

Project II

Discrete covariates

The data set `rent_index_99.csv`¹ contains rent index data for Munich collected in 1999. It contains information about the net rent and 6 other covariates for a total of 3082 apartments in Munich. The covariates include:

- size of the living area (i.e. the apartment's size) in square meters;
- construction year;
- quality of the bathroom (0 = standard, 1 = premium);
- quality of the kitchen (0 = standard, 1 = premium);
- quality of the location (1 = average location, 2 = good location, 3 = top location);
- central heating (1 = yes, 0 = no).

Tasks:

1. Determine whether the quality of the location has a significant effect on the rent per square meter. Put special emphasis on the decision whether to use a parametric (ANOVA) or nonparametric (rank-based) method.
2. Are there pairwise differences between the rent per square meter for different location qualities? Consider all pairs of location qualities and conduct two-sample tests. Use appropriate methods to adjust for multiple testing. Interpret the results. Compare the results derived with and without adjustments for multiple testing.

For both tasks, remember to check that all assumptions hold before applying the respective tests.

Submission

Submission of the report and the corresponding program code (executable and commented) is due on **Friday, 27 May 2022 at 08:30 a.m.** All relevant files must be uploaded to Moodle.

¹available from <https://www.uni-goettingen.de/de/551218.html>