# Adjusted R Squared

$$R^2 = 1 - \frac{SS_{res}}{SS_{tot}}$$

$R^2$ – Goodness of fit
(greater is better)

Problem:

$\hat{y} = b_0 + b_1X_1 + b_2X_2$ ← $+ b_3X_3$

$$SS_{res} = SUM(y_i - \hat{y}_i)^2$$

$SS_{tot}$ doesn't change
$SS_{res}$ will decrease or stay the same *(This is because of Ordinary Least Squares: $SS_{res}$-> Min)*

Solution:

$$Adj\ R^2 = 1 - (1 - R^2) \times \frac{n - 1}{n - k - 1}$$

k – number of independent variables
n – sample size