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Measuring skewness: A forgotten statistic?

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Summary: This paper discusses common approaches to presenting the topic of skewness in the classroom, and explains why students need to know how to measure it. Two skewness statistics are examined: the Fisher-Pearson standardized third moment coefficient, and the Pearson 2 coefficient that compares the mean and median. The former is reported in statistical software packages, while the latter is all but forgotten in textbooks. Given its intuitive appeal, why did Pearson 2 disappear? Is it ever useful? Using Monte Carlo simulation, tables of percentiles are created for Pearson 2. It is shown that while Pearson 2 has lower power, it matches classroom explanations of skewness and can be calculated when summarized data are available. This paper suggests reviving the Pearson 2 skewness statistic for the introductory statistics course because it compares the mean to the median in a precise way that students can understand. The paper reiterates warnings about what any skewness statistic can actually tell us.

Classification: K45 K75

Keywords: Monte Carlo methods; statistics; visual aids; computer software; textbooks; statistical analysis
<http://www.amstat.org/publications/jse/v19n2/doane.pdf>