Crystal Ball Software and Risk Analysis Tips

(#47) What are the differences amongst the ranking methods for the distribution fitting?

In distribution fitting, Crystal Ball automatically matches your raw data against each continuous probability distribution. Crystal Ball performs a mathematical fit to determine the set of parameters for each distribution that best describes the characteristics of your data.

Crystal Ball judges the quality, or goodness, of each fit using one of several standard goodness-of-fit tests: the Chi-Square test, the Kolmogorov-Smirnov test, and Anderson-Darling test. Crystal Ball then chooses the distribution with the highest-ranking fit to represent your data.

The **Chi-Square test** is the oldest of the goodness-of-fit tests. This test breaks down the distribution into areas of equal probability and compares the data points in each area to the number of expected data points. The criterion for this test is the p-value, for which higher values indicate a better fit.

The **Kolmogorov-Smirnov test** measures the largest vertical distance between the cumulative relative frequency plot of the data and the cumulative distribution function of the distribution under consideration. Lower values of this criterion indicate a better fit.

The **Anderson-Darling test** is similar to the Kolmogorov-Smirnov test but assigns greater weight to the fit at the tails of the distribution than at its mid-range. Lower values of this criterion indicate a better fit.

NOTE: This tip is one of many published in our new training CD, *Risk Analysis Using Crystal Ball*.

For more information or to contact us, browse to http://helpdesk.crystalball.com

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