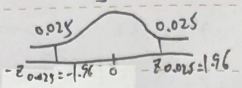
A107270046 企管二甲 郭紘維

7.3 (1) $H_0: \mu = 30$, $H_1: \mu \neq 30$ (2) $\alpha = 0.05$

(3) 棄卻域 $C = \{|Z| > z_{0.025}\} = \{|Z| > 1.96\}$

(4) $z = \frac{\bar{x} - \mu_0}{\frac{s}{\sqrt{n}}} = \frac{30.563 - 30}{\frac{2.359}{\sqrt{64}}} = 1.713$



不棄卻虛無假設，無法顯示業者宣稱有誤

7.4 p-值 $= 2P(Z > 1.73)$

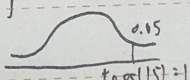
$\cong 2P(Z > 1.91)$

$= 2 \times 0.0281 = 0.0562 > \alpha$ 不棄卻虛無假設

7.5 (1) $H_0: \mu \leq 55$, $H_1: \mu > 55$ (2) $\alpha = 0.05$

(3) 棄卻域 $C = \{T > t_{0.05}(15)\} = \{T > 1.753\}$

(4) $T = \frac{\bar{x} - \mu_0}{\frac{s}{\sqrt{n}}} = \frac{59.312 - 55}{13.189 / \sqrt{16}} = 1.308$



p-值 $= P(T > 1.308) \cong P(T > 1.31)$

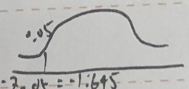
不棄卻虛無假設

↑ 不棄卻，沒有優於去年

7.6 (1) $H_0: \mu_1 - \mu_2 \geq 0$, $H_1: \mu_1 - \mu_2 < 0$ (2) $\alpha = 0.05$

(3) 棄卻域 $C = \{Z < -z_\alpha\} = \{Z < -1.645\}$

(4) $z = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} = \frac{6.98 - 7.20}{\sqrt{\frac{0.71^2}{200} + \frac{0.75^2}{150}}} = -2.80$

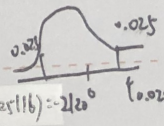


棄卻，男學生睡眠時間少於女學生

7.7 (1) $H_0: \mu_1 - \mu_2 = 0$, $H_1: \mu_1 - \mu_2 \neq 0$ (2) $\alpha = 0.05$

(3) 棄卻域 $C = \{|T| > t_{\frac{\alpha}{2}}(n_1 + n_2 - 2)\} = \{|T| > t_{0.025}(16)\} = \{|T| > 2.120\}$

(4) $S_p = \sqrt{\frac{9 \times 0.653^2 + 7 \times 0.627^2}{10 + 8 - 2}} = 0.642$, $T = \frac{7.728 - 7.546}{0.642\sqrt{\frac{1}{10} + \frac{1}{8}}} = 0.598$



不棄卻，沒有顯著差異

7.8 (1) $H_0: \mu_1 - \mu_2 = 0$, $H_1: \mu_1 - \mu_2 \neq 0$

(2) $\alpha = 0.05$

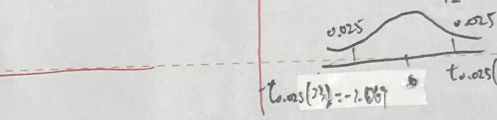
(3) $v = \frac{\left(\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}\right)^2}{\frac{\left(\frac{s_1^2}{n_1}\right)^2}{n_1 - 1} + \frac{\left(\frac{s_2^2}{n_2}\right)^2}{n_2 - 1}} = \frac{\left(\frac{1.82^2}{12} + \frac{8.58^2}{15}\right)^2}{\frac{\left(\frac{1.82^2}{12}\right)^2}{12 - 1} + \frac{\left(\frac{8.58^2}{15}\right)^2}{15 - 1}}$

$= 22.173 \doteq 23$

棄卻域 $C = \{|T| > t_{\frac{\alpha}{2}}(v)\}$

$= \{|T| > t_{0.025}(23)\} = \{|T| > 2.069\}$

(4) $T = \frac{78.25 - 72.60}{\sqrt{\frac{4.82^2}{12} + \frac{8.58^2}{15}}} = 2.161$



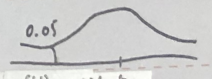
棄卻，有顯著差異

7.9 (1) $H_0: \mu - \mu_2 \geq 0$, $H_1: \mu_1 - \mu_2 < 0$

(2) $\alpha = 0.05$ (3) 棄卻域 $C = \{T < -t_{0.05}(11)\}$

$= \{T < -1.796\}$

(4) $T = \frac{\bar{d} - \mu_0}{\frac{s_d}{\sqrt{n}}} = \frac{-3.5 - 0}{\frac{5.231}{12}} = -2.318$



棄卻，進修員工有較好表現