

Study Session Week of 4/16

Objectives:

- I will discuss the differences between inference procedures
 - Confidence Intervals vs Hypothesis Tests
 - z, t, lin reg, chi square
- I will make informed decisions on which procedure to use when

Agenda:

- Confidence Intervals vs. Hypothesis Tests
 - What to look for
- Choosing the correct distribution (z, t (samples & linear regression) and chi square)

Confidence Intervals vs. Hypothesis Tests

H.T.
↳ one question & space

- Look at the question – are they asking for
 - Statistical evidence?
 - Convincing evidence?
 - An estimate?

CI
↳ question follow-up

↳ value range? → confidence interval

hypo test

z distribution

- PROPORTIONS % $\frac{\cdot}{\cdot}$

Number of proportions?

- Comparing to one “standard”
- Comparing to another sample

one population?
two populations?

t distribution

- Means - QUANTITATIVE

Number of ^{samples} ~~proportions~~?

- Comparing to one “standard”
- Comparing to another sample
- Or is it one sample with 2 trials each?

one sample
two sample
matched pair = 1 sample
diff.

Linear Regression t distribution

- Examining the relationship between two QUANTITATIVE variables
 - Positive?
 - Negative?
 - Exists?

χ^2 Distribution

Categorical Data

- **Goodness of Fit (GOF)**

- One sample – distributed over one categorical variable (color, age group, etc.)

- **Homogeneity**

- TWO or more samples – is the distribution of ONE categorical variable the same in TWO (or more) POPULATIONS

- **Independence**

- ONE sample - is there an association between TWO VARIABLES (age vs. gender; race vs. opinion) in ONE POPULATION

two way tables

(Similar to Lin Reg)

Practice

<https://bit.ly/1N9dDIN>



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