EPFL ENAC TRANSP-OR **Prof. M. Bierlaire**

Mathematical Modeling of Behavior Fall 2014



EXERCISES SESSION 7

The purpose of this lab is to compare the different specifications of Multinomial Logit (MNL) models you tried in the exercises session 5 with some given examples and improve your best model by applying a socio-economic segmentation. You will work with the *Airline Itinerary Choice (Boeing)* dataset.

Question 1

Compare the different non-linear specifications and tests you tried in exercises session 5 with the interpretations given on the course web site.

Question 2

Consider the best model you obtained at the end of exercises session 5 and perform the following tasks:

- 1. Try a socio-economic segmentation of the constant, which is equivalent to adding socioeconomic parameters directly to the utilities. Is this segmentation significant?
- 2. Try a socio-economic segmentation of attributes of the alternatives one-by-one. Remember the difference between discrete and continuous segmentations. Are your segmentations significant?
- 3. Try a socio-economic segmentation of all parameters. How can you test if this segmentation is significant? Is a socio-economic segmentation of all parameters relevant?
- 4. Improve the model you developed in exercise session 5 using the results of the segmentations you tried above.

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