Exercises session 8

The topic of this session is validation (discussed in the last part of the lecture on statistical tests) and forecasting. We ask you to work on the *Airline itinerary choice* dataset. You can use the provided case study with the *Residential Telephone Services* dataset for help.

You shall choose the best model that you have specified during the previous lab sessions.

Validation

1. Perform an outlier analysis using the simulation file from Biogeme to generate the probabilities, and Excel (or any other statistical software, e.g. R) for the analysis. Try to find possible causes for low probabilities and, if possible, modify the model specification in order to improve the model.

2. Compare predicted vs. observed shares for different market segments (e.g. market share per income levels).

Forecasting

1. Choose a scenario you want to test. For example, test the effect of a change in the cost of alternatives across different market segments.

2. For each scenario, forecast the shares for the different market segments and compare them with the original scenario.

3. While computing the market shares, the estimated parameters of the model are used. How can standard errors of parameters be taken into account?

4. Compute elasticities and explain the relationship between the change in variable (e.g. cost) and the market share (elastic, inelastic relationship).

5. Imagine that Boeing intends to increase the revenues obtained by the non-stop alternative. Find the optimal price for this alternative.

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