Normality Test

Norma 1.2

Statistical analysis

Instructions for Use

Among various tests of hypothesis, parametric tests are the most often used. But they are suitable only for normally distributed samples, i.e. data which could be taken out of a normal distribution. That's why the statistician has to check, prior to any parametric test, that the sample is normally distributed.

The best known method consists in dividing the sample into classes of equal width, then calculating every theoretical class size in the case of a normal distribution. Given f an experimental size and F the corresponding theoretical size, we calculate the ratio :

$$\Sigma(f - F)^2 / F$$

In order to check that the sample is normally distributed, this number is compared with the χ^2 (chi-two) variable, which the statistician finds in a special table according to the sample size and the risk of error. The χ^2 distribution was tabulated for the first time in 1900 by Karl Pearson.

The Kolmogorov-Smirnov test is an alternative method which suits very well computer programming because it doesn't require any table. This test has been used here. After dividing the sample into classes of equal width, given *n* the sample size, we calculate for every class the number :

$$d = |f - F| \sqrt{n}$$

The hypothesis of a normally distributed sample is accepted if all the d values are lower than C = 1,36 (for a risk of error at 5%). Else it's rejected.

After making the window clear, you have to write data, using a carriage return after each entry, including the last one. Then click *Go.* If the sample size is contained between 25 and 200, the result will immediately appear. You may also input the data by writing them in a text editor, then copy and paste.

If the sample size is lower than 25 we recommand you to make the test with a normal probability paper.

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Source : http://www.fr-deming.org/software.html