

Lab 5 – Factorial ANOVA

In a study of mother-infant interaction, mothers are rated on the quality of the interactions with their infants (scale from 1-12 with higher scores representing more positive interaction). Mothers were classified on the basis of whether this was their first child, second child, or third child and whether the infant was female or male. The data are below.

Gender	Order of Birth			Mean
	First	Second	Third	
Female	7	10	10	
	8	8	8	
	8	9	7	
	9	4	9	
	8	9	9	
	2	6	11	
	1	7	10	
	9	8	6	
	9	5	8	
	8	11	5	
Mean	6.90	7.70	8.30	7.63
Male	9	4	4	
	8	7	5	
	9	5	11	
	9	6	7	
	3	7	8	
	10	2	5	
	9	5	9	
	8	3	9	
	7	5	11	
	10	7	6	
Mean	8.20	5.10	6.93	6.93
Group Means	7.55	6.40	7.90	7.28

$$\Sigma X = 437, \Sigma X^2 = 3527$$

1. Indicate the design of this study using factorial notation (e.g., 2 X 3 X 3 within-subjects design).

2. Complete the Summary Table.

Source	SS	df	MS	F
O (Order)				
G (Gender)				
OG				
Error				
Total				

3. What are your conclusions? Be specific (i.e., if there are significant differences, specify the direction).
if there is main Effect of Order, Gender.
if there is interaction

4. Calculate the simple effects for Order of Birth at each level of Gender.

Source	SS	df	MS	F
O at female				
O at male				
Error				

5. Conduct follow up comparisons using Tukey if necessary.

6. Based on all of the analyses you conducted, what would you conclude about how order of birth and gender influence the interactions between mother and child?