

Resistant Line

Tukey (1970, Chapter 10) proposed the three point resistant line as an data analysis tool for quickly fitting a straight line to bivariate data (x and y paired data.) The data are divided into three groups of approximately equal size and sorted on the x variable. The median points of the upper and lower groups are fitted to the middle group to form two slope lines. The resulting slope line is resistant to the effects of extreme scores of either x or y values and provides a quick exploratory tool for investigating the linearity of the data. The ratio of the two slope lines from the upper and lower group medians to the middle group median provides a quick estimate of the linearity which should be approximately 1.0 for linearity.