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Demo: Calculating Confidence Intervals

In this video, you learn how to construct a 90% confidence interval for the mean using the Impurity data.

To do this, we use the Distribution platform from the Analyze menu. We select Impurity as the Y, Column and click OK. A 95% confidence interval is provided, by default, in the Summary Statistics table. This is reported as Upper 95% Mean and Lower 95% Mean.

How do you interpret this confidence interval? Based on this sample of 100 observations, you are 95% confident that the true population mean of Impurity is between 5.82 and 6.42. You might want to compute a confidence interval using a different confidence level.

If you are willing to accept more risk that your confidence interval will not capture the true mean, you can use a 90% confidence level. If you are willing to accept less risk that your confidence interval will miss the true mean, you might use a 99% confidence level.

You can select different confidence levels from the red triangle for the variable, under Confidence Interval.

For Illustration, we compute both a 90% confidence interval and a 99% confidence interval.

This produces confidence intervals, at the specified confidence level, for both the mean and the standard deviation.

As you can see, the 90% interval for the mean is narrower than the 99% interval. However, this narrower interval comes with greater risk of not capturing the true mean.

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