

# Topics in Survey Methodology and Survey Analysis, fall 2012

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### Lecturers

Part 1: [Prof. Seppo Laaksonen](#)  
Part 2: [Acting prof. Kimmo Vehkalahti](#)  
Part 3: [Prof. Risto Lehtonen](#)

### Type

Advanced studies

### Scope

Lectures 24 hours  
PC classes 9 hours

Credits: 4/6 ECTS credits

Assessment: Active participation during the course, exam 4 cu + optional homework assignment of 2 cu

### Description

The course covers materials on modern survey research methods used for empirical quantitative research in social and behavioral sciences and economics. Topics include study design, sampling methods, data collection and measurement, data cleaning (edit, imputation) and the analysis of complex survey data. The course is of applied type. Treatment of each method includes general description of the methodology, data requirements, computation, worked examples and real-world case studies. Selected computational tools (SAS, SPSS) are practiced in computer classes.

The course is intended to post-graduate students in social and behavioral sciences and economics but also can be included in methodologically oriented Master studies (e.g. the REMS program) and Master studies in statistical science.

### Contents

Topics of Part 1 (Seppo Laaksonen): Study design, basic sampling techniques, data collection modes, treatment of nonresponse, reweighting, imputation techniques (single and multiple imputation), use of secondary data (data archives, administrative and register data sources). Examples include: The European Social Survey, The PISA and the Ethiopian Consumption and Welfare Monitoring Survey.

Topics of Part 2 (Kimmo Vehkalahti): Exploratory and confirmatory analysis, reliability, validity and measurement errors, data reduction with factor analysis, visualization of multidimensional data.

Topics of Part 3 (Risto Lehtonen): Hierarchical or multilevel data, analysis of multilevel or cluster correlated data, basic multilevel modelling, linear and logistic mixed models, software.

### Lectures and PC classes

Part 1: Seppo Laaksonen  
Lectures: Tuesday 11 Sept. at 14-18  
Thursday 13 Sept. at 14-16  
PC training: Thursday 13 Sept. at 16-19

Part 2: Kimmo Vehkalahti  
Lectures: Tuesday 18 Sept. at 14-18  
Thursday 20 Sept. at 14-16  
PC training: Thursday 20 Sept. at 16-19

Part 3: Risto Lehtonen  
Lectures: Tuesday 25 Sept. at 16-20 (please note timing!)  
Thursday 27 Sept. at 14-16  
PC training: Thursday 27 Sept. at 16-19

Venue: SSKH IT-sal, Snellmaninkatu 1. Please note the exception: Tuesday 18 Sept. at 14-16, Unioninkatu 37, seminar room 4

### Exams

Course exam: Tuesday 2 October at 14:00-17:00, Unioninkatu 40, room 2

Course exam 2 (resit): **\*New\***

Date: Monday 22 October 2012 at 12:00-16

Venue: Kumpula Campus, Exactum Building (Gustaf Hällströmin katu 2b), Auditorium A111 / B123

Registration by 14 October 2012 (Weboodi)

## Textbook

Lehtonen R. and Pahkinen E. (2004). Practical Methods for Design and Analysis of Complex Surveys. Second Edition. Chichester: John Wiley & Sons. Chapter 8.

Additional materials:

International Handbook of Survey Methodology by Edith D. de Leeuw (Editor), Joop Hox (Editor), Don Dillman (Editor). (European Association of Methodology Series), 2008

Survey Methodology (Wiley Series in Survey Methodology) by Robert M. Groves (Author), Floyd J. Fowler (Author), Mick P. Couper (Author), James M. Lepkowski (Author), Eleanor Singer (Author), Roger Tourangeau (Author)

Applied survey methods: a statistical perspective by Jelke G. Bethlehem. John Wiley and Sons, 2009

## Web materials

VLISS-virtual laboratory in survey sampling <http://mathstat.helsinki.fi/VLISS/>

## Lecture materials

- Part 1 (Seppo Laaksonen). This part of several sub-files. The first one is here: [http://wiki.helsinki.fi/download/attachments/87965093/Social+Statistics\\_+Survey+Concepts\\_Seppo.pdf](http://wiki.helsinki.fi/download/attachments/87965093/Social+Statistics_+Survey+Concepts_Seppo.pdf). The next one here: [http://wiki.helsinki.fi/download/attachments/87965093/Social+Statistics\\_+Questionnaires\\_Seppo.pdf](http://wiki.helsinki.fi/download/attachments/87965093/Social+Statistics_+Questionnaires_Seppo.pdf). The third is below and considers the Ethiopian survey designs. The second day material is here: [https://wiki.helsinki.fi/download/attachments/87965093/Social+Statistics\\_+Sampling+Principles\\_Seppo.pdf](https://wiki.helsinki.fi/download/attachments/87965093/Social+Statistics_+Sampling+Principles_Seppo.pdf)

[An example on the sampling file that is started to create when designing the gross sample and completed after the fieldwork: https://wiki.helsinki.fi/download/attachments/71485961/Sampling\\_File\\_.pdf](https://wiki.helsinki.fi/download/attachments/71485961/Sampling_File_.pdf)

A concrete practical survey example from Ethiopia, considered in the end of 11 Sept: [http://wiki.helsinki.fi/download/attachments/87965093/Ethiopia\\_hy\\_2012.pdf](http://wiki.helsinki.fi/download/attachments/87965093/Ethiopia_hy_2012.pdf)

- Part 2 (Kimmo Vehkalahti)  
Additional downloads:  
[Selected ESS data set \(SPSS\)](#)  
[Quickguide](#)  
[Codebook](#)

Worked Example by SAS and SAS Code Updated 20 Sept.

- Part 3 (Risto Lehtonen)  
Additional downloads:  
[Slides: Multilevel modelling in PISA Survey](#)  
[Lehtonen-Pahkinen \(2004\) Sections 8.3 and 8.4](#) on logistic modelling of complex survey data  
[Lehtonen-Pahkinen \(2004\) Section 9.4](#) on multilevel modelling of complex survey data  
[Sampling Manual](#) on sampling and estimation design

## Computer classes

Downloads for PC training:

[Instructions](#)

Program codes:

[SAS code 1](#) for descriptive statistics on correlated responses (OHC data set)

[SAS code 2](#) for logistic regression on correlated responses (OHC data set)

[Mplus code](#) for design-based logistic regression with Mplus (COMPLEX type analysis)

Data sets:

[SAS data set OHC](#)

[SPSS data set OHC](#) NOTE: CSPLAN file is created in PC session

[Mplus data set OHC](#)

PART 1: One task is to look at some ideas of questionnaires and their designing; this includes ESS questionnaires and possibly PISA questionnaires and British question banks etc mentioned in lectures. Second option is to download a ESS file from the ESS website and work with it. The third option is to look at the PISA file available here: [https://wiki.helsinki.fi/download/attachments/87965093/Pisa\\_2009.zip](https://wiki.helsinki.fi/download/attachments/87965093/Pisa_2009.zip)

The best option is to work with her/his own file and to progress his/her own work further. Of course, the time is limited but continue during next parts.

## Homework assignments (2 cu)

[Common use homework based on OHC data](#)

Alternatively, own data set can be used

NOTE: For those who plan homework based on own data: Please prepare a 1 page document describing study problem, data, methods and tools, and send it to the instructors as email attachment (pdf).

Meetings will be organized for details (if needed) after exam date (will be agreed separately).

## Registration

Did you forget to register? [What to do](#).