TRT.	B 1	B 2	B 3	B 4	TOTAL
A					
1	16.167	11.000	7.833	3.167	9.542
2	16.833	12.000	7.667	5.333	10.458
TOTAL	16.500	11.500	7.750	4.250	10.000

Standard Deviations

TRT.	B 1	B 2	B 3	B 4	TOTAL
A					
1	2.714	2.098	2.714	1.835	5.316
2	1.329	2.828	2.338	3.445	5.099
TOTAL	2.067	2.431	2.417	2.864	5.174

