
From: Nelson, Bettie L
Sent: Tuesday, July 08, 2003 2:21 PM
To: Liang, Qiwei; Sarkar, Mohamadi; Roethig, Hans; Unverdorben, Martin; Mendes, Paul; Kinser, Robin D.; Zedler, Barbara
Subject: RE: aa01564
Sensitivity: Confidential
DSS: ?

Are we concerned with the direction of the correlation? If so, R-square would not provide us with any information on direction.

With best regards,

Bettie

(804) 274-1502

(804) 334-5923 (Cellular)

(804) 274-3982 (Fax)

-----Original Message-----

From: Liang, Qiwei
Sent: Monday, July 07, 2003 10:32 AM
To: Sarkar, Mohamadi; Roethig, Hans; Unverdorben, Martin; Mendes, Paul; Kinser, Robin D.; Nelson, Bettie L; Zedler, Barbara
Subject: RE: aa01564
Sensitivity: Confidential

Dear Mohamadi,

Thank you very much for your input.

In a simple linear regression, R-square tells us the proportion of the variability on y that can be explained by the variability of x. It is a measure of the quality of the model fit. But as **R-square is the square of the correlation coefficient**, it can also be considered as a measure of correlation between x and y.

Even the "best" regression line can miss some data points. With R-square=0.999, the overall fit of the regression line is very good and the linear relationship between x and y can be considered as very strong. In cases when a linear regression does not fit the data points well, a nonlinear model can be used.

It is true that a regression model is only good for the range of the data. But MDS does not intend to extrapolate the results.

Best regards,

Qiwei

-----Original Message-----

From: Sarkar, Mohamadi
Sent: Monday, July 07, 2003 8:19 AM
To: Liang, Qiwei; Roethig, Hans; Unverdorben, Martin; Mendes, Paul; Kinser, Robin D.; Nelson, Bettie L; Zedler, Barbara
Subject: RE: aa01564
Sensitivity: Confidential

Dear Qiwei,

As you very well know that r-squared values are meaningless in studying correlations, e.g. it is possible to have a r-squared value of 0.999 but the predictability of the regression equation is very poor at the extreme end, usually the lowest concentrations. Therefore we normally use RSD to evaluate a linear relationship. The r-square is only good for the range of the data that were used in the analyses.

In our case it is a stretch to assign such a score because people might over-interpret because after all we should ask the question why are we performing this regression analysis? Usually this is to study the "dose-response" relationship and in order to determine the variability. I propose that we should stay away from such scoring systems.

Sincerely,

Mohamadi Sarkar

-----Original Message-----

From: Liang, Qiwei

Sent: Thursday, July 03, 2003 4:56 PM

To: Roethig, Hans; Unverdorben, Martin; Mendes, Paul; Kinser, Robin D.; Nelson, Bettie L; Sarkar, Mohamadi; Zedler, Barbara

Subject: FW: aa01564

Sensitivity: Confidential

FYI

My suggestion to Nancy will be: "It is fine, but please always provide the R-square value in a parenthesis". Let me know if you think differently.

Best regards,

Qiwei

-----Original Message-----

From: Nancy Wang 437-4850 [mailto:Nancy.Wang@mdsps.com]

Sent: Thursday, July 03, 2003 4:46 PM

To: qiwei liang

Subject: FWD: aa01564

Sensitivity: Confidential

Hi, Qiwei:

Would you please take a look at the suggestions by our PKist on describing correlations in the attached e-mail? Please let me know what you think.

Thanks.

Nancy