χ^2

Formula was employed to determine the x^2 values for various stratom on 325 items laid down by Garette.

VI   Agriculture Officer

Step 1

Sum the rows and columns to obtain row and column frequency totals R and C.

Urban Boys	59	99	92	Row Total
	(50.21)*	(117.9)	(81.8)	250*
Urban Girls	33	117	58	208
	(41.7)*	(98)	(68)	
Column Total	92*	216	150	458*

Here the Total No. of Urban Boys = 250   N = 458 (2)

Total No. of Urban Girls = 208   Expected Frequencies (3)

Step 2   Sum the row and column total
           Separately to obtain N

Step 3   Compute the expected   (1) $\dfrac{250 \times 92}{458}$ = 50.2

frequency (fe) for each cell

in the table by proportion-   (2) $\dfrac{250 \times 216}{458}$ = 117.9

ating the row total

according to column totals.   (3) $\dfrac{250 \times 150}{458}$ = 81.8

fe = $\dfrac{(R) \times (C)}{N}$ where R is

(4) $\dfrac{208 \times 92}{458}$ = 41.7

The total of row, the cell is

in and C is the total of the.

column it is in.

$$(5) \quad \frac{208 \times 216}{458} = \underline{98}$$

$$(6) \quad \frac{208 \times 150}{458} = \underline{68}$$

Step 4   Enter the expected frequencies (fe) in the appropriate cell of the contingency table. These expected frequencies must sum to the same row and column totals as the observed frequencies.

Step 5   Substract to obtain fo-fe difference and enter the difference in a symmetrical pattern below the contingency table. These differences mus sum to zero in each row and in each column.

Step 6   Enter the square of the difference over the expected frequency $\frac{(fo-fe)^2}{fe}$ in a symmetrical pattern below the differences.

Step 7   Divide the squared differences by the expected frequency and enter each quotient to the right of the expression. $\frac{(fo-fe)^2}{fe}$.

Step 8   Sum the quotient (6) to obtain the chi-square

(5)   8.8   -18   11

     -8   19   -10

(6) $\dfrac{77.44}{50.2}$ = 1.54 $\dfrac{324}{117}$ = 2.76 $\dfrac{121}{81}$ = 1.5

$\dfrac{64}{41}$ = 1.56 $\dfrac{100}{98}$ = 1.02 $\dfrac{100}{68}$ = 1.4

(7) $\left(X^2 \right)$ = 1.54 + 2.76 + 1.5 + 1.56 + 1.02 +1.4

= $\underline{9.78}$

326