

DUMMY VARIABLES IN REGRESSION. PART II

$$E(Y) = \beta_0 + \beta_1 x_1 + \beta_2 x_2$$

If $x_1 = 0$ and $x_2 = 0$

$$E(Y) = \mu_A = \beta_0$$

If $x_1 = 1$ and $x_2 = 0$

$$E(Y) = \mu_B = \beta_0 + \beta_1$$

If $x_1 = 0$ and $x_2 = 1$

$$E(Y) = \mu_C = \beta_0 + \beta_2$$

$$\Rightarrow \left\{ \begin{array}{l} \beta_0 = \mu_A = 532 \\ \beta_1 = \mu_B - \mu_A = 8 \Rightarrow \mu_B = 8 + 532 = 540 \\ \beta_2 = \mu_C - \mu_A = 60.50 \Rightarrow \mu_C = 60.50 + 532 = 592.50 \end{array} \right.$$

ANOVA

$$H_0: \mu_1 = \mu_2 = \mu_3$$

H_a : At least two treatment means differ

Regression

$$H_0: \beta_1 = \beta_2 = 0$$

H_a : At least one of the β 's $\neq 0$