

# 4/ 實習課題

$$3. n=10 \quad \bar{x}=13.63 \quad S=6.06$$

$$h-1=9 \quad 1-\alpha=0.98 \quad \frac{\alpha}{2}=0.01$$

$$\bar{x} \pm t_{\frac{\alpha}{2}, (n-1)} \frac{S}{\sqrt{n}} = 13.63 \pm t_{0.01, 9} \frac{6.06}{\sqrt{10}}$$

$$= 13.63 \pm 2.821 \times 1.91$$

$$= 13.63 \pm 5.379$$

$$= (8.24, 19.02)$$

$$4. (1) n=1200 \quad \hat{p}=0.33 \quad 1-\alpha=0.98$$

$$0.33 \pm Z_{\frac{\alpha}{2}} \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$

$$= 0.33 \pm 2.327 \times \sqrt{\frac{0.33 \times 0.67}{1200}}$$

$$= 0.33 \pm 0.03$$

$$= (0.30, 0.36)$$

$$14. (1) n=16 \quad \bar{x}=1.73 \quad S=0.8$$

$$1-\alpha=0.95 \quad t_{\frac{\alpha}{2}, (n-1)}$$

$$= t_{0.025, (14)} = 2.145$$

$$1.73 \pm t_{0.025, (14)} \frac{0.8}{\sqrt{15}}$$

$$= 1.73 \pm 2.145 \times \frac{0.8}{\sqrt{15}}$$

$$= (1.73 \pm 0.44)$$

$$(2) n=820 \quad \bar{x}=654 \quad \hat{p}=\frac{450}{820}$$

$$= 0.549$$

$$1-\alpha=0.95 \quad \frac{\alpha}{2}=0.025$$

$$0.549 \pm 1.96 \times \sqrt{\frac{0.549 \times 0.451}{820}}$$

$$= 0.549 \pm 1.96 \times 0.014$$

$$= 0.549 \pm 0.03$$

$$= (0.519, 0.582)$$

$$(2) \quad 1.73 \pm t_{0.10, (14)} \frac{0.8}{\sqrt{15}}$$

$$= 1.73 \pm 1.345 \times \frac{0.8}{\sqrt{15}}$$

$$= 1.73 \pm 0.28$$

$$= (1.45, 2.01)$$

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