

Week 13. 作業 企管二甲 A10710037 3次考備

例 9.7

$$T_1 = 120 + 180 = 300 \quad T_3 = 190 + 170 + 210 = 570$$

$$T_2 = 140 + 120 + 130 = 390 \quad T_4 = 240 + 300 = 540$$

$$T = 300 + 390 + 570 + 540 = \sum_{i=1}^k \sum_{j=1}^{h_i} y_{ij} = 1800$$

$$\sum_{i=1}^k \sum_{j=1}^{h_i} y_{ij}^2 = 120^2 + 180^2 + 140^2 + \dots + 240^2 + 300^2 = 354400$$

$$SS1 = 354400 - \frac{(1800)^2}{10} = 30400$$

$$SS1R = \frac{(300)^2}{2} + \frac{(390)^2}{3} + \frac{(570)^2}{3} + \frac{(540)^2}{2} - \frac{(1800)^2}{10} = 25800$$

$$SSE = SS1 - SS1R = 30400 - 25800 = 4600$$

例 9.8

$$H_0: \alpha_1 = \alpha_2 = \alpha_3 = \alpha_4$$

H_1 : 至少有 2 種外觀顏色對銷售量的影響效果不同

| 變異來源 | 平方和 | 自由度 | 均方 | F 值 |
|------|----------------|--------------|---------------------------------|---------------------------|
| 包裝材料 | $SS1R = 25800$ | $4 - 1 = 3$ | $MS1R = \frac{25800}{3} = 8600$ | $\frac{8600}{767} = 11.2$ |
| 隨機誤差 | $SSE = 4600$ | $9 - 3 = 6$ | $MSE = \frac{4600}{6} = 767$ | |
| 總和 | $SS1 = 30400$ | $10 - 1 = 9$ | | |

$$F = 11.2 > F_{0.05}(3, 6) = 4.76$$

棄卻 H_0 , 認為 4 種食品包裝對銷售量影響有顯著差別