

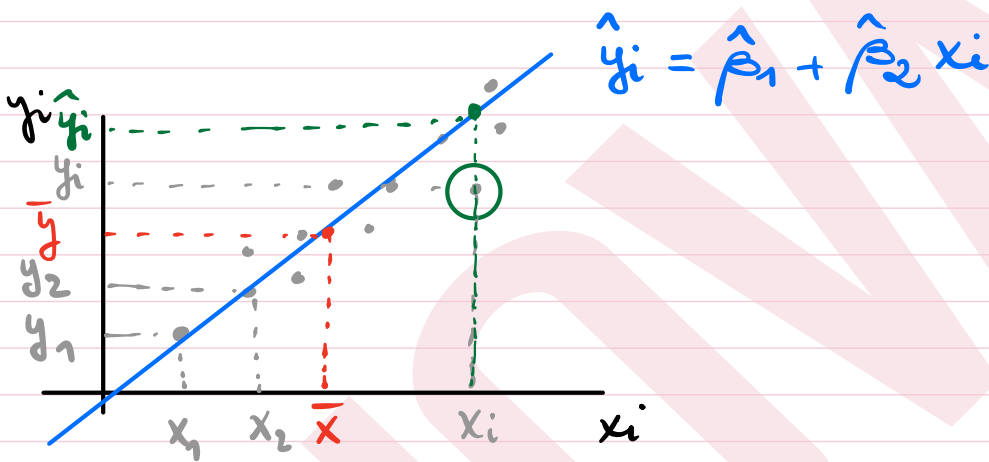
MODELO DE REGRESIÓN LINEAL SIMPLE

MRLS : $y_i = \beta_1 + \beta_2 x_i + u_i$

u_i → término de perturbación

x_i → variable explicativa o exógena

y_i → variable explicada o variable endógena



Estimadores

Pendiente : $\hat{\beta}_2 = \frac{S_{xy}}{S_x^2}$

Ordenada : $\hat{\beta}_1 = \bar{y} - \hat{\beta}_2 \bar{x}$

$\hat{y}_i = \hat{\beta}_1 + \hat{\beta}_2 x_i$

Error de predicción : $e_i = y_i - \hat{y}_i$

* COEFICIENTE DE CORRELACIÓN LINEAL SIMPLE

$$r_{xy} = \frac{S_{xy}}{S_x \cdot S_y} \quad [-1, 1]$$

$S_{xy} = 0 \Rightarrow$ No existe Relación Lineal	
$S_{xy} \neq 0 \Rightarrow$ Existe Relación Lineal	
$\hookrightarrow \left\{ \begin{array}{l} S_{xy} > 0 \rightarrow \text{R.L. +} \\ S_{xy} < 0 \rightarrow \text{R.L. -} \end{array} \right.$	

$r_{xy} \rightarrow$ mide la intensidad de relación lineal

$S_{xy} = 0 \rightarrow r_{xy} = 0 \rightarrow$ No existe R.L

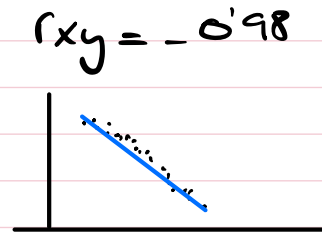
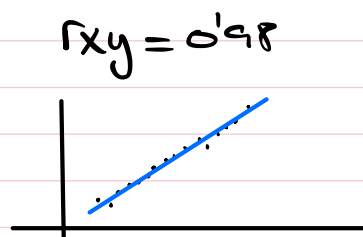
$S_{xy} > 0 \rightarrow r_{xy} > 0$

$S_{xy} < 0 \rightarrow r_{xy} < 0$

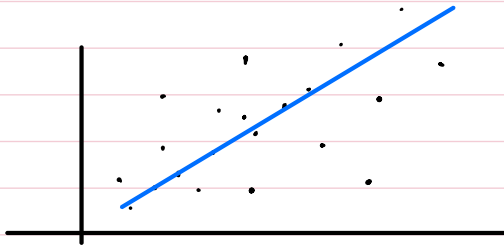
r_{xy}

- $\rightarrow -1 \rightarrow$ Relación lineal intensa negativa
- $\rightarrow 0 \rightarrow$ Relación lineal muy poca intensa
- $\rightarrow +1 \rightarrow$ Relación lineal intensa positiva

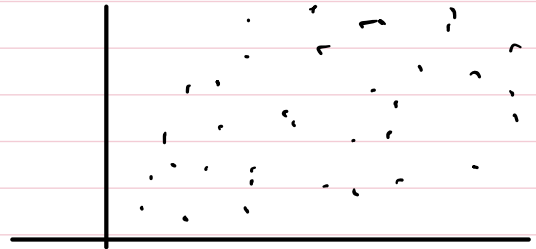
Ejemplos:



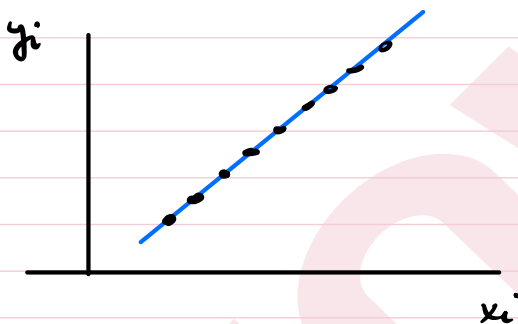
$$r_{xy} = 0'23$$



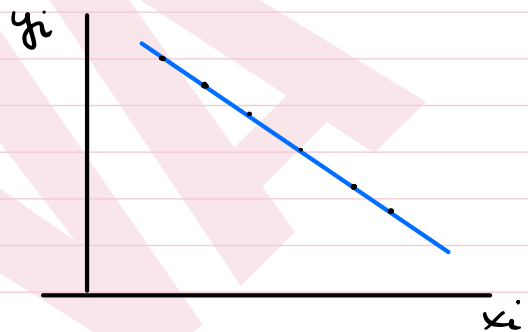
$$r_{xy} = 0'02$$



$$r_{xy} = 1$$



$$r_{xy} = -1$$



* COEFICIENTE DE DETERMINACIÓN O BONDAD DE AJUSTE

$$R^2 = (r_{xy})^2 \quad [0, 1]$$

$$R^2 (\%)$$

↳ la explicación de la variable exógena (x_i)
sobre la endógena (y_i)

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