

Bivariate Regression Formulas

General Form of Prediction Equation

Raw

$$Y' = \left(r \frac{S_y}{S_x} \right) X - \left(r \frac{S_y}{S_x} \right) \bar{X} + \bar{Y}$$

Standard Score

$$Z'_y = rZ_x$$

Standard Error of Estimate

$$S_{yx} = \sqrt{\frac{\sum(Y - Y')^2}{n}} \quad S_{yx} = S_y \sqrt{1 - r^2}$$

Coefficient of Alienation (K)

$$K = \frac{S_{yx}}{S_y} \quad K = \sqrt{1 - r^2}$$

Coefficient of Determination

r^2

Z Using S_{yx} in Predicting Y From X

$$Z = \frac{Y_{True} - Y'}{S_{yx}}$$