



What Does A 95% Confidence Interval Mean?

Ha Khanh Nguyen (hknguyen)

X = the amount of coffee a U of I student drinks per day

μ = the true average amount of coffee a U of I student drinks per day

\bar{x} = sample average for a particular sample

A 95% confidence interval for μ : (8.4, 10.2) oz

What does confidence level of 95% mean?

1. There is a 95% probability that the population mean is between 8.4 oz and 10.2 oz.
2. There is a 95% probability that the sample mean is between 8.4 oz and 10.2 oz.
3. 95% of the population data are between 8.4 oz and 10.2 oz.
4. 95% of the sample data are between 8.4 oz and 10.2 oz.
5. If we take many samples of the same size and each compute a 95% CI for μ , about 95% of the sample means would be between 8.4 oz and 10.2 oz.
6. If we take many samples of the same size and each compute a 95% CI for μ , about 95% of the CIs will contain the true mean μ .