

Statistical Techniques I

EXST7005

Conceptual Intro to ANOVA



Analysis of Variance (ANOVA)

- R. A. Fisher - resolved a problem that had existed for some time.
- $H_0: \mu_1 = \mu_2 = \mu_3 = \dots = \mu_k$
- H_1 : some μ_i is different
- Conceptually, we have separate (and independent) samples, each giving a mean, and we want to know if they could have come from the same population or if it is more likely they come from different populations.

The Problem (*continued*)

- One way to do this is a series of t-tests.
 - ➔ If we want to test among 3 means we do 3 tests: 1 versus 2, 1 versus 3, 2 versus 3
 - For 4 means there are 6 tests. 1-2, 1-3, 1-4, 2-3, 2-4, and 3-4
 - For 5 means, 10 tests, etc.