

Introduction to Survey Methodology

Tutorial

WS 2014/15

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Time and place

Thursdays, 17:00-18:30, Room C-424

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

20.11. Overview and introduction

Lumley, Ch. 1

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

21.11., 24.11., 25.11. (all-day) R introductory workshop (choose the date that suits you best)

Not yet familiar with R? Please work through <http://tryr.codeschool.com/>

Familiar with R? Please explore <http://cran.r-project.org/web/views/OfficialStatistics.html>

II. Sampling

27.11. Simple random, systematic and stratified sampling

Lumley, Ch. 2

04.12. Cluster and multistage sampling

Lumley, Ch. 3, 8

Assignment 1

III: Non-Response and Missing Data

11.12. Dealing with unit non-response

Lumley, Ch 7

18.12. Dealing with item non-response

Lumley, Ch. 9

Honaker, James, Gary King, and Matthew Blackwell. 2001. Amelia II: A Program for Missing Data. *Journal of Statistical Software* 45(7): 1-47.

Assignment 2

Christmas break

IV. Question Design and Measurement

08.01. Introduction to the Unipark software

15.01. Reliability and validity

Revelle, William. 2014. An overview of the psych package. Sections 4 (“Item and scale analysis”) and 5 (“Classical Test Theory and Reliability”).

Assignment 3

V. Big Data Applications

22.01. Management and analysis of large-scale survey projects

D’Orazio, Marcello. 2014. Statistical Matching and Imputation of Survey Data with StatMatch. http://cran.r-project.org/web/packages/StatMatch/vignettes/Statistical_Matching_with_StatMatch.pdf

Wickham, Hadley. 2007. Reshaping Data with the reshape Package. *Journal of Statistical Software* 21(12): 1-20.

05.02. Q&A