PhD Course in Quantitative Methods

Om kurset

Uddannelse  ph.d.
Undervisningssprog  English
National_online  Kurset vises på den nationale database
Vær  Ph.d.-skolen for samfundsvidenskab og erhverv
Tilmelding  To sign up or for more information contact Cecilie Thorsted Flo at thorsted@ruc.dk.
Kursus starter  31-03-2014
Kursus slutter  04-04-2014
Ects  5

Indhold

General Course Description

The purpose of this course is to provide PhD students with tools to understand quantitative methods, and independently undertake some of the more elementary statistical analysis using their own data or data from other sources. The course covers descriptive statistics and graphical techniques for exploratory analysis of data distributions, including descriptive uses of normal distributions, and exploratory approaches to association for both categorical and continuous variables. At the end of the course, the students are expected to be familiar with the use of statistical methods in major parts of the quantitative social science literature. More specifically, the course has three sub-objectives:

- To provide participants with tools to combine quantitative and qualitative methods using the statistical software package SPSS.
- To show how to get from collection of data to compilation and analysis of data in SPSS.
- To discuss the strengths and weaknesses of multivariate methods, including linear regression analysis and cluster analyses.

The course is offered to PhD students who want to apply quantitative methods to surveys or other data that needs to be handled using a statistical software package such as SPSS. The course aims at giving students an introduction to collection of quantitative data, including preparing surveys, and to use statistical analysis in the handling of quantitative data in SPSS. Participants should ensure that they have access to SPSS which can be downloaded from RUC’s web site.

Participants will submit a description of their project one week before the course (approximately 1-2 pages). The description should also detail data collection if any. Participants who want to bring their own quantitative data are encouraged to do so – if wished; data could be circulated to other participants beforehand for class discussion and exemplifications. It is further expected that interested students bring a template for a questionnaire or similar that will then be processed directly in SPSS during the course. We will provide guidance as close to the individual projects as possible.

There are lectures on statistical theory and practical exercises. Depending on where in the process the individual participant is, there will be a review of own writings or submitted data.

Pris

DKK 5.000 (670 Euro)

The fee will cover coffee, the and lunches all days.

Exception  Danish students, who are a part of the open market for PhD courses - check with you institution.

Litteratur

Course Literature

01. The Quantitative Problem Facing Social Scientists

**Day 1. 09:00 – 10:30**

**Connecting theory and empiri. Causality issues**

What is the difference between descriptive and analytical statistics? How to connect theory and empirical data in a quantitative analysis design? Which causality problems may occur in statistical analysis?

**Day 1. 10:30 – 12:00**

**Mixed methods**

Lecturer: Thorkil Casse.

Reading: Creswell (2012), ch. 8. The link between quantitative and qualitative approaches. Generation of hypotheses.

**Day 1. 13:00 - 16:00**

Lecturer: Thorkil Casse.

The afternoon is dedicated to a refresher of the software package SPSS, based on exercises. The software’s key descriptive features will be presented, and also input and import of data will be discussed. Large internationally comparative survey data, e.g. the European Social Survey (ESS) and other international data bases, will be introduced.

02-a. Questionnaire and survey preparation

**Day 2**

**Questionnaire and survey preparation**

The second day deals with preparing surveys and evaluation of its quality.
Questionnaire construction

Lecturer: Thorkil Casse.


Pitfalls in questionnaires, including discussion of inappropriate or (mis)leading questions. Development of the questionnaire with the later data processing in mind will be reviewed. What type of questions requires simple descriptive analyses, and which sets the stage for more advanced statistical treatment?

Day 2, 10:30 - 12:00

Data preparation

Lecturer: Thorkil Casse.

Introduction to how to recode and clean the data, and how to construct quantitative indicators of complex theoretical concepts.

02-b. Exercises and supervision of participants' projects

Tidspunkt 01/04-2014 kl. 12:00 - 16:00
Sted 25.1-020 - klynge (25)
Underviser M. Azhar Hussain (azharh@ruc.dk)
Indhold

Day 2. 13:00 - 16:00

Exercises and supervision of participants' projects.

Lecturer: M. Azhar Hussain.


03. Quantitative methods

Tidspunkt 02/04-2014 kl. 09:00 - 16:00
Sted 25.1-020 - klynge (25)
Underviser M. Azhar Hussain (azharh@ruc.dk)
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Day 3

Quantitative methods

During the third course day there will be an introduction of various statistical methods. The course provides, inter alia, an introduction to statistical methods such as regression analysis, including handling non-linear relationships, as well as logistic regression and cluster analysis. This part of the course focuses on the statistical methods that are applicable in relation to different types of data sets and variable types.

The day will feature a combination of lectures and exercises.

Day 3, 09:00 - 12:00

Lecturer: M. Azhar Hussain.


Analysis of qualitative variables. Contingency tables. Chi-square statistic for dependence and homogeneity tests involving categorical variables. Computer lab exercises.

Day 3, 13:00 - 16:00

Lecturer: M. Azhar Hussain.


Analysis of quantitative variables. Simple and multiple linear regression including statistical inference and some discussion of data transformations (non-linearity). Computer lab exercises.
04. Use of statistics methods in scientific literature

Day 4

Use of statistics methods in scientific literature
Lecturer: Thorkil Casse.


We look at several examples on how to use statistical methods in testing arguments or hypotheses in social science research. The overarching issue is to discuss options to detect patterns in data and risks of over interpretation, while using quantitative methods.

Critical review of existing quantitative studies
Lecturer: Thorkil Casse.

Three examples form the statistical social science literature are introduced; aid fragmentation among NGOs, critique of meta-analyses of tropical forest management, and secondary school completion in Denmark.

Exercise: interpretation of statistical analysis
Lecturer: Thorkil Casse.

Exercise in interpretation of statistical testing from a scientific article, handed out at the course start.

05. Data collection and possible testing methods

Day 5

Data collection and possible testing methods

Discussion of individual PhD student projects
Lecturers: Thorkil Casse and M. Azhar Hussain.

Reading: Three selected PhD student project (proposals).

We discuss all the submitted project description of each participant. Can quantitative methods be applied to answer the research question(s)? Which kind of method is relevant, and what kind of problems could occur when embarking on a quantitative approach in specific cases? How do I move on, as a PhD student, from completing the course in quantitative methods and then to actually make use of quantitative methods in my research?

Presentation on existing micro data sources for social science research. That will include the EU-Sile, European Social Survey, and World Values Survey.