Correlation metrics	Robust and resistant	Description
Pearson's correlation coefficient (r)	No	Calculate the covariance of x and y, divided by the product of σ's of x and y.
Spearman's rho, or Spearman's rank correlation coefficient (r_s)	Yes	Transform x and y values into ranks within x and y themselves, then calculate the covariance of ranks in x and y, divided by the product of σ's of ranks in x and y.
Kendall's tau, or Kendall's rank correlation coefficient (τ)	Yes	Match all data pairs between x and y, with $\frac{n(n-1)}{2}$ matches possible with a sample size of n. Define concordant pair as both x_1 larger than x_2 and y_1 larger than y_2, or both x_1 smaller than x_2 and y_1 smaller than y_2. Define discordant pair as either x_1 larger than x_2 and y_1 smaller than y_2, or x_1 smaller than x_2 and y_1 larger than y_2. Calculate $\tau = \frac{2(\text{Concordant pairs} - \text{Discordant pairs})}{n(n-1)}$.