



**Mi Universidad**

**Ensayo**

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*Nombre del tema varianza y asociacion*

*Parcial3*

*Nombre de la Materia Estadística inferencial*

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*Cuatrimestre Cuarto*

$$r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}}$$

$$\bar{x} = \frac{80 + 100 + 90 + 85 + 110 + 95}{6} = 93.33$$

$$\bar{y} = \frac{60 + 65 + 65 + 61 + 67 + 63}{6} = 63$$

X	Y	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})$	$(x_i - \bar{x})^2$	$(y_i - \bar{y})^2$
80	60	-13.33	-3	39.99	147.68	9
100	65	6.67	2	13.34	44.48	4
90	62	3.33	-1	-3.33	11.08	1
85	61	-8.33	-2	-16.66	69.38	4
110	67	16.67	4	66.68	277.88	16
95	63	1.67	0	0	2.78	0
				$\sum = 140$	583.28	$\sum = 34$

$$583.28 \times 34$$

$$19,831.52$$

$$\sqrt{19,831.52}$$

$$140.82$$

- Relación Positiva
- Positiva

$$\frac{140}{140.82} = 0.994176933$$

$$\hat{y} = B_0 + B_1 x$$

$$B_1 = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sum (x_i - \bar{x})^2}$$

- Relación Positiva
- Positiva

$$B_0 = \bar{y} - B_1 \bar{x} \quad b_1 = \frac{140}{583} = 0.24$$

$$63 = 0.24$$

$$b_0 = \frac{63 - 0.24(93.33)}{1} = 63 - 22.39$$

$$b_0 = 40.61$$

$$y = 40.61 + 0.24x$$

$$40.61 + 0.24(80) = 59.81$$

$$40.61 + 0.24(100) = 64.61$$

Ejercicio 2

$i$	$x_i$	$y_i$	$x_i - \bar{x}$	$(y_i - \bar{y})$	$(x_i - \bar{x})^2$	$(y_i - \bar{y})^2$	$(x_i - \bar{x})(y_i - \bar{y})$
1	2.0	0.5	-0.367	-0.15	0.135	0.0225	-0.055
2	2.5	0.7	0.133	0.25	0.0177	0.0625	0.03375
3	1.8	0.4	-0.567	0.25	0.3214	0.0625	-0.14175
4	3.0	0.9	0.633	0.25	0.4006	0.0625	0.15825
5	2.2	0.6	-0.167	-0.05	0.0278	0.0025	-0.00835
6	2.7	0.8	0.333	0.15	0.1109	0.0225	0.04995
	$\bar{x} = 2.4$	$\bar{y} = 0.6$	$\sum (x_i - \bar{x}) = 0$	$\sum (y_i - \bar{y}) = 0$	$\sum (x_i - \bar{x})^2 = 1.03389$	$\sum (y_i - \bar{y})^2 = 0.1775$	$\sum (x_i - \bar{x})(y_i - \bar{y}) = 0.4025$

$$r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}} = \frac{0.4025}{\sqrt{1.03389 \cdot 0.1775}} = 0.4025$$

- Es rechazada
- Es parcia por que es 0.9

$$r = \frac{0.4025}{0.4283} = 0.9391$$

Ejercicio 3

	vegetales	prote	CH	total
Masculin	12	18	10	40 - fila
Femenino	15	12	13	40
total	27	30	23	80 - total muestra

$$fA = \frac{(\text{total fila}) (\text{total columna})}{\text{total muestra}}$$

$$fA = \frac{40 (27)}{80} = \frac{1080}{80} = 13.5$$

$$fA = \frac{40 (30)}{80} = \frac{1200}{80} = 15$$

$$fA = \frac{40 (23)}{80} = \frac{920}{80} = 11.5$$



$$(O_1 - E_1) = (12 - 13.3) = (-1.3)^2 = \frac{1.69}{13.3} = \underline{0.127067}$$

$$(18 - 15) = (3)^2 = \frac{9}{15} = \underline{0.6} = \underline{0.04}$$

$$(10 - 11.5) = (-1.5)^2 = \frac{2.25}{11.5} = 0.19565$$

$$(15 - 13.3) = (1.7)^2 = \frac{2.89}{13.3} = 0.217293$$

$$(12 - 15) = (3)^2 = \frac{9}{15} = \underline{0.6} = 0.04$$

$$(13 - 11.5) = (1.5)^2 = \frac{2.25}{18.5} = 0.12162$$

$$\chi^2 = \underline{1.9289} + 0.04 + 0.19565 + 0.217293 + 0.04 + 0.12162 = 2.603113$$

$(13 - 11.5)^2 = (1.5)^2 = 2.25 = 0.09$   
 $(17.5)^2 = 306.25 = 0.9569$   
 $\chi^2 = 1.9289$

Sub	20	15	5	40
Hog	10	20	15	50
Hog	5	20	25	50
Total	35	60	45	140

$PA = 40 \frac{(35)}{140} = 10$   
 $PA = 40 \frac{(60)}{140} = 17.14$   
 $PA = 40 \frac{(45)}{140} = 12.857$

$PA = 50 \frac{(25)}{140} = 12.5$   
 $PA = 50 \frac{(60)}{140} = 21.42$   
 $PA = 50 \frac{(45)}{140} = 16.07$

$(\frac{25-10}{10})^2 + (\frac{15-17.14}{17.14}) + (\frac{5-12.857}{12.857})^2$   
 $(\frac{10-12.5}{12.5})^2 + (\frac{20-21.42}{21.42}) + (\frac{25-16.07}{16.07})^2$   
 $\chi^2 = 10 + 0.267 + 4.80 + 0.5 + 0.848 + 0.09$

(10 emol) (10 emol) (10 emol)

$4.05 + 0.09 + 4.9 = 25.725$   
 se rechaza  $H_0$  se acepta.