

Uji komparatif terhadap dua statistic uji type Kolmogorov Smirnov

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Abstraks

In several statistics handbooks of statistics gave the following formula for the computation of the Kolmogorov goodness of fit statistic is:

$$D = \max_{1 \leq i \leq n} \left(F(X_i) - \frac{i}{N} \right) = \max_{1 \leq i \leq n} \left(F(X_i) - \frac{i}{N}, \frac{i}{N} - F(X_i) \right)$$

And the alternative formula test statistic to measure distance for two distribution functions is used

$$T = \sup_x |F(x) - S(x)| = \max_{1 \leq i \leq n} \left(F(X_i) - \frac{i-1}{N}, \frac{i}{N} - F(X_i) \right)$$

For actual data, the difference is likely to be less than the upper bound.

This form makes it clear that an upper bound on the difference between these two formulas is $\frac{1}{N}$

For example, for $N = 20$, the upper bound on the difference between these two formulas is 0.05 For $N = 100$, the upper bound is 0.01. In practice, to large sample sizes (say $N \geq 50$), these formulas are essentially equivalent.

Keyword : test statistic, supremum, upper bound