

Recap: Fixed Linear Effects Model

$$y_{ij} = \underbrace{\mu}_{\text{intercept}} + \underbrace{\text{herd}_j}_{\text{effect of herd}_j \text{ on weaning weight}} + \underbrace{e_{ij}}_{\text{random residual} \rightarrow \text{unknown}}$$

y_{ij} → weaning weight of animal i in herd j
known from data

Goal: What are the effects of different herds on response variable (y), in our example weaning weight!

Modelling Procedure: Step 1: Info from the dataset into the model

$$\begin{cases} y_{12,1} = \mu + \text{herd}_1 + e_{12,1} \Leftrightarrow 2.61 = \mu + \text{herd}_1 + e_{12,1} \\ \vdots \\ y_{27,2} = \mu + \text{herd}_2 + e_{27,2} \Leftrightarrow 3.61 = \mu + \text{herd}_2 + e_{27,2} \end{cases}$$

least squares to solve for effects of $\mu, \text{herd}_1, \text{herd}_2$