Generalized Linear Models

Introduction and Overview

Prof. Dr. Andreas Groll & Guillermo Briseno Sánchez

Summer term 2022
Organizational stuff

Lecture

▶ inverted classroom with online videos
▶ Q&A session on Tuesday, Wednesday or Thursday (TBA; planned in physical presence)

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Exercise

▶ yet to be announced

Guillermo Briseno Sánchez (briseno@statistik.tu-dortmund.de)
Organizational stuff

Website
https://moodle.tu-dortmund.de/course/view.php?id=32833

Enrollment key: GLMs2022

Exams
▶ 1st date: probably end of July 2022
▶ 2nd date: probably end of September/start of October 2022
Goals of this course

Get familiar with advanced regression techniques

- Generalized regression models to analyse panel data
- Categorical regression
- Variable selection via penalization
- How to deal with longitudinal data

Learning objective: Acquire competences ...

... to choose, compare and interpret suitable models for a given data situation.
Content

- Based on the course from Annika Hoyer (and colleagues, LMU Munich)
- No complete manuscript, but:
  ➡️ video lecture: a mixture out of slides & hand-written parts; Q&A sessions

Literature

- Tutz (2011): Regression for categorical data. Cambridge University Press
Course overview

1. Basic concepts of regression
Course overview

1. Basic concepts of regression
2. Binary regression
Course overview

1. Basic concepts of regression
2. Binary regression
3. Generalized linear models
Course overview

1. Basic concepts of regression
2. Binary regression
3. Generalized linear models
4. Multi-categorical regression
Course overview

1. Basic concepts of regression
2. Binary regression
3. Generalized linear models
4. Multi-categorical regression
5. Semi- and non-parametric regression
Course overview

1. Basic concepts of regression
2. Binary regression
3. Generalized linear models
4. Multi-categorical regression
5. Semi- and non-parametric regression
6. Multivariate/ extended regression models