Zur LVA in TISS

Dashboard / Meine Kurse / 107.254-2022W / Tests / Test 10 - Confidence intervals

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Verbrauchte Zeit	23 Minuten 47 Sekunden
Bewertung	**7** von 10 (**70**%)
Feedback	Congratulations! You have successfully passed the test!

Frage **1**
Vollständig
Erreichte Punkte 0 von 1

A 95% confidence interval from a poll performed to estimate the population proportion of eligible voters who would not vote in the next Presidential election is (42%, 48%). Which of the following statements is **true**?

- a. A 90% confidence interval would have been wider.
- b. The probability that the population proportion lies in this interval is 0.95.
- c. If the poll were to be repeated in an identical fashion then there is a 95% chance that the new sample proportion will lie in the range 42% to 48%.
- d. The sample size that was used in the poll was approximately 1,050.

Frage **2**
Vollständig
Erreichte Punkte 1 von 1

Under what conditions would it be meaningful to construct a confidence interval estimate when the data consist of the entire population?

- a. If a higher level of confidence is desired
- b. Never
- c. If the population size is large
- d. If the population is truly random

Frage **3**
Vollständig
Erreichte Punkte 1 von 1

A 95% confidence interval from a poll performed to estimate the population proportion of eligible voters who would not vote in the next Presidential election is (40%, 50%). Which of the following statements is true?

- a. If the sample sized were doubled, then the width of this interval would be reduced by the factor $1/\sqrt{2}$.
- b. If the sample sized were doubled, then the width of this interval would be reduced by the factor $1/2$.
- c. If the poll were to be repeated in an identical fashion then there is a 95% chance that the new sample proportion will lie in the range 40% to 50%.
- d. The sample size that was used in the poll was approximately 1,050.

Frage **4**
Vollständig
Erreichte Punkte 0 von 1

Student's one-sample 99%-confidence interval is evaluated on n data and it overlaps a claimed parameter μ_0.

Let q be the 99.5%-quantile of the $t(n-1)$-distribution. It holds that

- a. don't know as test not rejected on 1%-level gives no information of 5%-level where R now larger
- b. the distance of the mean of the data and μ_0 is smaller or equals than q times the standard error of the mean
- c. the variance of the sum of two independent and $t(n-1)$-distributed random variables is larger than the sum of their variances
- d. the distance of the mean of the data and μ_0 is larger than q times the standard error of the mean

Frage **5**
Vollständig
Erreichte Punkte 1 von 1

An analyst has an iid sample of size 100, for which the sample mean equals 50 and the sample standard deviation is 30. Which of the following is an approximate 95% confidence interval for the population mean μ?

Use the normal quantiles below.

q_α	$q_{0.895}$	$q_{0.90}$	$q_{0.950}$	$q_{0.975}$	$q_{0.990}$	$q_{0.995}$	$q_{0.999}$
	1.253	1.280	1.645	1.960	2.33	2.58	3.09

- a. (410.37, 50.63)
- b. (43.73, 56.27)
- c. (45.89, 54.11)
- d. (44.12, 55.88)

Frage **6**
Vollständig
Erreichte Punkte 1 von 1

One gallon of gasoline is put in each of 30 test autos, and the resulting mileage figures are tabulated with the sample mean $\bar{x} = 28.5$ and the sample standard deviation $s = 1.2$. Determine a 95% confidence interval estimate of the mean mileage.

- a. (28.1, 28.9)
- b. (28.42, 28.58)
- c. (27.36, 210.64)
- d. none of the rest

Frage **7**
Vollständig
Erreichte Punkte 1 von 1

Student's one-sample 99%-confidence interval is evaluated on n data and it overlaps a claimed parameter μ_0. Let q be the 95%-quantile of the $t(n-1)$-distribution. It holds that

- a. don't know as test not rejected on 1%-level gives no information of 5%-level where R now larger
- b. the distance of the mean of the data and μ_0 is larger than q times the standard error of the mean
- c. the variance of the sum of two independent and $t(n-1)$-distributed random variables is larger than the sum of their variances
- d. the distance of the mean of the data and μ_0 is smaller or equals than q times the standard error of the mean

Frage **8**
Vollständig
Erreichte Punkte 1 von 1

Changing from a 95% confidence interval estimate for a population proportion to a 99% confidence interval estimate, with all other things being equal,

- a. decreases the interval size by 4%.
- b. increases the interval size by 31%.
- c. decreases the interval size by 31%.
- d. increases the interval size by 4%.

Frage **9**
Vollständig
Erreichte Punkte 0 von 1

A 95% confidence interval for a population mean based on a sample of size 400 is (20, 28). Which one of the following statements is **true**?

- a. If we were to collect a new sample, then the interval created using it would contain the true population mean with probability 95%.
- b. Across many samples, 95% of sample means should lie within an interval made by this method.
- c. The sample mean has a 95% chance of being in (20, 28).
- d. There is a 95% probability that the true value of the population mean is in (20,28).

Frage **10**
Vollständig
Erreichte Punkte 1 von 1

In general, how does doubling the sample size change the confidence interval size?

- a. Divides the interval size by $\sqrt{2}$
- b. Halves the interval size
- c. Multiplies the interval size by $\sqrt{2}$
- d. Doubles the interval size

◀ Test 9 - One sample z-test, one-sample t-test, two-sample t-test, test for proportions

Direkt zu:

Test 11 - Chi-square tests ▶