

# Statistical Method

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# 1 Basic Concepts

- Definition 1.1** (variable). • **Quantitative variable**: Variables that take numerical values for which arithmetic operations, such as adding and averaging, work.
- **Categorical variables**: Variables that fall into one of several categories. What can be counted is the count or proportion of individuals in each category.

## Ways to chart quantitative data

- Histograms:
  - The range of values that a variable can take is divided into equal size.
  - The histogram shows the number of individual data points that fall into each interval.
  - It is called **unimodel** if it has a single peak and **bimodel** if it has two peaks.
  - **outliers**: Outliers are observations that lie outside the overall pattern of a distribution. Always look for outliers and try to explain them.()
- Line graphs: time plots.
  - A **trend** is a rise or fall that persists over time, despite small irregularities.
  - A pattern that repeats itself at regular intervals of time is called **seasonal variation**.

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# List of Theorems