8th GESIS Summer School in Survey Methodology
Cologne, August 2019

Syllabus for Course 12: “Factorial Survey Design”

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Date: 19.-23. August 2019
Time: 09:00-13:00, 14:00-16:00
Course starts Monday morning at 09:00

About the Instructors:

Prof. Dr. Katrin Auspurg currently holds a full professorship in Sociology, area Quantitative Methods of Empirical Research, at the Department of Sociology at the Ludwig Maximilian University Munich. Her main research interests are in survey research methods, social inequality and labor market research.

Dr. Carsten Sauer is a research fellow at the Department of Sociology at Radboud University Nijmegen, The Netherlands. His research interests include labor market inequality and justice perceptions, analytical sociology, and quantitative research methods (especially survey experiments).

Selected Publications:


Short Course Description:

The factorial survey ("vignette analysis") is a method that integrates multi-factorial experimental set-ups into surveys. Respondents are asked to evaluate hypothetical situations, objects or persons. By systematically varying attributes of the descriptions it is possible to determine their influence on respondents' stated attitudes, decisions, or choices. The experimental variation of stimuli allows estimating the influence of each attribute on the evaluation; the factorial survey is therefore an appropriate instrument to test theoretical predictions. As the experiment is embedded in a survey questionnaire, it is additionally possible to reach heterogeneous sample populations. This course gives a theoretical and practical overview of factorial survey methods. Participants will get practical insights into all single steps necessary to design factorial survey experiments: (1) construction of vignettes, (2) selection of an experimental design, (3) drafting and programming of questionnaires (for online surveys as well as paper and pencil surveys), (4) data management, and (5) data analysis techniques (such as multilevel analyses, estimations of willingness to pay). Participants may select a research question related to their own research for practical exercises. For most practical analyses the statistical software package Stata will be used (basic prior knowledge needed). For setting up experimental designs and programming of questionnaires we use the software packages SAS and QuestBack (no prior knowledge is needed). The method is NOT connected to
(confirmatory or explorative) factor analysis. Moreover, the course does not include anchoring and video vignettes.

Keywords:
Survey experiment, multi-factorial design, experimental set-up, vignette construction, sampling techniques

Course Prerequisites:
- Participants should be familiar with the statistical software package Stata before the course starts (i.e., command structure, do-files, ados).
- Participants should have basic knowledge of questionnaire design and experimental methods.
- Methodical knowledge of data management and quantitative data analyses (e.g. linear regression techniques, coding of variables, merging of data sets).

Target Group:
Participants will find the course useful if they:
- want to learn about survey-experimental designs to study attitudes or decisions,
- have initial ideas for their own research questions that could be realized by means of a factorial survey,
- plan to conduct a factorial survey in their projects;
- want to deepen their knowledge of experimental designs and quantitative statistical methods,
- want to learn how to analyze data from experimental designs and factorial surveys and evaluate the quality of such data.

Course and Learning Objectives:
By the end of the course participants will:
- have learned and discussed the features, typical applications, advantages, and shortcomings of factorial survey methods
- have acquired practical insights into all single steps that are needed to set up factorial survey designs, to implement them into (computer assisted) questionnaires, to analyze resulting data, and report on results,
- be familiar with practical methods to evaluate data quality gained by factorial survey methods;
- have gained some insights into related experimental survey methods such as conjoint analyses and choice experiments,
- be able to apply factorial survey methods on their own.

Organizational Structure of the Course:
The course consists of 4 hours of classroom instruction (9:00-13:00) and individual exercises in the afternoon. Classroom instruction: The instructors provide an overview and the theoretical background of the method and explain the assignments for the exercises. Individual exercises: In each exercise, participants are expected to work on assignments in the PC pool. Participants may use these exercises to advance factorial survey modules that are related to their own research projects (e.g. PhD projects) and discuss the results with other participants and the instructors. The instructors are available in the PC pool for 2 hours to help with the exercises or to discuss specific research problems. If time allows, participants may consult instructors for help on their projects in more detail.

Software and Hardware Requirements:
Course participants will not need to bring a laptop computer for this course. This course will take place in a computer lab.
Long Course Description:

Survey experiments are frequently used for investigating people's attitudes, values, opinions, and behavioral intentions. In particular, there is an increasing use of methods that integrate multi-factorial experimental set-ups into surveys, such as factorial surveys methods (sometimes referred to as "vignette analyses"). In those surveys, respondents are asked to evaluate hypothetical situations, objects or persons. By systematically varying attributes of the descriptions (e.g., the educational background of a described person), it is possible to determine their influence on respondents' stated choices, decisions or attitudes. For example, when evaluating fair earnings, should men and women earn the same wages? What would be a fair return to higher education? Do all respondents employ similar evaluation rules or are there differences across social groups? Researchers' controlled experimental variation of stimuli allows a reliable evaluation of the impact of each attribute. Moreover, the method allows direct tests of decision processes and theories. As the experiment is embedded into a survey questionnaire, it is possible to reach a heterogeneous sample population. The variety of possible applications and the appealing possibilities to test social and economic theories are important reasons for the method being more and more often used in the social sciences.

This course gives a theoretical and practical overview of factorial survey methods and some insights into related experimental survey methods (conjoint analysis, choice experiments). Students will get practical insights into every single step that is needed to design factorial survey experiments, starting with the development of vignettes, continuing with the selection of an experimental design, drafting and programming of questionnaires (for online and paper and pencil surveys), through special methods for data analyses (such as multilevel regression analyses, estimations of willingness to pay). For practical exercises, participants might select a research question related to their own research. The factorial survey method is NOT connected to (confirmatory or explorative) factor analysis. Anchoring and video vignettes are beyond the scope of this course.

For most practical analyses, the statistical software package Stata will be used. Part of the exercises will employ a large-scale population survey on fairness of earnings. Although a short introduction to Stata will be provided, participants should be familiar with the program before the course starts. For setting up experimental designs and programming of questionnaires, additionally the software packages SAS and QuestBack will be used. For these parts of the course, no prior knowledge is needed.

Day-to-day Schedule and Literature:

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<th>Day</th>
<th>Topic(s)</th>
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| 1   | Introduction to the idea and approach of Factorial Surveys  
Selection of dimensions and levels, construction of vignettes: Part I  
Brief introduction to the syntax and workflow in Stata, introduction to Stata for advanced users of other programs; data management |

Compulsory reading:

Suggested reading:
| 2 | Selection of dimensions and levels, construction of vignettes: Part II  
Vignette sampling techniques: random and fractional designs |
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<td><strong>Compulsory reading:</strong></td>
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| 3 | Construction of questionnaires (PAPI and CASI) and data preparation.  
Response scales and survey modes. |
| **Suggested reading:** |  
| 4 | Complex analysis of Factorial Surveys: cluster-robust regressions, multi-level analysis, willingness-to-pay analysis. |
| **Compulsory reading:** |  
- Cameron, A.C./Trivedi, P.K. (2010): Microeconometrics Using Stata. Austin, TX: Stata Press.  
Methodological research on Factorial Surveys: learning effects, fatigue effects, order effects. Related methods: conjoint analysis, choice experiments.

**Compulsory reading:**

**Suggested reading:**

**Preparatory Reading:**

**Additional Recommended Literature:**

Stata Introductions: