

Oaxaca på CLASS

juli 2017

Oaxaca

m står for males f står for females.

$$y_i^m = \alpha^m + \beta^m x_i^m \quad i = 1, 2, 3, \dots, n_1$$

$$y_i^f = \alpha^f + \beta^f x_i^f \quad i = 1, 2, 3, \dots, n_2$$

$$\sum_{i=1}^{n_1} y_i^m = \sum_{i=1}^{n_1} \alpha^m + \beta^m \sum_{i=1}^{n_1} x_i^m \quad \text{der er summeret over de } n_1 \text{ males}$$

$$\sum_{i=1}^{n_2} y_i^f = \sum_{i=1}^{n_2} \alpha^f + \beta^f \sum_{i=1}^{n_2} x_i^f \quad \text{der er summeret over de } n_2 \text{ females}$$

$$\bar{y}^m = \alpha^m + \beta^m \bar{x}^m \quad \bar{y}^m = \frac{1}{n_2} \sum_{i=1}^{n_2} y_i^m \quad \bar{x}^m = \frac{1}{n_2} \sum_{i=1}^{n_2} x_i^m$$

$$\bar{y}^f = \alpha^f + \beta^f \bar{x}^f \quad \bar{y}^f = \frac{1}{n_1} \sum_{i=1}^{n_1} y_i^f \quad \bar{x}^f = \frac{1}{n_1} \sum_{i=1}^{n_1} x_i^f$$

$\bar{y}^m = \alpha^m + \beta^m \bar{x}^m$ gennemsnit for males udtrykt ved modellen

$\bar{y}^f = \alpha^f + \beta^f \bar{x}^f$ gennemsnit for females udtrykt ved modellen

$\bar{y}^m - \bar{y}^f = \alpha^m - \alpha^f + \beta^m \bar{x}^m - \beta^f \bar{x}^f$ = gabet

$\bar{y}^m - \bar{y}^f = (\alpha^m - \alpha^f) + \beta^m \bar{x}^m + \beta^m \bar{x}^f - \beta^m \bar{x}^f - \beta^f \bar{x}^f$

$\bar{y}^m - \bar{y}^f = (\alpha^m - \alpha^f) + (\beta^m \bar{x}^f - \beta^f \bar{x}^f) + (\beta^m \bar{x}^m - \beta^m \bar{x}^f)$

$\bar{y}^m - \bar{y}^f = (\alpha^m - \alpha^f) + \bar{x}^k (\beta^m - \beta^f) + \beta^m (\bar{x}^m - \bar{x}^f)$

$\bar{y}^m - \bar{y}^f =$	uforklaret +	$+\beta^m (\bar{x}^m - \bar{x}^f)$
"gabet"=	uforklaret	+ forklaret

18,838 =	uforklaret	+ 3,91*(63,91-60,59)
----------	------------	----------------------

18,838 =	5,844	+ 12,994
----------	-------	----------

hvis vi udvider modellen med en ekstra forklarende variabel

$$y_i^m = \alpha^m + \beta^m x_i^m + \gamma^m z_i^m \quad i = 1, 2, 3, \dots, n_1$$

$$y_i^f = \alpha^f + \beta^f x_i^f + \gamma^f z_i^f \quad i = 1, 2, 3, \dots, n_2$$

$$\bar{y}^m - \bar{y}^f = \text{uforklaret} + \beta^m(\bar{x}^m - \bar{x}^f) + \gamma^m(\bar{z}^m - \bar{z}^f)$$

$$\text{gabet} = \text{uforklaret} + \beta^m(\bar{x}^m - \bar{x}^f) + \gamma^m(\bar{z}^m - \bar{z}^f)$$

gabet = uforklaret + hældningskoefficienter ganget på differencen af de forklarende variable.

Så vi skal bruge alle gennemsnit af de indgående variable + hældningskoefficienterne fra den ene gruppe i dette tilfælde m for males.

lidt diverse

$$y_i = \alpha + \beta x_i \quad i=1,2,3,\dots,n$$

$$\hat{\beta} = \frac{SAP_{xy}}{SAK_x} \quad \text{og} \quad \hat{\alpha} = \bar{y} - \hat{\beta}\bar{x}$$

$$\frac{1}{n} \sum_{i=1}^n \hat{\alpha} + \hat{\beta}x_i = \frac{1}{n} \sum_{i=1}^n \bar{y} - \hat{\beta}\bar{x} + \hat{\beta}x_i = \bar{y}$$