

# Introduction to Survey Methodology

## Tutorial

WS 2015/16

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### *Time and place*

Wednesdays, 8:15-9:45, room D-430

### *Summary*

In the tutorial principles and methods are implemented and practiced using real survey data and the free statistical software package R. It will largely be based on:

Lumley, Thomas. 2010. *Complex Surveys. A Guide to Analysis Using R*. Hoboken, NJ: Wiley.

Further, we will study individual contributions to the *Journal of Statistical Software*. You can download all materials from the course's website at ILIAS.

### *Schedule*

#### *I. Overview and R introduction*

**21.10. IMPORTANT: NO SESSION—We talk about organizational matters in a joint session with the lecture on 22.10.!**

**22.10. Overview and organizational matters (jointly with the lecture; 11.45a.m.-1.15p.m., room D-432)**

Lumley, Ch. 1

Lumley, Thomas. 2004 Analysis of Complex Survey Samples. *Journal of Statistical Software* 9(8): 1-19.

**28.10. R introductory workshop, part I (room BS-217, 8.15a.m.-11.30a.m.)**

Please work through <https://www.datacamp.com/courses/free-introduction-to-r>

**04.11. R introductory workshop, part II (room BS-217, 8.15a.m.-11.30a.m.)**

Please work through <https://www.datacamp.com/courses/dplyr-data-manipulation-r-tutorial>

#### *II. Sampling*

**11.11. Simple random, systematic and stratified sampling**

Lumley, Ch. 2

**18.11. Cluster and multistage sampling**

Lumley, Ch. 3, 8

**25.11. Sampling: Practice Session**

Assignment 1 (due: 01.12., 11.59p.m., on ILIAS)

### *III: Non-Response and Missing Data*

#### **02.12. Dealing with unit non-response**

Lumley, Ch 7

#### **09.12. Dealing with item non-response**

Lumley, Ch. 9

Honaker, James, Gary King, and Matthew Blackwell. 2011. Amelia II: A Program for Missing Data. *Journal of Statistical Software* 45(7): 1-47.

#### **16.12. Non-response: Practice Session**

Assignment 2 (due: 22.12., 11.59p.m., on ILIAS)

*Christmas break*

### *IV. Measurement*

#### **13.01. Classical Test Theory and scale analysis**

Revelle, William. 2015. An overview of the psych package. Sections 1-5. <https://cran.r-project.org/web/packages/psych/vignettes/overview.pdf>

#### **20.01. Item Response Theory**

Rizopoulos, Dimitris. 2006. ltm: An R Package for Latent Variable Modeling and Item Response Theory Analyses. *Journal of Statistical Software* 17 (05): 1-25.

van der Ark, L. Andries. 2007. Mokken Scale Analysis in R. *Journal of Statistical Software* 20(11): 1-19.

### *V. Modeling survey data*

#### **27.01. Modeling survey data: ratios and linear regression**

Lumley, Ch. 5

#### **03.02. Modeling survey data: combination of data sources**

Peter Selb and Simon Munzert. Forthcoming. "Forecasting the 2013 Bundestag Election Using Many Polls and Historical Election Results." *German Politics*.

#### **10.02. Introduction to the Unipark software**

Assignment 3 (due: 17.02., 11.59p.m., on ILIAS)