Exercise: Stated Preference Survey

Hand-out: March 2, 2016
Hand-in: June 6, 2016

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Exercise in Measurement and Modeling of Travel Behavior February 2016

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Goal

Road and public transport users must decide each day how to schedule and carry out their activities and paths. Transport policy tries through investments and changes in supply, specifically by changes in the generalized costs, to affect these decisions in travel behavior. To estimate the effectiveness of new measures detailed preliminary studies are necessary, particularly by asking the affected road and public transport users about their preferences and understanding their behavior in changing environments.

The aim of this exercise is to conduct a stated choice survey on a topic of your own choice – not necessarily in the field of transportation. You should form groups of 2 students to conduct the survey. The topic should be discussed with your supervisors Basil Schmid and approved by the lecturer Kay W. Axhausen. Each respondent should receive two choice experiments and a battery of attitudinal questions.

The main experiment should include about 8 choice sets per respondent, each of them containing $z$ ($z \geq 2$) alternatives and 8-12 attributes. In addition, a reduced $z \times 2$ experiment should be conducted to test for methodological context effects, including your two main attributes only.

Task

The following sub-steps have to be performed and documented:

- Definition of the topic and the hypotheses (alternatives and factors / attributes)
- Selection of market segments and the environment
- Creation of the experimental designs in Ngene or R
- Presentation of the research plan regarding coverage of the value ranges of the presented trade-offs, dominance of choice alternatives and a-priori simulation of the design
- Design of the questionnaire with an appropriate software tool (selectsurvey, qualtrics, surveymonkey, etc.) or in Illustrator for a paper-pencil-version (template available)
- Pretest with 20 respondents (friends, family, colleagues, etc.)
- Examination of responses and adjustments where necessary
• Main survey with at about 100 respondents per person / group member (friends, family, colleagues, etc.)
• Examination of the data for detecting "non-traders" and inconsistent behavior
• Descriptive statistics and sample descriptions; response behavior
• Modeling of decisions in R or Biogeme (models with linear, nonlinear and / or appropriate interaction terms, Mixed Logit, GMNL, Nested Logit, etc.)
• Testing for context effects: Comparison of $z \times 2$ experiment with main experiment for different valuations of core attributes
• Estimation of parameters, elasticities and VTTS; interpretation of the results; conclusions

Procedure and time schedule

The exercise is divided into the following sub-steps:

• Hand-out of the exercise: March 2, 2016
• Presentation of ideas about the design and experiment: March 23, 2015
• Beginning of the pretest: March 23, 2016
• Presentation of pre-test results / beginning of the main survey: April 7, 2016
• Beginning with model estimation: Mai 9, 2016
• Presentation of final survey results: June 2, 2016
• Hand-in final report (via Email to basil.schmid@ivt.baug.ethz.ch): June 6, 2016

Scope

Your report should contain 20-25 pages including figures and tables. The documentation of the methods used, model estimation results organized in clear tables, and the interpretation of the results regarding the hypotheses are of special importance. In addition, the data files and codes must be handed-in in electronic form and attached in the email when submitting the exercise. Please make sure that your codes and data files are well arranged and clearly structured.
Layout

You should follow the IVT “house-style” to write your report. More information can be found on http://www.ivt.ethz.ch/education/utilities. The preferred language is English.

Good luck!