Applied Statistics Handbook

Table of Contents | Purchase Info

Adjusted R^2

Adjusted R^2 is used to compensate for the addition of variables to the model. As more independent variables are added to the regression model, unadjusted R^2 will generally increase but there will never be a decrease. This will occur even when the additional variables do little to help explain the dependent variable. To compensate for this, adjusted R^2 is corrected for the number of independent variables in the model. The result is an adjusted R^2 than can go up or down depending on whether the addition of another variable adds or does not add to the explanatory power of the model. Adjusted R^2 will always be lower than unadjusted.

It has become standard practice to report the adjusted R^2, especially when there are multiple models presented with varying numbers of independent variables.

$$\bar{R}^2 = \left(R^2 - \frac{k}{n-1}\right)\left(\frac{n-1}{n-k-1}\right)$$

$$\bar{R}^2 = \left(.948 - \frac{2}{5-1}\right)\left(\frac{5-1}{5-2-1}\right) \qquad \bar{R}^2 = (.948 - .50)(2) \qquad \bar{R}^2 = .896$$