Reasons for Teaching and Using the Signed Coefficient of Determination instead of the Correlation Coefficient
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Abstract:

The correlation coefficient has many different definitions and formulas, but in regard to the strength of correlation, no mathematically rigorous meaning can be inferred from any of them. On the other hand, the coefficient of determination (the square of the correlation coefficient) has mathematically rigorous meaning that is easily understood from its definitions and formulas. From an historical and theoretical view, a signed version of the coefficient of determination is a better choice than the correlation coefficient for the teaching and measurement of simple linear correlation.

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