

$$(\hat{p} - z \frac{\sqrt{\hat{p}(1-\hat{p})}}{n}, \hat{p} + z \frac{\sqrt{\hat{p}(1-\hat{p})}}{n})$$

$$= (0.56 - 0.12, 0.56 + 0.12) = (0.44, 0.68)$$

⑧ 两个母总体比例差 $p_1 - p_2$ 的 $100(1-\alpha)\%$ 置信区间

$$\hat{p}_B = \frac{55}{100} = 0.55 \quad \hat{p}_U = \frac{60}{100} = 0.6$$

$$z_{0.025} = 1.96$$

$$(\hat{p}_B - \hat{p}_U) - z \frac{\sqrt{\frac{\hat{p}_B(1-\hat{p}_B)}{n_B} + \frac{\hat{p}_U(1-\hat{p}_U)}{n_U}}}{2}$$

$$(\hat{p}_B - \hat{p}_U) + z \frac{\sqrt{\frac{\hat{p}_B(1-\hat{p}_B)}{n_B} + \frac{\hat{p}_U(1-\hat{p}_U)}{n_U}}}{2}$$

$$((0.55 - 0.6) - 1.96 \sqrt{\frac{0.55 \times 0.45}{100} + \frac{0.6 \times 0.4}{100}},$$

$$(0.55 - 0.6) + 1.96 \sqrt{\frac{0.55 \times 0.45}{100} + \frac{0.6 \times 0.4}{100}})$$

$$= (-0.19, 0.09)$$

7. 例

6.

$$n = 1250$$

$$b = 140$$

$$1 - \alpha = 0.95$$

$$1250 \pm z_{0.025} \sqrt{\frac{140^2}{1250}}$$

$$= (1250 - 25.05, 1250 + 25.05)$$

$$= (1224.95, 1275.05)$$

科別: _____

題次: week 4 年 _____ 班座號: _____ 姓名: 葉宇連 得分: _____

① 支持與不支持

1. 母體比例 $p \pm 100(1-\alpha)\%$ 信賴區間為 $\hat{p} \pm z_{\frac{\alpha}{2}} \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$

$$(1) \hat{p} = \frac{105}{250} = 0.42$$

$$(0.42 - 1.645 \sqrt{\frac{0.42 \times 0.58}{250}}, 0.42 + 1.645 \sqrt{\frac{0.42 \times 0.58}{250}})$$

$$= (0.369, 0.471)$$

$$(2) e = 0.03 \quad 1 - \alpha = 0.95 \quad z_{\frac{\alpha}{2}} = z_{0.025} = 1.96$$

$$a. p = 0.3$$

$$n = \left(\frac{1.96}{0.03} \right)^2 (0.3)(0.7) = 896.37 \div 897$$

$$b. \hat{p} = \frac{105}{250} = 0.42 \quad n = \left(\frac{1.96}{0.03} \right)^2 (0.42)(0.58) = 1039.79 \div 1040$$

$$c. p = 0.5 \quad n = \left(\frac{1.96}{0.03} \right)^2 (0.5)(0.5) = 1067.11 \div 1068$$

7-228

$$(1) t_{0.025}(10) = 2.228 \quad (2) t_{0.95}(8) = -2.05(8) = -1.86$$

$$(3) \chi^2_{0.05}(12) = 21.03 \quad (4) \chi^2_{\alpha}(5) = 9.26 \quad \alpha = ?$$

$$\alpha = 0.95$$

$$(5) \chi^2_{0.95}(10) = 3.940 \quad (6) F_{0.05}(5, 8) = 3.69$$

$$(7) F_{0.95}(6, 7) = \frac{1}{F_{0.05}(7, 6)} = \frac{1}{4.26} = 0.238$$

$$(8) F_{\alpha}(6, 6) = 4.28 \quad \alpha = 0.05$$

$$(9) p.219$$

$$\frac{43}{80} = \frac{7}{16} = 0.5625 \div 0.06$$

$$(1) \hat{p} = 0.5625 \div 0.56$$

$$(2) e = z_{\frac{\alpha}{2}} \sqrt{\frac{\hat{p}(1-\hat{p})}{n}} = 2.025 \sqrt{\frac{0.56 \times 0.44}{80}} = 1.96 \times 0.06 = 0.12$$