

Review of: "Decoding the Correlation Coefficient: A Window into Association, Fit, and Prediction in Linear Bivariate Relationships"

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Potential competing interests: No potential competing interests to declare.

The work is missing mathematical apparatus. In fact, there are no mathematical equations used. It is hardly to follow a concept which was clearly defined mathematically (a coefficient between -1 and 1 - for correlation, and between 0 and 1 for determination; and defined explicitly to fit into this range) without mathematical apparatus.

Also some parts of the manuscript (especially without involving mathematical equations) can be misleading. Take for instance the connection between the correlation coefficient and the regression coefficient. This sort of link between the two entities exists but in certain conditions which needs to be clearly stated (to be more clear, regression is $y = a*x + b$, but also $y = a + b*x$ and $y = b*x$ as well). Looking at the references it is clear for me that the author was inspired by one paper and one paper alone (doi 10.1080/00031305.1988.10475524). I suggest the author to expand a little more its perspective on the correlation and correlation coefficients. Take for instance [Pearson versus Spearman, Kendall's Tau correlation analysis on structure-activity relationships of biologic active compounds](#), How good can the characteristic polynomial be for correlations?, and Distributing correlation coefficients of linear structure-activity/property models, to cite only three of my studies on different aspects of correlation coefficients use.