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Exercises session 10

The topic of this lab is the forecasting. We ask you to work on the dataset *Mode choice in Switzerland (Optima)*.

1. In the data, 943 respondents are men, and 871 are women. In Switzerland population, there are 97.3 men for 100 women. How can you compute the predicted market shares in order to handle with the over sampling of women in the data?
2. Imagine that the public transportation company (let's assume it is one big company that owns all public transportation in Switzerland for simplification) want to increase its (real) revenues. How would you proceed to find the public transportation costs which maximize the public transportation revenues? Find the optimal costs (for simplification you can consider either a global increase or decrease of public transportation costs in terms of percentage of the current rail costs).
3. For computing the market shares, the estimated parameters of the model are used. How standard errors of parameters can affect the predicted market shares?

On the website, we provide a final model for the dataset *Transportation mode choice in the Netherlands* and some results presented in the file *summary\_forecasting.xls*. These results can help you finding inspiration, in particular for question 2.

**Your lab participation for discussion during lectures:**

In a 2-page report:

- give the current market shares for each of the three modes,
- present the effect on market share of changes in one attribute, e.g., cost,
- present your strategy to deal with the oversampling of men, and
- show the optimal cost for public transport.

This is a group work. Groups are the same than for previous assignment. Note that this assignment is **compulsory!**