英語二甲 A107320075 羅佳琪
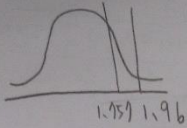第 7 章習題(6-10)

6. $\bar{x} = 4.65$, $S = 1.26$

(1) $n = 40$, $\alpha = 0.05$

$H_0: M = 4.3$, $H_1: M \neq 4.3$

$Z_{0.025} = 1.96$

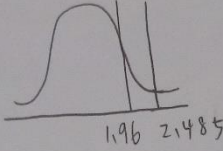$$\dfrac{4.65 - 4.3}{\dfrac{1.26}{\sqrt{40}}} = 1.757$$

∴ Accept H_0

(2) $n = 80$, $\alpha = 0.05$

$H_0: M = 4.3$, $H_1: M \neq 4.3$

$Z_{0.025} = 1.96$

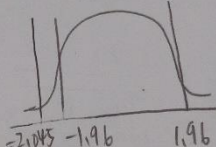$$\dfrac{4.65 - 4.3}{\dfrac{1.26}{\sqrt{80}}} = 2.485$$

∴ 拒絕 H_0

7. $H_0: M_1 = M_2$, $H_1: M_1 \neq M_2$

$Z_{0.025} = 1.96$

$$\dfrac{(\bar{x} - \bar{y}) - 0}{\sqrt{\dfrac{S_1^2}{n_1} + \dfrac{S_2^2}{n_2}}} = \dfrac{38.3 - 40.1}{\sqrt{\dfrac{40}{100} + \dfrac{30}{80}}} = -2.045$$

∴ 拒絕 H_0

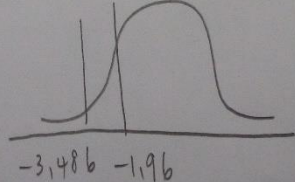8. $H_0: M_1 = M_2$, $H_1: M_1 \neq M_2$

$$\dfrac{(\bar{x} - \bar{y}) - 0}{Sp\sqrt{\dfrac{1}{n_1} + \dfrac{1}{n_2}}} \qquad Sp = \sqrt{\dfrac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}} = \sqrt{\dfrac{63 \times 3.2^2 + 80 \times 3.6^2}{143}} = 3.430$$

$$= \dfrac{32 - 34}{3.430\sqrt{\dfrac{1}{64} + \dfrac{1}{81}}} = -3.486$$

∴ 拒絕 H_0

9, $t_{0.025}(18) = 2.101$

$H_0 : M_1 = M_2$, $H_1 : M_1 \neq M_2$

$$\frac{(\bar{x} - \bar{y})}{s_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$s_p = \sqrt{\frac{9 \times (4.5265)^2 + 9 \times 6.6415^2}{18}} = 5.693$$

$$= \frac{82.6 - 84.9}{5.693 \sqrt{\frac{1}{10} + \frac{1}{10}}} = -0.903$$

∴ Accept H_0

-2.101 -0.903 2.101
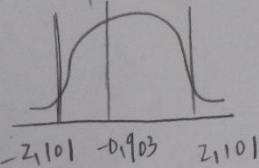
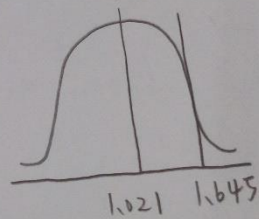10, $Z_{0.05} = 1.645$

$H_0 : P \geq 0.4$, $H_1 : P < 0.4$

$$Z = \frac{\hat{P} - P_0}{\sqrt{\frac{P_0(1 - P_0)}{n}}} = \frac{0.45 - 0.4}{\sqrt{\frac{0.4 \times 0.6}{100}}} = 1.021$$

1.021 1.645

拒絕 H_0