

Adaptation Analysis: Nelson, Meyvis, Galak (2009) "Enhancing the Television Viewing Experience Through Commercial Interruptions," *Journal of Consumer Research*, Vol. 36, pp. 160-172

Given: $C_1 = \mu_{11} - \mu_{12}$ $\hat{C}_1 = 5.35 - 3.41 = 1.94$ $F_{C_1} = 7.99$ $C_2 = \mu_{21} - \mu_{22}$ $\hat{C}_2 = 5.15 - 5.38 = -0.23$ $F_{C_2} < 1$

$C_3 = (\mu_{11} - \mu_{12}) - (\mu_{21} - \mu_{22})$ $\hat{C}_3 = 1.94 - (-0.23) = 2.17$ $F_{C_3} = 5.07$ $\hat{C} = \sum_i \sum_j c_{ij} \bar{y}_{ij}$ $SSC = \frac{(\hat{C})^2}{\sum_i \sum_j \frac{c_{ij}^2}{n_{ij}}}$ $F_C = \frac{SSC}{MS_{ERR}}$

i	j	ybar_ij	n_ij	Yij.	SSTrts
1	1	5.35	25	133.75	6.042567
1	2	3.41	23	78.43	48.24866
2	1	5.15	22	113.3	1.871091
2	2	5.38	28	150.64	7.618817
			98	476.12	63.78114
		Mean		4.858367	
A,B,AB					
X'X					
	98	-2	-4	8	
	-2	98	8	-4	
	-4	8	98	-2	
	8	-4	-2	98	
X'Y	Beta-hat	Y'PY			
	476.12	4.8225	2376.947		
	-51.76	-0.4425			
	17.98	0.4275			
	92.66	0.5425			

D1	D2	D1/D2	D1+D2	Target D1/D2
0.0835	0.0812	1.0285	0.1646	1.0291
(1/n11)+	(1/n21)+			
(1/n12)	(1/n22)			

X	mu	alpha1	beta1	(ab)11
i=1, j=1	+1_25	+1_25	+1_25	+1_25
i=1, j=2	+1_23	+1_23	-1_23	-1_23
i=2, j=1	+1_22	-1_22	+1_22	-1_22
i=2, j=2	+1_28	-1_28	-1_28	+1_28

A,B	X'X	X'Y	Beta-hat	Y'PY
	98	-2	-4	8
	-2	98	8	-4
	-4	8	98	-2
	8	-4	-2	98
X'Y	Beta-hat	Y'PY		
	476.12	4.8661	2348.347	
	-51.76	-0.4631		
	17.98	0.4199		

A,AB	X'X	X'Y	Beta-hat	Y'PY
	98	-2	-4	8
	-2	98	8	-4
	8	-4	98	
X'Y	Beta-hat	Y'PY		
	476.12	4.8062	2359.187	
	-51.76	-0.4082		
	92.66	0.5365		

B,AB	X'X	X'Y	Beta-hat	Y'PY
	98	-4	8	
	-4	98	-2	
	8	-2	98	
X'Y	Beta-hat	Y'PY		
	476.12	4.8287	2357.919	
	17.98	0.3920		
	92.66	0.5593		

ANOVA	df	Type3 SS	MS	F	F(.95)	P-value
Trts	3	63.78	21.26	3.77	2.701	0.0133
A						
B						
AB						
Error	94	530.16	5.64			
Total	97					