This correlation.

Time: 6:30 pm

Today: LN 11

Next time: ANOVA

\[ r(x, y) = r(y, x) \]
\[ r(x, x) = +1 \]

\[ \rho = 0.16 \]

\[ 0.87 \pm 2(0.08) = (0.71, 1.0) \]

Approx. 95% CI:

\[ p \]

Stats:

\[ 0.71 \]
\[ 0.87 \]
\[ 1.03 \]
\[ 1.0 \]

L-245 Regression

Regression effect

Regression to the mean
\[ y = \beta_0 + \beta_1 x \]

predicted est.

\[ \hat{y} = \hat{\beta}_0 + \hat{\beta}_1 x \]

est. slope

\[ \hat{\beta}_1 = r \cdot \frac{\hat{s}_y}{\hat{s}_x} \]

\[ \hat{\beta}_0 = \bar{y} - \hat{\beta}_1 \bar{x} \]

1890 Galton

UK

h = 1000 families

with at least one 50 cm

ht. of (x)
father

ht. of (x)
son

regression to mediocrity

\[ y = \hat{\beta}_0 + \hat{\beta}_1 x \]
Gauss (1800)

\[ y = \beta_0 + \beta_1 x \]

Find \((\hat{\beta}_0, \hat{\beta}_1)\) to minimize

\[ \sum_{i=1}^{n} \left( y_i - (\hat{\beta}_0 + \hat{\beta}_1 x_i) \right)^2 \]

\((\hat{\beta}_0, \hat{\beta}_1)\): least squares line