



EXERCISES SESSION 5

The topic of this exercise session is the *Multinomial Logit* model. You will estimate different model specifications for the *Airline Itinerary Choice* (Boeing) case study.

First, download the file `MNL_Airline.zip`. It contains:

1. the `MNL_airline_generic.py` file with an example model specification,
 - This is your base model. You will use it as a template to perform more modeling exercises.
2. the data file `airline.dat`, and
3. the description and interpretation of the base model, as well as some extensions of it that we propose (`MNL_Airline.pdf`).

Now, copy the `MNL_airline_generic.py` file and use it as a template to perform the following tasks.

Practise

Follow the description in the `MNL_Airline.pdf` file and for each model described there:

1. Try to understand the proposed specification.
2. Try to code the proposed specification. You should create the following files:
 - (a) `MNL_airline_specific.py`
 - (b) `MNL_airline_socioecon.py`
 - (c) `MNL_airline_socioecon_mi.py`
3. Estimate the model specifications. You should obtain the following files:
 - (a) `MNL_airline_specific.html`
 - (b) `MNL_airline_socioecon.html`
 - (c) `MNL_airline_socioecon_mi.html`
4. In order to verify that your code is correct, compare the results that you obtain with the ones that we provide in the description.

Create and analyze

Chose one of the above models as a base and develop new model specifications using your own hypotheses. We suggest the following:

1. Include characteristics of the decision makers.
2. Include interactions of *attributes* of the alternatives with the *characteristics* of the individuals.

Then,

1. Explain what each of your proposed specifications captures: what are the underlying hypotheses that you want to test through each specification?
2. Estimate the models you developed and interpret the obtained results: comment on the signs of the parameters. Are the results according to your expectations?

mbi/ ek/ afa/ mpp