

Linear regression model

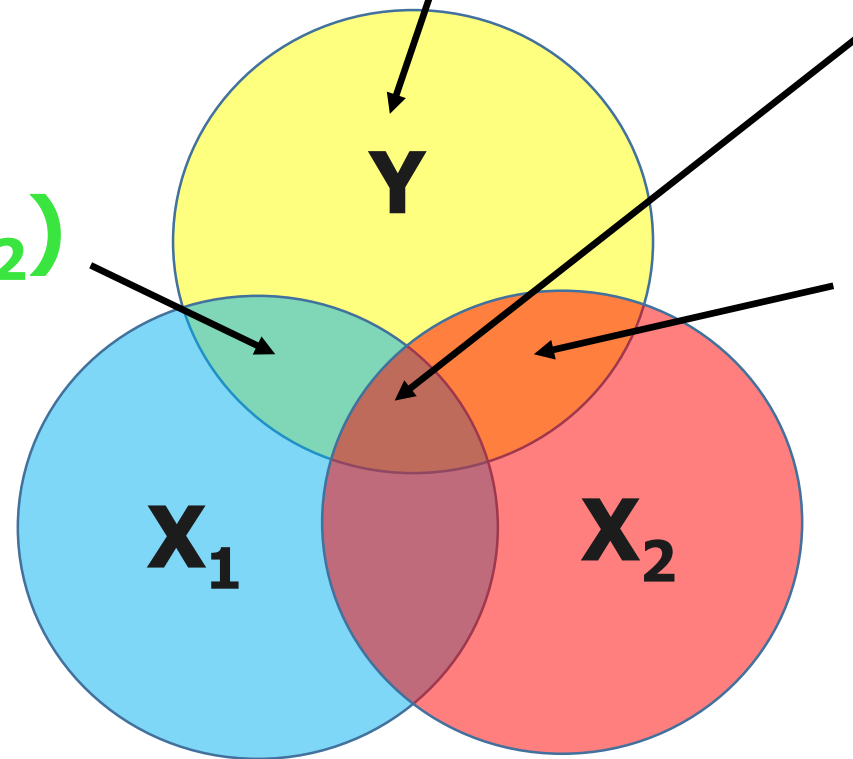
$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + u$$

$$D = \text{RSS}(X_1, X_2)$$

$$A = \text{ESS}(X_1 | X_2)$$

C = 'COMMON VARIATION'

$$B = \text{ESS}(X_2 | X_1)$$



$$\text{TSS}(Y) = A + B + C + D$$

COEFFICIENT OF DETERMINATION:
$$R^2(X_1, X_2) = \frac{A + B + C}{A + B + C + D}$$