

Econometrics

Lecture 5: Hypothesis Testing

Quiz Solutions

1. A researcher, Sandra wishes to find out about the mean of a population. She takes a sample, calculates the sample mean and works out the 95% confidence interval for the population mean. Which of the following results would she prefer?
 - a. The confidence interval is very wide
 - b. The confidence interval is very narrow
 - c. It makes no difference to her what the width of the confidence interval is
 - d. None of the above
2. Suppose we have two populations, one with a smaller standard deviation than the other. We take two samples of the same size, one from each population, and work out a 95% confidence interval for each mean. The confidence interval for the population with the smaller standard deviation will be:
 - a. Narrower;
 - b. Wider
 - c. The same width;
 - d. All the above
3. The larger the sample, the smaller the spread in the sampling distribution. True / False
False
4. A hypothesis is an assumption about the sample parameter. True / False
True
5. The sigma value is known in 't' test statistics. True / False
False
6. What is an alternative hypothesis?
It is an opposite to null hypothesis. The aim of the researchers is to frame alternative hypothesis is to nullify the null hypothesis and accept the alternative hypothesis.
7. Does the level of significance (α) represent a probability of rejecting the null hypothesis or alternative hypothesis?
Probability of rejecting the null hypothesis by causing type 1 error.
8. If the test statistics falls in the critical region, do we accept or reject the null hypothesis?
We accept the null hypothesis, because it falls in the accepted zone of the distribution.
9. When would we use a t-test instead of a z-test? Why might we prefer one over the other?
When the standard deviation is unknown and also sample size (n) $<$ 30.
10. What is the goal in hypothesis testing?
The purpose of hypothesis testing is to test whether the null hypothesis (there is no difference between the population and sample parameters) can be rejected or approved.