Stat303: Statistical Methods

Homework 07 (07/24/2009)

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1. Chapter 7.1 Summary

- $df = 15 - 1 = 14$, $t_{.05/2,14}$
- $df = 26 - 1 = 25$, $t_{.10/2,25}$
- $df = 49 - 1 = 48$, $t_{.20/2,48} \rightarrow t_{.20/2,40}$

2. Chapter 7.1 Summary

- For these t values, we look up on the table alogn df=21.
- Find two t values inside the row that bounds $t = 1.87$.
- Look up top of each column where you find (b).

3. Chapter 7.1 Summary

$$\bar{X} \pm t_{.10/2,n-1}\frac{s}{\sqrt{n}}$$

4. Chapter 7.2 Summary

$$(|\bar{X}_1 - \bar{X}_2|) - t_{.05/2,50-1}\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$$

5. Chapter 7.2 Summary

$$(|\bar{X}_1 - \bar{X}_2|) - t_{.05/2,n_1+n_2-1}s_p\sqrt{\frac{1}{n_1} + \frac{1}{n_2}} \text{ where } s_p^2 = \frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}$$

6. Chapter 7.2 Summary

$$\begin{aligned} t &= \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{SE(\bar{X}_1) + SE(\bar{X}_2)}} \text{ where } \min(n_1 - 1, n_2 - 1) \\ CI &= (\bar{X}_1 - \bar{X}_2) \pm t_{.05/2,df}\sqrt{SE(\bar{X}_1) + SE(\bar{X}_2)} \end{aligned}$$

7. Chapter 7.2 Summary

$$\begin{aligned} (|\bar{X}_1 - \bar{X}_2|) &- t_{.05/2,50-1}\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}} \\ (|\bar{X}_1 - \bar{X}_2|) &- t_{.05/2,n_1+n_2-1}s_p\sqrt{\frac{1}{n_1} + \frac{1}{n_2}} \text{ where } s_p^2 = \frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2} \end{aligned}$$

8-12 Chapter 7.1 Summary

$$t = \frac{\bar{X} - \mu_0}{s/\sqrt{n}}$$