

Y_{ij}
↓
組別 No.?

A	B	C	每分鐘打字數
$Y_{11} = 40$	$Y_{21} = 39$	$Y_{31} = 33$	
$Y_{12} = 42$	$Y_{22} = 41$	$Y_{32} = 34$	
$Y_{13} = 27$	$Y_{23} = 45$	$Y_{33} = 28$	
$Y_{14} = 30$	$Y_{24} = 37$	$Y_{34} = 42$	
	$Y_{25} = 44$	$Y_{35} = 34$	
		$Y_{36} = 36$	
$\bar{Y}_A = \frac{40+42+27+30}{4}$	$\bar{Y}_B = \frac{39+41+45+37+44}{5}$	$\bar{Y}_C = \frac{33+34+28+42+34+36}{6}$	
$= 34.75$	$= 41$	$= 34.33$	

樣本平均數 (μ_i)

$$\bar{Y} = \frac{n_1 \bar{Y}_A + n_2 \bar{Y}_B + n_3 \bar{Y}_C}{n_1 + n_2 + n_3} \quad \leftarrow (\mu) = \frac{40+42+27+\dots+36}{15} = 36.67$$

$$H_0: \mu_A = \mu_B = \mu_C = \mu$$

H_1 : 不全等

H_0 是事實, 即 $\bar{Y}_A = \bar{Y}_B = \bar{Y}_C = \bar{Y}$

$$a_A = \bar{Y}_A - \bar{Y}$$

$$a_B = \bar{Y}_B - \bar{Y} \quad \text{分表代表每分鐘字數樣本平均數和}$$

$$a_C = \bar{Y}_C - \bar{Y} \quad \text{總樣本平均數的差異}$$

$a_A^2 + a_B^2 + a_C^2$ 的最小值發生於 $\bar{Y}_A = \bar{Y}_B = \bar{Y}_C = \bar{Y}$
 $a_A^2 + a_B^2 + a_C^2$ 的值越小, 表示各樣本平均數的差異越小, H_0 成立