



EJERCICIOS DE CORRELACIÓN

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Las estaturas y pesos de 10 jugadores de baloncesto de un equipo son:

Estatura	Peso	$x \cdot y$	x^2	y^2
186	85	15810	34596	7225
189	85	16065	35721	7225
190	86	16340	36100	7396
192	90	17280	36864	8100
193	87	16791	37249	7569
193	91	17563	37249	8281
198	93	18414	39204	8649
201	103	20703	40401	10609
203	100	20300	41209	10000
205	101	20705	42025	10201
1950	921	179971	380618	85255

1.- El coeficiente de correlación que existe

$$1.- SC_x = \sum x^2 - \frac{(\sum x)^2}{n} = SC_x = 380618 - \frac{(1950)^2}{10} = \frac{3802500}{10}$$

$$SC_x = 380618 - 380250 = 368$$

$$SC_x = 368$$

$$2.- SC_y = \sum y^2 - \frac{(\sum y)^2}{n} = 85255 - \frac{(921)^2}{10} = \frac{848241}{10} = 84824.1$$

$$SC_y = 85255 - 84824.1 = 430.9$$

$$SC_y = 430.9$$

$$3.- SC_{xy} = \sum xy - \frac{(\sum x)(\sum y)}{n} = 179971 - \frac{(1950)(921)}{10} = 179595$$

$$SC_{xy} = 179971 - 179595 = 376$$

$$SC_{xy} = 376$$

$$4.- r = \frac{SC_{xy}}{\sqrt{SC_x} \sqrt{SC_y}} = \frac{376}{\sqrt{368} \sqrt{430.9}} = \frac{376}{398.20} = 0.94$$

$$r = 0.94$$

② Datas

$$1 - b_1 = \frac{SC_{xy}}{SC_x} = \frac{3764}{368} = b_1 = 1.02$$

$$SC_x = 368$$

$$SC_y = 430.9$$

$$SC_{xy} = 3764$$

$$2 - \bar{x} = 195 \quad \bar{y} = 92.1$$

$$3 - b_0 = \bar{y} + b_1 \times \bar{x} =$$

$$b_0 = 92.1 - 1.02 \times 195 =$$

$$b_0 = 92.1 - 198.9 \quad b_0 = -106.8$$

③ $MRL \hat{y} = b_0 + b_1 \times \hat{x}$

$$MRL \hat{y} = -106.8 + 1.02 \times 208$$

$$-106.8 + 212.16 = 105.36 \text{ kg}$$

$$MRL \hat{x} = \frac{\hat{y} - b_0}{b_1}$$

$$MRL \hat{x} = \frac{188 - (-106.8)}{1.02} = \frac{194.8}{1.02}$$

$$MRL \hat{x} = 190.9 \text{ cm}$$

Bibliografía

Ejercicios elaborados en clase