

3. استخدام  
النتيجة على  
output  
أكثر

15.6: using the estimated regression equation for estimation and prediction.

→ Model :  $y = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p + \varepsilon$

MLRE :  $E(y) = \beta_0 + \beta_1 x_1 + \dots + \beta_p x_p$

EMLE :  $\hat{y} = b_0 + b_1 x_1 + \dots + b_p x_p$

→ estimated Multiple linear regression equation :

on exp excel  $\hat{y} = -0.87 + 0.06 x_1 + 0.92 x_2$

→ Estimate / predict  $y$  when  $x_1 = 100$  and  $x_2 = 4$

$$\hat{y}(100, 4) = 8.81$$

→ one can find  $(1-\alpha)CI$  and  $(1-\alpha)PI$  . من مطلق نداء بنجاح مطلق

Exercises:

17.  $n=10$

$$\hat{y} = 29.127_0 + 0.5906 x_1 + 0.4980 x_2$$

a. develop a point estimator of the mean value of  $y$  when  $x_1 = 180$  and  $x_2 = 310$ .

$$\hat{y} = 29.127_0 + 0.5906(180) + 0.4980(310)$$

$$= 29.127_0 + 106.308 + 154.38$$

$$= 289.82$$

b. develop a point estimator for an individual value of  $y$  when  $x_1 = 180$  and  $x_2 = 310$ .