Welcome to Q&A

January 16, 2019

by Prof. Dr. Frauke Kreuter, IPSDS Program Director
Coordinating & Funding

The project on which this report is based was promoted with funds from the Federal Ministry of Education and Research under the reference number [16OH22064]. Responsibility for the contents of this publication lies with the author.
Why SURVEY & DATA SCIENCE?
Social media sentiment (daily, weekly and monthly) in the Netherlands, 06.2010 – 11.2013. Consumer confidence for the same period is shown in the insert (Daas and Puts 2014).
Data Generating Process

Survey Statistic

Construct

Measurement

Response

Edited Response

Specification

Measurement

Processing

Coverage

Sampling

Nonresponse

Adjustment

Population Mean

Sampling Frame

Sample

Respondents

Postsurvey Adjusted Data

Survey Statistic

Groves et al. 2004
Big Data Process Map

Generate
- Source 1
- Source 2
- Source M

ETL
- Extract
- Transform (Cleanse)
- Load (Store)

Analyze
- Filter/Reduction (Sampling)
- Computation/Analysis (Visualization)
Innovations in Federal Statistics
Combining Data Sources While Protecting Privacy

Prepared for AAPOR Council by the Task Force, with Task Force members including:

Larry Taylor, Co-Chair, Statistics Sweden
Franke Kreuter, Co-Chair, SPSS at the U. of Maryland, U. of Mannheim & L6B
Matan Berg, Stockholm University
Paul Brewer, RTI International
Paul Dicken, Mathematical Policy Research
Cindy Lane, School of Information at the University of Michigan
Julie Lane, American Institutes for Research
Cathy O’Neil, Johnson Research Labs
Abe Osher, HumanGov Group

Acknowledgments: We are grateful for comments, feedback, and editorial help from
Eva Ben Forstel, Inara McMahon, and the AAPOR council members.

BIG DATA AND SOCIAL SCIENCE
A Practical Guide to Methods and Tools

Edited by
Ian Foster, Rayid Ghani,
Ron S. Jarmin, Frauke Kreuter,
and Julia Lane

Chapman & Hall/CRC
Statistics in the Social and Behavioral Sciences Series
Program Structure
Learn how to communicate results and distribute and store your data.

Learn a variety of analysis methods suited for different data types.

Learn how to curate and manage data.

Understand how to collect data yourself, and how data are generated through administrative and other processes.

Learn how to formulate your research goal and which data are best suited to achieve it.

Source: Usher in Jãpec et al 2015
Data Generating Process

- Fundamentals of Survey and Data Science 3 credits/6 ECTS

Data Curation/Storage

- Data Collection Courses 1 credits/2 ECTS each
- Record Linkage 1 credit/2 ECTS
- Practical Tools for Sampling and Weighting 3 credits/6 ECTS
- Applied Sampling I-III 1 credits/2 ECTS each
- Experimental Design 2 credits/4 ECTS

Data Analysis

- Generalized Linear Models 2 credits/3 ECTS
- Analysis of Complex Data I-III 1 credits/2 ECTS each
- Propensity Score/Statistical Matching 2 credits/4 ECTS
- Machine Learning I-III 1 credit/2 ECTS each

Data Output/Access

- Ethics 1 credit/2 ECTS
- Data Confidentiality and Statistical Disclosure Control 2 credits/4 ECTS
- Visualization 2 credits/4 ECTS

Master Thesis

- Total: 75 ECTS
- Master Thesis: 15 ECTS
Flexible & engaging online learning environment

- Access the online English taught program being anywhere in the world
- Engage with video materials at your own pace
  - program runs min. 15 months to max. 4.5 years, followed by 6 months Master Thesis
- Take part in small group online meetings with faculty and peers
- Attend on-site networking meetings & meet fellow students from five continents
International Faculty from Partner Universities
International Faculty from the Industry
IPSDS Structure

Onsite (Connect@IPSDS)

Online
Format

Asynchronous

- Pre-recorded lectures (split into small video units)
- Required readings and (bi)weekly assignments
- Discussion forums

Synchronous

- Small virtual classrooms
- Weekly 50-minute discussions led by the instructor
IPSDS 3 (Test) Cohorts

• 47 Participants (27 f + 20 m)
  - 100% are working professionals
  - 19 countries of residence
  - Age: median=31 (min-22; max-61)
Timeline

2019

January 31
Application deadline

May 31 - June 2
Connect@IPSDS

June
Statistics Bridge Course starts

September
Program starts
Prerequisites & Admissions

Who should apply?

IPSDS is designed for professionals working with data collection and data analysis.

Admission Requirements

- Academic degree (min. Bachelor’s degree)
- At least 12 ECTS in mathematical/applied statistics
- At least one year of work experience in a position working with data
- English proficiency

Fees

19 courses offered for free in 2019-2020

8 paid courses (750 EUR per 1 credit/2 ECTS)
YOUR Questions
Thank you for your attention!

Contact us:
ipsds@uni-mannheim.de
survey-data-science.net
Appendix
Free courses offering 2019/2020

- Analysis of Complex Survey Data, 2 cr./4 ECTS
- Big Data and Machine Learning, 1 cr./2 ECTS
- Computer-Based Content Analysis I, 1 cr./2 ECTS
- Computer-Based Content Analysis II, 1 cr./2 ECTS
- Data Collection Methods, 3 cr./6 ECTS
- Experimental Design for Surveys, 2 cr./4 ECTS
- Fundamentals of Survey and Data Science, 3 credits/6 ECTS
- Generalized Linear Models, 2 cr./4 ECTS
- Inference from Complex Surveys, 2 cr./4 ECTS
- Introduction to Data Visualization, 1 cr./2 ECTS
- Introduction to Python and SQL, 1 cr./2 ECTS
- Introduction to Real World Data Management, 2 cr./4 ECTS
- Introduction to Small Area Estimation, 2 cr./4 ECTS
- Practical Tools for Sampling & Weighting, 2 cr./4 ECTS
- Privacy Law, 1 cr./2 ECTS
- Project Consulting, 6 cr./12 ECTS
- Questionnaire Design, 2 cr./4 ECTS
- Review of Statistical Concepts (bridge course)
- Web Survey Methodology, 2 cr./4 ECTS
Paid courses offering 2019/2020

750 EUR per 1 credit/2 ECTS

- Applied Sampling (Sampling I), 2 credits/4 ECTS
- Data Confidentiality and Statistical Disclosure Control, 2 credits/4 ECTS
- Introduction to Record Linkage with Big Data Application, 1 credit/2 ECTS
- Item Nonresponse and Imputation, 1 credit/2 ECTS
- Measurement Error Models, 1 credit/2 ECTS
- Multiple Imputation - Why and How, 1 credit/2 ECTS
- Usability Testing for Survey Research, 1 credit/2 ECTS
- Web Scraping and API, 1 credit/2 ECTS