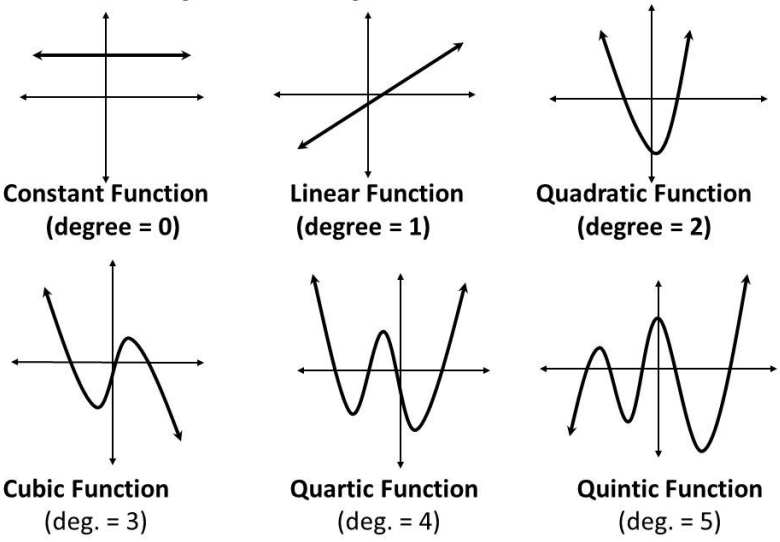
Multiple Linear Regression Equations

1

Graphs of Polynomial Functions:



Constant Function (degree = 0)

Linear Function (degree = 1)

Quadratic Function (degree = 2)

Cubic Function (deg. = 3)

Quartic Function (deg. = 4)

Quintic Function (deg. = 5)

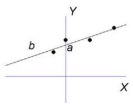
2

O que é correlação?

Linear regression equation
(without error)

$$\hat{Y} = bX + a$$

predicted values of Y | b = slope = rate of predicted ↑/↓ for Y scores for each unit increase in X | Y-intercept = level of Y when X is 0

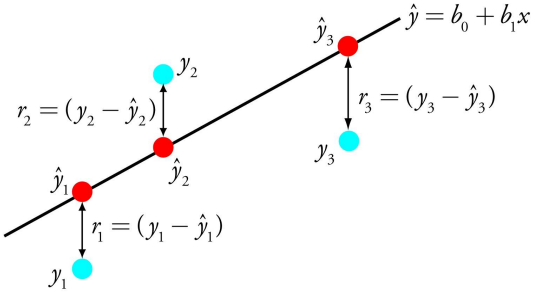


Simple Linear Regression Model

Dependent Variable | Population Y intercept | Population Slope Coefficient | Independent Variable | Random Error term

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i$$

Linear component | Random Error component



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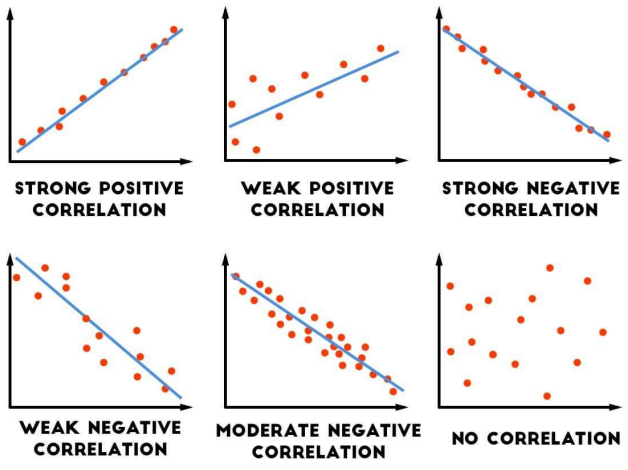
CORRELATION

(INDICATES THE RELATIONSHIP BETWEEN TWO SETS OF DATA)

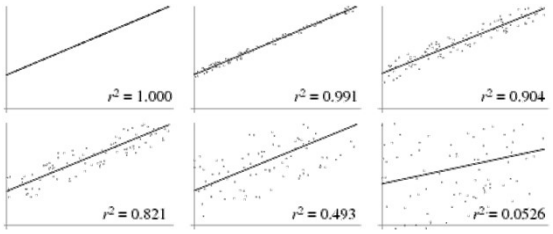


At Pinterest

4

Correlação de Pearson, r

$$r = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\left[\sum_{i=1}^{n}(x_i - \bar{x})^2\right]\left[\sum_{i=1}^{n}(y_i - \bar{y})^2\right]}}$$



Correlation Coefficient -- from Wolfram MathWorld

Use como R2. Literalmente calculado como o quadrado de r: Provê a proporção de variância compartilhada entre IV e DV

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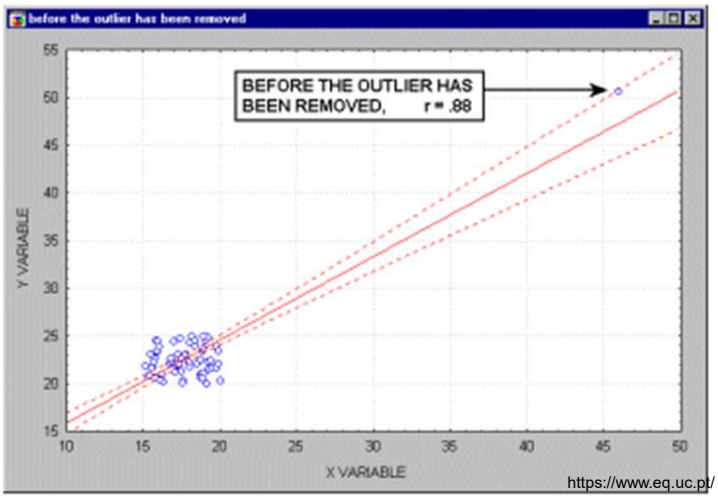
"Outliers": ponto fora da curva

(ponto situado fora ou separado do corpo ou sistema principal)



https://www.eq.uc.pt/

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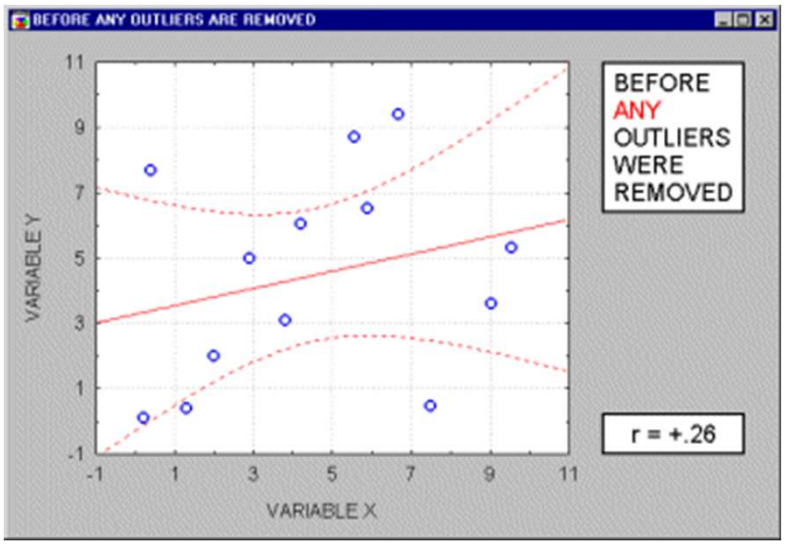
Remoção de “outliers”



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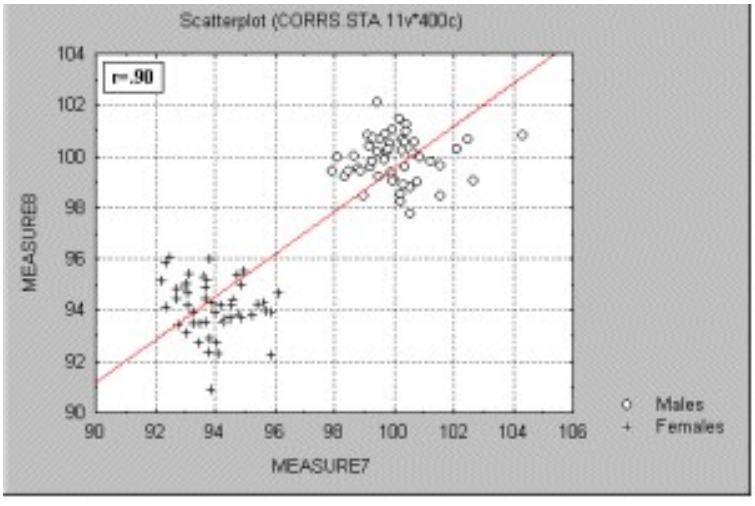
Correlação em grupos não-homegêneos



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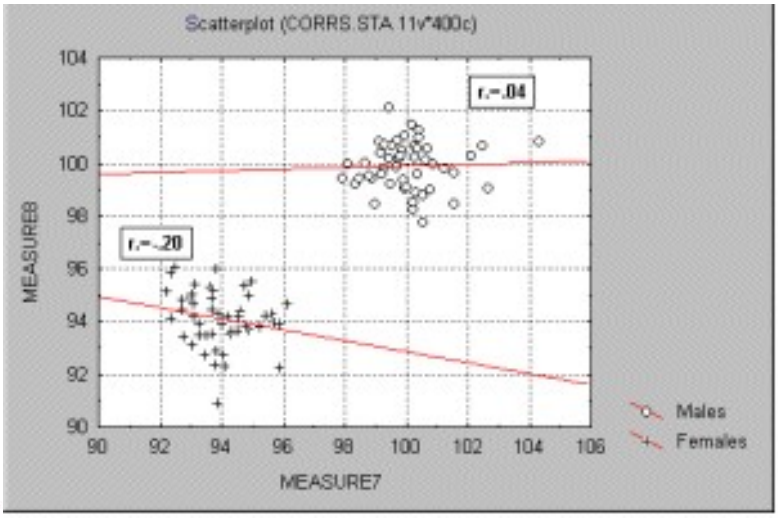
Representação da correlação "verdadeira"



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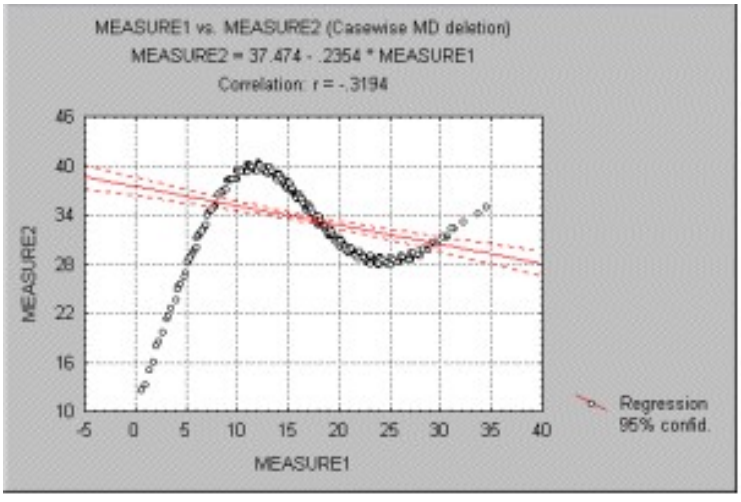
Relações não-lineares entre variáveis



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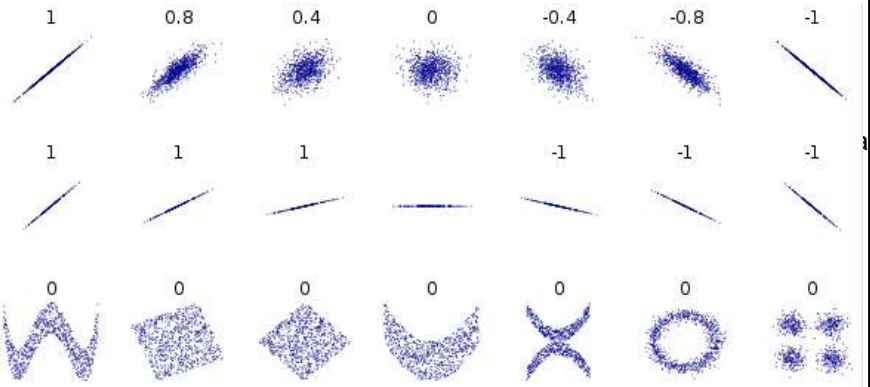
Pré-qualificações: gráfico de dispersão



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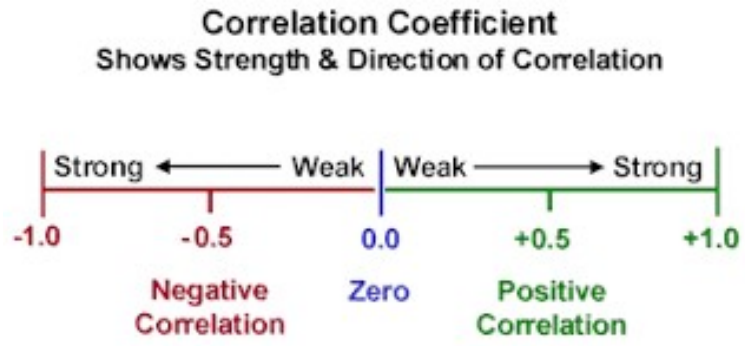
Correlações



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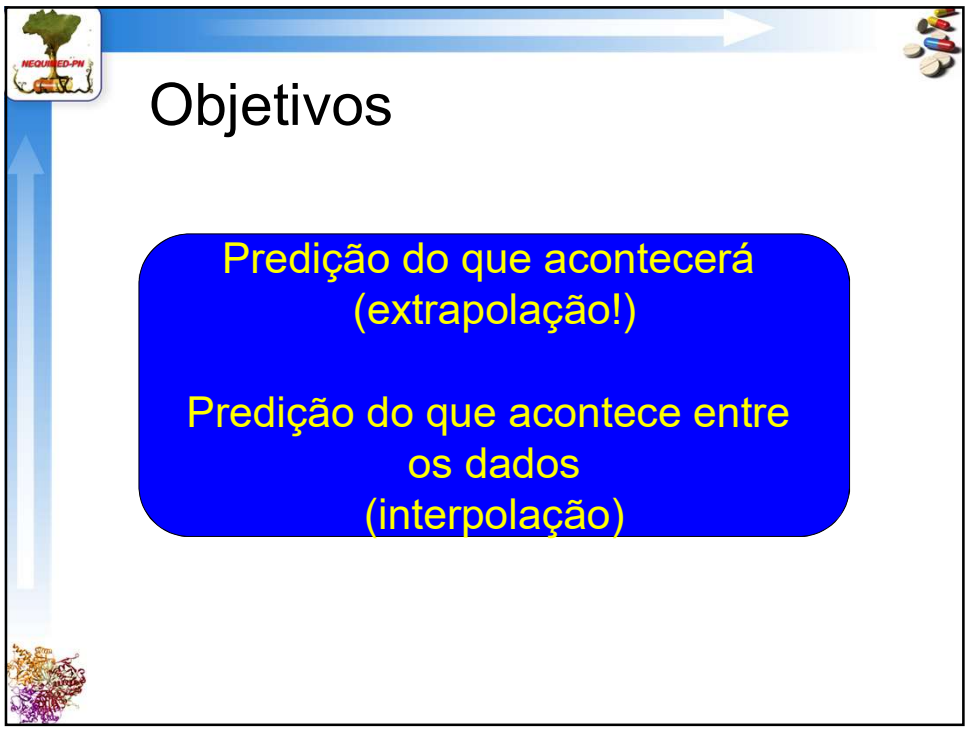
Objetivos
Predição do que acontecerá (extrapolação!)
Predição do que acontece entre os dados (interpolação)

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