

Create the **model** from a given set of parameters

### Model

$$y_i = \beta_0 + \beta_1(x_i) + \epsilon_i$$
$$\epsilon_i \stackrel{i.i.d.}{\sim} \mathcal{N}(0, \sigma)$$

$$\beta_0 = 0.2 \quad \beta_1 = 0.5 \quad \sigma = 1$$

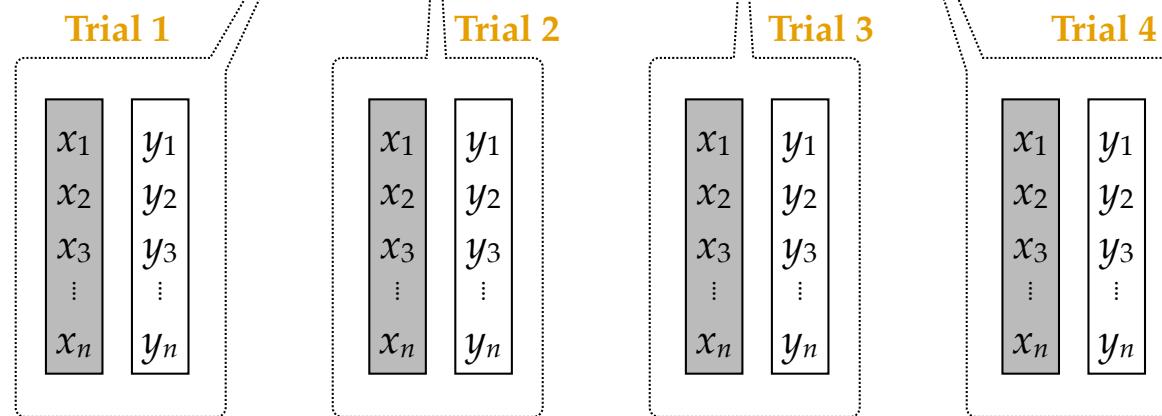
**Generate** observations from this model

In each trial of the simulation the  $x$ -values are the same and the  $y$ -values are generated using:

$$y_i \stackrel{i.i.d.}{\sim} \mathcal{N}(0.2 + 0.5x_i, 1)$$

**Collect** statistic(s) of interest from each trial

**Evaluate** the distribution of each statistic of interest (e.g., plot, compute mean, sd)



$b_0, b_1, \text{RSE}$        $b_0, b_1, \text{RSE}$        $b_0, b_1, \text{RSE}$        $b_0, b_1, \text{RSE}$

Distribution of the  $b_1$  estimates