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Introduction to Descriptive Statistics

Statistics can be defined as the collection, analysis, presentation, and interpretation of data to make decisions and solve problems.

Statistics gives us a framework for describing variability in a process or system, and for learning about potential sources of variability.

There is some amount of variation in everything we do, and in everything we produce.

Statistical methods enable us to make decisions from data we collect, in light of variation.

Throughout this course, you learn a variety of statistical tools for making decisions from data.

In this module, you learn about descriptive statistical methods. These methods are used to describe and summarize process characteristics using numerical summaries and graphical displays.

You can use descriptive methods to understand the spread and shape of your data, characterize any central tendency of your data, and see unusual data values or patterns in your data.

You can also use descriptive tools for exploratory data analysis, where your goal is to discover patterns and structure in your data.

For example, you can use descriptive tools to explore potential relationships between variables, explore differences between categories of a variable, and to visualize subsets of your data across many variables.

As you learn in the upcoming videos, the types of descriptive methods that you use depend largely on the types of data that you have and the number of variables you are analyzing.

In future modules, you learn about formal tools for drawing inferences from your data.

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