0.1 Advantages of Mixed Models

- **cite:BrownPrescott** discusses the following advantages of using mixed effects models. In the case of repeated measurements , it is appropriate to take account of the correlation of each group of observations.
- Mixed models lead to more appropriate estimates and standard errors for fixed effects, particularly in the case of repeated measures. Analysis using a mixed model is more appropriate for inference on a hierarchical data. In the case of unbalanced data, mixed models are more appropriate than other methodologies.
- **cite:Demidenko** comments that mixed models are the correct approach for dealing with grouped data. The use of linear mixed effects models has advanced greatly with increased usage of statistical software.
- This author also notes that mixed models are a hybrid of bayesian and frequentist methodologies and that mixed model approaches are more flexible than Bayesian.

0.1.1 Unbalanced Data

- Unbalanced data refers to situations where these groups are of different sizes. Mixed Effects Models are suitable for studying unbalanced data sets.
- The variance components of random effects for these set can not be derived using alternative methods such as ANOVA.