



SEARCH



RESOURCES

CONCEPTS



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17. Video: Two Useful Theorems - ...

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19. Notebook + Quiz: Central Limit...

Sampling Distributions Notes

We have already learned some really valuable ideas about sampling distributio

First, we have defined **sampling distributions** as **the distribution of a statist**

This is fundamental - I cannot stress the importance of this idea. We simulated distributions in the previous ipython notebook for samples of size 5 and size 20 you will do more than once in the upcoming concepts and lessons.

Second, we found out some interesting ideas about sampling distributions that this lesson as well. We found that for proportions (and also means, as proporti 1 and 0 values), the following characteristics hold.

1. The sampling distribution is centered on the original parameter value.
2. The sampling distribution decreases its variance depending on the sample size. The variance of the sampling distribution is equal to the variance of the original distribution divided by the sample size used. This is always true for the variance of a sample mean.

In notation, we say if we have a random variable, \mathbf{X} , with variance of σ^2 , then the sampling distribution of the sample mean has a variance of $\frac{\sigma^2}{n}$.

Looking Ahead

The rest of this lesson will reinforce some of these ideas that you saw at work in the previous lessons. We are already being introduced to some big ideas that will continue to show up again.

**Mentor Help**

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