

196. Suppose that the random variables Y_{ij} are observed according to the model

$$Y_{ij} = \mu + \tau_i + \epsilon_{ij}, \quad i = 1, \dots, k, \quad j = 1, \dots, n_i.$$

where $\epsilon_{ij} \sim \text{normal}(0, \sigma^2)$ for all i, j . Show that without the constraint $\sum_{i=1}^k \tau_i = 0$ the model is not identifiable.