Common statistical analysis Errors: Measures of agreement

Rachel Sandners*

Editorial Office, Statistical and Mathematical Science, India

EDITORIAL

*For Correspondence

Rachel Sandners, Editorial Office, Statistical and Mathematical Science, India

E-mail: rachel.sr011@gmail.com

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The extent of conformity across two (or more) sets of data is referred to as measurement agreement. To examine inter-rater variability or determine if one methodology for measuring a variable may replace another, quantitative tools for testing agreements are now used. Frequently, people want to know if measurements taken by two (or more) distinct observers or using two different procedures generate similar results. This is referred to as measured agreement, congruence, or repeatability. This type of analysis looked at pairings of measures, either categorized or quantitative, that were taken on the same person.

On the surface, these images need to be suitable to analysis utilising correlate approaches, which we have addressed before in this series. However, a closer examination reveals that this is not the case. The two definitions on each subject in those approaches pertain to distinct variables, but the two measures in the "agreement" aware to the same parameter.

The quantitative tests used to assess accord vary depending the the nature of variable being researched and the amount of individuals under which consistency is being sought. The summarises these findings, which are explored further down.

Types of variables	Number of observations	Used methods
Categorical (nomial)	2	Cohen's kappa
Categorical (ordinal)	2	Weighted kappa
Continuous	2 or more than two	Intra class coefficients

POINTS TO REMEMBER

Correlation versus agreement

As previously stated, correlation does not imply agreement. The appearance of a partnership between various variables is referred to as similarity, whilst the concordance among both two parameters of one variable is referred to as pact. Two correlation coefficient sets of predictions may have poverty stricken contract; that being said, if the six viewpoints concur, those who are almost certainly highly correlated. So if the signed between the two ways is weak in the haemoglobin example, the correlation coefficient between the three methodologies is high. Another way to look at it is that, while the individual dots are not very near to the dashed lines, they are a long way from the completely black line, which depicts the boundary of absolute alignment.

Use of paired test to determine agreement

There would be no difference if McNemar's test was used. This, unfortunately, cannot be construed as evidence of agreement.

Because the McNemar's study tested overall ratios, any circumstance in which the two inspectors' forming large for ride is similar will result in a lack of variation. The paired - samples t, on the other hand, compares the mean differences between the two samples in a group. Even if the discrepancies between time measured for individuals are high, it can be moderate if the mean distance between the paired results is minimal.