

FU/BEST Program

Name: Thijs Benschop

Email address: fubest@fu-berlin.de

Course title: Statistics for the Social Sciences: Quantitative Research Methods

Course number: FU-BEST 26

Language of instruction: English

Contact hours: 45

ECTS-Credits: 5 **U.S. semester credits:** 3

Course description

Statistics plays an important role in a wide range of professions. Therefore an understanding of statistical concepts and techniques is indispensable in order to critically read and use both popular media and scholarly articles. Furthermore, statistics might play a role in many students' research.

This course aims to acquaint students with the basic concepts in statistics and equip them with a toolbox to conduct their own quantitative research in a social science context. The course covers key statistical concepts and descriptive and inferential statistics. The emphasis of the course is on understanding statistical concepts and developing the ability to apply them as well as to critically read and interpret quantitative research, and less on the mathematical details and proofs of the methods. At the beginning of the course, students will be provided with a list of key themes and methods that they will learn during the course and apply in their own research project at the end of the course.

Software for statistical analysis is an essential tool for conducting statistical research. This course uses SPSS, which will be introduced at the beginning of the course and used throughout.

The first part of the course covers data collection and research design as well as the visualization and description of data with graphs and tables. The course then turns to probability and sample distributions necessary for the inferential statistical methods, which are subsequently introduced. The course will also address the difference between correlation and causality. All the concepts will be illustrated with real-world examples and accompanied by readings of applied research in the social sciences. The students enhance and demonstrate their understanding of the concepts and methods discussed in the course in four homework exercises. Parts of the homework exercises have to be solved by using SPSS. An integral part of the course will be the students' own small research projects in a subject field of their own choice.

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Student profile

Second-semester sophomore or above

Prerequisites

Basic knowledge of algebra

Course Requirements

Mid-term exam: 20 %

Final exam: 30 %

Research project (research proposal, first data analysis, second data analysis): 20 %

Presentation: 10 %

Class participation and homework exercises: 20 %

Literature

- R. Mark Sirkin, *Statistics for the Social Sciences* (3rd edition, Sage publications, 2006).
- Photocopied course-reader with selected research papers
- Hand-outs for SPSS

Course schedule

Sessions	Topics, Readings, etc.
Session 1	<p>Topic: Course overview, introduction to statistical concepts, measurement levels</p> <p>Reading: Sirkin: Ch. 1, 2, [1] in reader</p>
Session 2	<p>Topic: Measurement levels, gathering data</p> <p>Reading: Sirkin, Ch. 2, 3</p>
Session 3	<p>Topic: Introduction to SPSS, criteria for empirical study, finding data, descriptive statistics</p> <p>Reading: Sirkin, Ch. 4, [2] and [3] in reader</p>
Session 4	<p>Topic: Descriptive statistics, contingency tables</p> <p>Reading: Sirkin, Ch. 5, 6, [4] in reader</p>
Session 5	<p>Topic: Statistical inference, probability distributions</p> <p>Reading: Sirkin, Ch. 7, 8, [5] in reader</p>
Session 6	Midterm Exam

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Session 7	Topic: Statistical inference: significance tests Reading: Sirkin, Ch. 8, 9
Session 8	Topic: Comparing two groups Reading: Sirkin, Ch. 9
Session 9	Topic: ANOVA Reading: Sirkin, Ch. 10
Session 10	Topic: Association in contingency tables Reading: Sirkin, Ch. 11
Session 11	Topic: Chi-squared test Reading: Sirkin, Ch. 12
Session 12	Topic: Student presentations and exam preparation
Session 13	Final Exam