

6. Expected Frequencies

Response	C	A	N.Z	U.K	Total
N	160	160	160	160	640
S	40	40	40	40	160
Total	200	200	200	200	800

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

$$\frac{(155-160)^2}{160} + \frac{(165-160)^2}{160} + \frac{(166-160)^2}{160} + \frac{(154-160)^2}{160}$$

$$+ \frac{(45-40)^2}{40} + \frac{(35-40)^2}{40} + \frac{(34-40)^2}{40} + \frac{(46-40)^2}{40}$$

$$= 3.8125$$

$$P\text{-value} = 0.282$$

Fail to Reject H_0 since $p\text{-value} > 0.05$. There is not enough evidence to conclude that smoking differ between commonwealth countries