



Intro to Stats

Factorial ANOVAs

Factorial ANOVA

- ▶ Factorial Analysis of Variance (ANOVA)
- ▶ Allows you to enter multiple predictors and parcel out the variance in the outcome due to each predictor and the combination of the predictors
- ▶ Main effect for each predictor + interactions among the predictors

When to use it

- ▶ Use it when:
 - ▶ You are examining differences between groups
 - ▶ The participants in the study were only tested once
 - ▶ You are comparing more than two groups
 - ▶ You are dealing with more than one factor

What it will give you

- ▶ Main Effect of Each Predictor Variable
 - Is there a mean difference among the levels of Variable A?
 - Is there a mean difference among the levels of Variable B?
 - And so on...
- ▶ Interaction Effect of Predictor Variables
 - Is the effect of Variable B different for the groups of Variable A?
 - And so on...
 - (can have 3, 4, 5-way interactions)

Example 1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	323.800(a)	5	64.760	236.286	.000
Intercept	1109.400	1	1109.400	4047.811	.000
gender	201.667	1	201.667	735.811	.000
video	58.800	2	29.400	107.270	.000
gender * video	63.333	2	31.667	115.541	.000
Error	14.800	54	.274		
Total	1448.000	60			
Corrected Total	338.600	59			

Example 1

gender	videogame violence	Mean	Std. Deviation	N
female	very violent	2.4000	.51640	10
	moderately violent	2.5000	.52705	10
	non violent	2.5000	.52705	10
	Total	2.4667	.50742	30
male	very violent	8.4000	.51640	10
	moderately violent	6.5000	.52705	10
	non violent	3.5000	.52705	10
	Total	6.1333	2.11291	30
Total	very violent	5.4000	3.11870	20
	moderately violent	4.5000	2.11511	20
	non violent	3.0000	.72548	20
	Total	4.3000	2.39562	60

Example 1



Example 2

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	323.800(a)	5	64.760	236.286	.050
Intercept	1109.400	1	1109.400	4047.811	.000
gender	201.667	1	201.667	735.811	.453
video	58.800	2	29.400	107.270	.346
gender * video	63.333	2	31.667	115.541	.000
Error	14.800	54	.274		
Total	1448.000	60			
Corrected Total	338.600	59			

Example 3

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	323.800(a)	5	64.760	236.286	.050
Intercept	1109.400	1	1109.400	4047.811	.000
gender	201.667	1	201.667	735.811	.000
video	58.800	2	29.400	107.270	.346
gender * video	63.333	2	31.667	115.541	.215
Error	14.800	54	.274		
Total	1448.000	60			
Corrected Total	338.600	59			