

Title: Linear mixed model and its application

Data with nested structure or collected by repeated measurement are commonly seen in studies in a variety of fields such as economics and finance, biomedical and social science. Linear mixed model (LMM) is particularly useful in analyzing this type of data. It typically captures the commonalities or correlations between observations using a random effect term while accounting for the explanatory variables on the response variable using a fixed effect term. The word “mixed” in LMM refers to the model includes both random and fixed effects.

In this project, students are going to study LMM from both theoretical and practical perspectives. Specifically, for model implementation, students are expected to

- have a brief review of current literature on the application of LMMs
- determine a specific topic that can be studied by analysing some real-world data measured in a hierarchical or repeated manner
- apply LMM to the dataset using programming language such as R or Python
- give sound interpretation of results, and
- compare the results to which is obtained by an ordinary regression model