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Demo: Checking for Normality

In this video, we show how to check for normality using the Distribution platform and the file Four Distributions. You learn how to create and interpret a normal quantile plot, and how to fit a normal distribution to your data.

To start, we select Distribution from the Analyze menu.

We drag Variable 1 and Variable 2 to Y, Columns, and click OK. Then we select Stack from the top red triangle to change the results from a vertical to a horizontal layout.

Let's look at the histogram and the box plot for Variable 1. The distribution appears to be approximately normal. The histogram is mounded in shape, and the tails are symmetric.

In the box plot, the mean and the median are close to one another, the median is close to the center of the box, and the whiskers are about the same length.

To create a normal quantile plot for Variable 1, we select the option from the red triangle next to Variable 1.

The points fall more or less on a diagonal line, with no unusual patterns. The distribution is approximately normal.

Let's fit a normal curve to the data.

To do this, from the red triangle for Variable 1, we select Continuous Fit and then Normal.

The normal curve seems to fit the data well.

For comparison, we'll repeat these steps for Variable 2.

From the histogram and box plot, you can see that the data are right-skewed.

The curvature in the normal quantile plot reflects this, and you can see that the normal curve doesn't fit the data very well. A skewed distribution, like the lognormal, seems to fit the data better.

You learn how to fit and compare different distributions in a future video.

Close