

Frequency and Sampling Distribution

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The frequency distribution reveals how a specific statistic about a sample applies to the units within that sample. A sampling distribution reveals how a specific statistic applies to all the possible samples from the same population.

	Frequency Distribution	Sampling Distribution
1. Units in curve	Observations, such as people, firms, cities, countries	Estimates of parameters calculated from repeated, identical samples of the same population
2. Normal distribution	Rarely	Usually
3. Basis	Empirical: cases systematically sampled from a defined population	Theoretical: either through the central limits theorem or simulation
4. Average value	Sample mean	'True' or population mean
5. Distribution unit	Standard deviation	Standard error
6. Primary use	Description of a specific sample	Inference; hypothesis testing about a population
7. Value to social science	Limited beyond description, only few measures are normally distributed	Great, the foundation for almost all quantitative work
8. Increased sample	Doesn't change shape	Distribution becomes more peaked
9. Thoughtfully used?	Occasionally	Almost never; use is normative



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