

CHAPTER OVERVIEW

7: Sampling Distributions and the Central Limit Theorem

A statistic, such as the sample mean or the sample standard deviation, is a number computed from a sample. Since a sample is random, every statistic is a random variable: it varies from sample to sample in a way that cannot be predicted with certainty. As a random variable it has a mean, a standard deviation, and a probability distribution. The probability distribution of a statistic is called its sampling distribution. Typically sample statistics are not ends in themselves, but are computed in order to estimate the corresponding population parameters. This chapter introduces the concepts of the mean, the standard deviation, and the sampling distribution of a sample statistic, with an emphasis on the sample mean

[7.1: The Mean and Standard Deviation of the Sample Mean](#)

[7.2: The Sampling Distribution of the Sample Mean](#)

[7.3: The Sample Proportion](#)

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