Print

Comparing Interval Estimates

In this lesson, we introduced a fundamental idea in statistical inference: because sample data are never "the whole story," we acknowledge our uncertainty about sample-based estimates by using carefully constructed interval estimates.

You learned about three types of interval estimates for continuous data.

A confidence interval is used to estimate the range of values for a process parameter, like the mean.

A prediction interval is used to estimate the range of values for the next observation, or the next set of n observations.

A tolerance interval is used to estimate the range of values for a specified proportion of future population values.

Suppose that you are studying a continuous characteristic, like velocity. How do you know which type of interval you should use? This depends on your question.

If your question is about the average velocity, you should use a confidence interval.

If your question is about the next velocity measurement, or set of measurements, you should use a prediction interval.

And, if your question is about the population, in this case all of the potential velocity measurements, you should use a tolerance interval.

As with any analysis, the methods you use depend on the question you are asking, your data, and the problem you are trying to solve.

As a reminder, to learn more about the broad topic of interval estimation, including methods not covered in this lesson, see the Read About It for this module.

Close