

F - TEST

VARIANCE RATIO TEST

F-Test Variance Ratio Test

- The Test based on test statistic which follows F-distribution is called F-test.
- When there is significant difference between variances of two population based on small samples drawn from those populations:-

- $$F = \frac{S_1^2 n_1 / (n_1 - 1)}{S_2^2 n_2 / (n_2 - 1)}$$

- In the F-ratio we always take the larger of the two estimates in the numerator and smaller in the denominator.
- The degree of freedom is $(n-1)$ and (n_2-1) .

Assumptions:-

- Samples are drawn at random.
- Samples are drawn from normal populations.
- Population standard deviations are treated as equal but unknown.

Uses

- Test equality of variances of two populations.
- To test equality of means of three or more populations (known as analysis of variance)

Question on F-test

- The Standard deviation of two samples of sizes 10 and 14 from two normal populations are 3.5 and 3.0 respectively. Examine whether the standard deviations of the populations .

THANK YOU!