Rifath Bin Mashrur

ID: 20-42079-1 Serial-10

(10.2)

Highways	1	2	3	4	Total
No of road accident (O_i)	50	42	32	82	206

We need to test: $H_0: P_1 = P_2 = P_3 = P_4$. Vs H_1: At least one of them doesn't hold test statistic.

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

$$= \frac{[50^2 + 42^2 + 32^2 + 82^2]}{51.5} - 206$$

$E_i = \frac{n}{K} = \frac{206}{4} = 51.5$

$$= 27.24$$

Since, $\chi^2 > \chi^2_K = 1.50$, H_0, is not Accepted.

Serial - 10

(10.4)

Department	1	2	3	4	Total
No. of female student (o_i)	250	450	150	150	1000

We need to test $H_0: p_1 = p_2 = p_3 = p_4$ vs H_1: At least one of them doesn't hold

test statistic:

Now, $\chi^2 = \sum \frac{o_i^2}{E_i} - n = \frac{[250^2 + 450^2 + 150^2 + 150^2]}{1000/4} - 1000$

$= 240$

Since, $\chi^2 > \chi^2_{k-1}$,

So; H_0 is not accepted.