

DAILY ASSESSMENT

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Course:	Coursera	USN:	4AL17EC070
Topic:	Basic Statics	Semester & Section:	6 TH SEM & 'B' Section
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SESSION DETAILS

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Basic Statistics > Week 7 > 7.02 Test about proportion

Hypotheses and significance tests

- Reading: Hypotheses and significance tests 10 min
- Video: 7.01 Hypotheses 5 min
- Video: 7.02 Test about proportion 7 min
- Video: 7.03 Test about mean 4 min

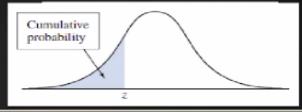
Step-by-step plan and confidence interval

Type I and Type II errors and example

Review

7.02 Test about proportion

z Table



Standard normal cumulative probabilities

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823

This p-value shows us that finding a sample proportion of 0.02,

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Basic Statistics > Week 7 > 7.06 Type I and Type II errors

- Video: 7.01 Hypotheses 5 min
- Video: 7.02 Test about proportion 7 min
- Video: 7.03 Test about mean 4 min

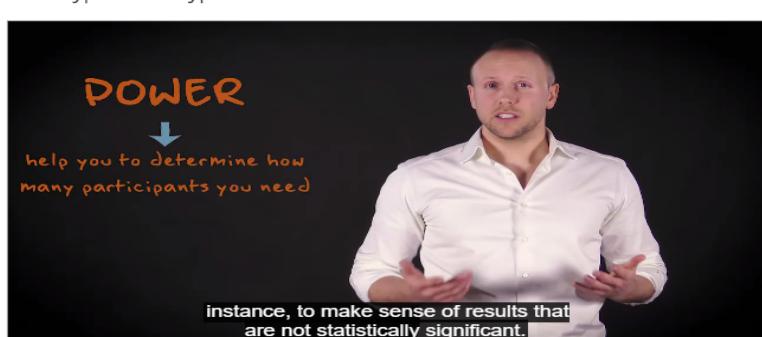
Step-by-step plan and confidence interval

Type I and Type II errors and example

- Reading: Type I and Type II errors and example 10 min
- Video: 7.06 Type I and Type II errors 4 min
- Video: 7.07 Example 4 min

Review

7.06 Type I and Type II errors



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Hypotheses

Sample data

↑
Significance test → method of inferential statistics

Hypotheses

expectations about population

null Hypothesis testing
↓
Hypotheses

null hypothesis
 H_0

mutually exclusive

alternative hypothesis
 H_a

- The parameter you're interested in takes a specific value
- Will be rejected if the data in your sample suggest that it is a highly unlikely expectation
- claims that the parameter you're interested in falls within an alternative range of values

Test about proportion

How many Z-scores the sample statistic is removed from the population parameter

↓
Z-score

$$\text{test statistic} = z = \frac{\hat{p} - p_0}{s_{\hat{p}}}, \text{ where } s_{\hat{p}} = \sqrt{\frac{p_0(1-p_0)}{n}}$$

Significance test

one or two tailed

significance level

most significance tests are two-tailed, and based on a significance level of 0.05

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step by step plan and confidence interval

1. Proportion or mean?
2. Formulate hypothesis
3. Check assumptions
4. Determine α
5. Compute test statistics
6. Draw sampling distribution
7. Find location of test statistic
8. Reject H_0 ?
9. Interpret findings

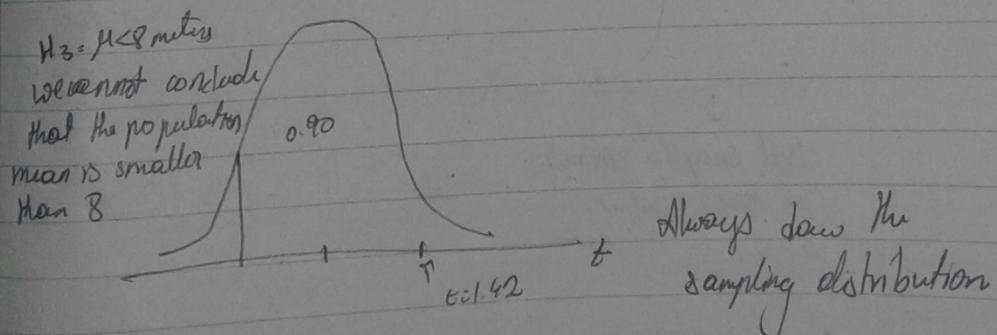
Significance test & confidence interval

- inferential statistics
- ↓
- estimation (confidence interval)
- significance test

assumptions:

1. Randomization
2. Population distribution "approximately normal"

sampling distribution of sample mean





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COURSE
CERTIFICATE

07/29/2020

Pooja K S

has successfully completed

Basic Statistics

an online non-credit course authorized by University of Amsterdam and offered
through Coursera

AZS



Dr. Anoumarie Zand Scholten, Dr. Matthijs Duijn, Dr. ir. E.E. van Loon
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