

The ANOVA Table

Analysis of Variance Table					
Source	df	SS	MS	<i>F</i>	Pr(> <i>F</i>)
distance (trt)	3	34.95	11.65	7.061	0.005447
subj (block)	4	36.20	9.05	5.485	0.009531
error	12	19.80	1.65		
total	19	90.95			

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Complete Randomized Block Design (CRBD)

An industrial engineer is conducting an experiment on eye focus time. He is interested in the effect of the distance of the object from the eye on the focus time. Four different distances are of interest. He has five subjects available for the experiment. Because there are considerable differences among individuals, a randomized block design is used. The resulting data are given below.

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Questions

- 1, How was SSTo, SSTr, SSB, and SSE computed?
- 2, Does the eye focus time vary significantly with distance?
- 3, As a justification of the CRBD, do the data provide evidence to support that the eye focus time vary dramatically from person to person?

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The Data

distance	subject					treatment
	1	2	3	4	5	means
4	10	6	6	6	6	6.8
6	7	6	6	1	6	5.6
8	5	3	3	2	5	3.6
10	6	4	4	2	3	3.8
block means	7	5	5	2.75	5	4.95

Note: the sample variance is $s_y^2 = 4.787$.

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