

Analysis of variance (ANOVA)

The analysis of variance (ANOVA) is a method invented by the eugenicist R. A. Fisher as a short-hand to linear regression. Because regression is arduous to calculate by hand, ANOVA became a favorite short cut to determine answers. There is really no longer any reason to use it now that we have computers that can easily do the calculating of regression. However, people have gotten used to looking at ANOVA tables, so we're stuck with learning this. For the most part, I want this to be another way for you to get insight into how a regression equation might be interpreted.

- Ways to conceptualize ANOVA
 - ANOVA as a t test with more than two groups of comparison
 - ANOVA as a shorthand method of regression
- Disaggregating variance
 - Sum of squares total (SST)
 - Sum of squares between groups (SSB)
 - Sum of squares within groups (SSW)
- Calculating F
 - Ratio of mean variance explained
 - SSB = variation explained
 - SSW = variation left unexplained
 - $F = t$