GESIS Summer School in Survey Methodology 2022

Syllabus for course:
“Designing, Implementing, and Analyzing Longitudinal Surveys”

Lecturers: Dr. Tarek Al Baghal  Dr. Alexandru Cernat
E-mail: talbag@essex.ac.uk  alexandru.cernat@manchester.ac.uk
Homepage: www.iser.essex.ac.uk/people/talbag  www.alexcernat.com

Date: 08-12 August 2022
Time: 10:00-13:00 | 14:00-17:00
Venue: KOMED, Im Mediapark 7, Cologne

About the Lecturers:
Dr. Tarek Al Baghal is a Professor of Survey Methodology at the Institute of Social and Economic Research, University of Essex, and is Deputy Director of Understanding Society, one of the largest longitudinal studies in the world. His research interest focuses on new data sources and linkage to surveys. His PhD is in Survey Research and Methodology from the University of Nebraska, and he has a Master’s in the same field from the University of Maryland.

Dr. Alexandru Cernat is an associate professor in Social Statistics at the University of Manchester. Previously he was a Research Associate at the Cathie Marsh Institute for Social Research and the National Centre for Research Methods, University of Manchester where he investigated non-response in longitudinal studies with a special focus on biomarker data. He has received a PhD in survey methodology from the University of Essex working on the topic of mixed mode designs in longitudinal studies.

Selected Publications:
Course Description:
The course will provide an overview of those aspects of survey design, implementation, and analysis that are unique to longitudinal surveys or that have distinct features in the longitudinal context. The course will specifically cover:

- A review of the advantages and limitations of longitudinal surveys and an outline of some of the uses to which longitudinal surveys are put.
- Key aspects of longitudinal survey design such as the sampling design, interval between waves, and data collection modes.
- Important aspects of designing a questionnaire and measurement for a longitudinal study, particularly for capturing micro-level change.
- The impact of non-response and attrition in a panel, and adjustments such as weighting and imputation given that missing data patterns differ between waves.
- An introduction to important analysis considerations and methods when using a longitudinal survey design.
- In addition, each day there will be time used for practical applications of lectures and methods taught and provide an opportunity for more interaction with the instructors.

Keywords:
Longitudinal surveys, data collection, measurement, attrition, weighting

Course Prerequisites:
- participants should have basic knowledge of survey methodology from a cross-sectional perspective, in particular with respect to survey design, instrument development, and survey implementation
- basic knowledge of statistics and statistical modelling (i.e., regression) and of a statistical software (Stata or R).

Target Group:
Participants will find the course useful if:
- they are interested in the uses and importance of longitudinal surveys
- they are involved in planning or conducting a longitudinal survey
- they are interested aspects of longitudinal data collection
- they are in the processes involved in measurement of phenomena over time
- they want to use appropriate methods to analyse longitudinal data.

Course and Learning Objectives:
By the end of the course participants will:
- be familiar with the central design issues of longitudinal surveys
- understand different strategies on how to collect longitudinal data
- be able to design questions that meet research objectives for longitudinal surveys and minimize error
- be able to identify and implement features that should help to prevent panel attrition
- be able to study the nature of non-response and attrition in a longitudinal survey
- understand generally the methods used in weighting and imputation in a panel survey.

Organizational Structure of the Course:
- In these meetings, practical applications will be given for the students to work through, with the opportunity to ask instructors questions one-on-one about the course or their own projects.
- The practical application will relate to topics in longitudinal survey design covered in the lectures, including the impact of question wording on measurement, the identification of attrition, the development of weights, and how these can impact analytic findings.
- After the individual work the lecturer will go through the solutions with the entire class
- Analysis done during practical applications will use Stata or R
Software and Hardware Requirements:
Participants will need to bring a laptop computer to successfully participate in this course. Participants may use R or Stata for exercises. Stata users may receive a Stata short term license provided by GESIS for the duration of the course if needed. R users should have installed a recent version of R (R packages needed: tidyverse, haven, sample, lme4, plm, broom).

Day-to-day Schedule and Literature:

<table>
<thead>
<tr>
<th>Day</th>
<th>Topic(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Longitudinal Surveys; Research Questions; Sample Design; Survey Modes</td>
</tr>
</tbody>
</table>

Compulsory reading (have to be read before the session):

Suggested reading (suggested, yet do not have to be read before the session):

2 Measurement in Longitudinal Surveys: What to measure, cognitive processes, problems, and questionnaire design

Compulsory reading:

Suggested reading:
3 Attributions in Longitudinal Surveys: Specific issues and methods to counter nonresponse

**Compulsory reading:**

**Suggested reading:**

4 Weighting and Imputation in a Longitudinal Survey

**Compulsory reading:**

**Suggested reading:**

5 Introduction of analysis issues in longitudinal surveys

**Compulsory reading:**

**Suggested reading:**
Preparatory Reading:
General introduction to survey methodology and survey data collection (alternatively you could take a course such as “Introduction to Survey Design” in the first week):

Additional Recommended Literature:
General introduction to survey methodology and survey data collection:

General longitudinal data collection:

Mixed modes and longitudinal studies:

Online panels: