

83. Tables for comparing standard deviations of small samples.

P. C. MAHALANOBIS, Calcutta.

The classical theory of errors is strictly applicable only to large samples. To test the significance of differences in mean values or variances based on small sample, it is necessary to use the theory developed in recent times by 'Student', R. A. Fisher and others. Fisher has given two tables for the 5% and 1% values of a certain statistic Z given by

$$Z = \frac{1}{2} \log_e \left(\frac{s_1^2}{s_2^2} \right)$$

where s_1 and s_2 are the two variances (based on two samples of size n_1 and n_2 respectively) to be compared. In order to apply Fisher's z-tables it is necessary to use natural logarithms.

In this paper new tables have been given with the help of which it will be possible to test the significance of differences of variances or standard deviations directly from the ratio of the observed variances or the ratio of observed standard deviations.