



INSTITUTO PRIVADO MIXTO
"RAFAEL ARÉVALO MARTÍNEZ"

3a. Avenida 10-59 zona 4, Barrio Colombita
COATEPEQUE, QUETZALTENANGO
Teléfonos 77756123 - 77756124

Nombre del alumno – a: Silvia Victorina Escobar Méndez

Área: Estadística Aplicada a la Educación

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Catedrático: Fredy Barrios

IMAGEN 1

Table 4

X	Y	$X - \bar{X}$	$Y - \bar{Y}$	$(X - \bar{X})^2$	$(Y - \bar{Y})^2$	$(X - \bar{X})(Y - \bar{Y})$
9	8	2.5	0.67	6.25	0.0449	1.675
8	7	1.5	-0.33	2.25	0.1089	-0.495
7	8	0.5	0.67	0.25	0.0449	0.335
6	10	-0.5	2.67	0.25	7.1289	-1.335
5	8	-1.5	0.67	2.25	0.0449	-0.995
4	6	-2.5	-0.33	6.25	0.1089	0.825
		11.5	8.3334	2.5		

$$\bar{X} = \frac{\sum X}{n} = \frac{39}{6} = 6.5$$

$$\bar{Y} = \frac{\sum Y}{n} = \frac{47}{6} = 7.83$$

$$S_x = \sqrt{\frac{\sum (X - \bar{X})^2}{n-1}} = \sqrt{\frac{17.5}{5}} = \sqrt{3.5} = 1.87$$

$$S_y = \sqrt{\frac{\sum (Y - \bar{Y})^2}{n-1}} = \sqrt{\frac{8.334}{5}} = \sqrt{1.666} = 1.329$$

$$r^2 = \frac{2.5}{5(1.87)(1.33)} = \frac{2.5}{12.4255} = 0.2010$$

$$Co = (0.2010)^2 \times 100 = 0.040 \times 100$$

$$Co = 4.0401\%$$

X	Y	X-X̄	Y-Ȳ	(X-X̄) ²	(Y-Ȳ) ²	(X-X̄)(Y-Ȳ)
3	4	-1.25	-5.25	3.0625	27.5625	9.1875
4	10	0.25	0.75	0.5625	0.5625	-0.5625
5	11	0.25	1.75	0.0625	3.0625	0.4375
7	12	2.25	2.75	5.0625	7.5625	10.1875

$$\sum (X-X̄)^2 = 19 = 4.75$$

$$\sum (Y-Ȳ)^2 = 38 = 9.25$$

$$s_x = \sqrt{\frac{\sum (X-X̄)^2}{n-1}} = \sqrt{\frac{19}{3}} = \sqrt{6.3333} = 2.5166$$

$$s_y = \sqrt{\frac{\sum (Y-Ȳ)^2}{n-1}} = \sqrt{\frac{38}{3}} = \sqrt{12.6667} = 3.5593$$

$$r = \frac{\sum (X-X̄)(Y-Ȳ)}{3(s_x)(s_y)} = \frac{15.25}{3(2.5166)(3.5593)} = 0.8284$$

$$r^2 = (0.8284)^2 \cdot 100 = 0.6862 \cdot 100 = 68.62\%$$