# Fehner correlation @ model

(1) $$\rho_F(x, y) = \frac{1}{n}\sum_{i=1}^{n} \operatorname{sgn}(x_i - \bar{x}) \cdot \operatorname{sgn}(y_i - \bar{y}) = \frac{C - H}{C + H}$$

where $C + H = n$ and

$C = \sum_{i \neq j} \{\operatorname{sgn}(\mathrm{x_i} - \bar{\mathrm{x}}) = \operatorname{sgn}(\mathrm{y_i} - \bar{\mathrm{y}})\}$ — number of pairs with the same sign of deviation from the mean value

$H = \sum_{i \neq j} \{\operatorname{sgn}(\mathrm{x_i} - \bar{\mathrm{x}}) \neq \operatorname{sgn}(\mathrm{y_i} - \bar{\mathrm{y}})\}$ — number of pairs with the opposite sign of deviation from the mean value

The Kendall correlation coefficient is similar to Spearmen correlation coefficient in nature but sometimes has advantage by a more reliable pick up a correlation in noisy data.

## See also

Formal science / Mathematics / Statistics / Statistical correlation

[ Statistical correlation metrics @ review ] [ Pearson correlation ] [ Spearmen Correlation ] [ Kendall correlation ]