University of Essex

Online

Simple Linear Regression Transcript

Here are the equations for the population and sample models, as well as the error of prediction

The error of prediction for a point is the observed value of the point minus the predicted value. (The predicted value is the value on the regression line.) This table shows the predicted values (Y prime) and the errors of prediction (Y- Y prime). For example, the first point has an observed Y of 1.00 and a predicted Y of 1.21. Therefore, its error of prediction is -0.21. You may have noticed that we did not specify what is meant by "best fitting line." By far the most commonly used criterion for the best fitting line is the line that minimizes the sum of the squared errors of prediction. That is the criterion that was used to find the line in the figure shown previously. The last column in this table shows the squared errors of prediction. The sum of the squared errors of prediction shown in this table is lower than it would be for any other regression line.

The equation for the regression line for the data we have been discussing is shown here. The predicted scores for X = 1 and X = 2 are shown to be 1.210 and 1.635 respectively.