

Two Factor Full Factorial Design with Replications

Raj Jain

Washington University in Saint Louis

Saint Louis, MO 63130

Jain@cse.wustl.edu

These slides are available on-line at:

<http://www.cse.wustl.edu/~jain/cse567-11/>



- ❑ Model
- ❑ Computation of Effects
- ❑ Estimating Experimental Errors
- ❑ Allocation of Variation
- ❑ ANOVA Table and F-Test
- ❑ Confidence Intervals For Effects

Model

- Replications allow separating out the interactions from experimental errors.
- Model: With r replications

$$y_{ijk} = \mu + \alpha_j + \beta_i + \gamma_{ij} + e_{ijk}$$

- y_{ijk} = Response in the k th replication with factor A at level j and factor B at level i
- μ = mean response
- α_j = Effect of factor A at level j
- β_i = Effect of Factor B at level i
- γ_{ij} = Effect of interaction between factors A and B
- e_{ijk} = Experimental error