

STOCKHOLM UNIVERSITY

Department of Sociology



Syllabus

Quantitative Methods in the Social Sciences I

7.5 Credits

Code: SO1FU15

Finalized by: Institutionsstyrelsen, 2024-01-30

Valid from: Autumn semester 2024 (2024-09-02)

Level within study regulation: Third cycle

Course modules Quantitative Methods in the Social Sciences I, 7.5 Credits

1. Entry requirements

No Translation Available

2. Learning outcomes

After successfully completing the course, the students are expected to:

Regarding data management:

- Use statistical software to manage and analyze data.
- Construct variables based on one or more existing variables.
- Clean data of errors and inconsistencies.
- Perform the data transformations required to conduct a successful regression analysis.

Regarding basic statistics with statistical software:

- Describe variables in terms of distribution, percentages, mean, median and variance.
- Perform bivariate analyses.

Regarding OLS regression:

- Understand how regression analysis can be used to investigate social science research questions.
- Understand how regression analysis relates to more basic quantitative methods.
- Independently perform OLS regression analysis and present and interpret the results.
- Understand the applications and limitations of OLS regression.

Critical approach:

- Assess and critically evaluate the limitations in the student's own and others' regression results from OLS analyses.

3. Content

Before the course starts, students need to confirm the use of other statistical software. Regression analysis is a fundamental method in the social scientist's toolkit, and a solid understanding of regression analysis is essential for learning

other quantitative methods. The course assumes some basic understanding of quantitative methods.

The aim of the course is to develop a thorough understanding of the use of regression analysis in the social sciences. The course emphasizes an understanding of the applications and limitations of regression, the relevance of the method's assumptions, and the practical work involved in using regression analysis to investigate social science questions.

The course primarily focuses on the Ordinary Least Squares (OLS) method, analyzing continuous dependent variables.

Students will learn data management and skills specific to performing linear regression analysis using the statistical software package Stata. In particular circumstances, the use of other statistical software packages is allowed packages with the course coordinator.

The methods will be explored based on their two main uses: estimating effects of variables and explaining variation. The course starts with a discussion of simple regression (analysis of the relationship between two variables) and proceeds with multiple regression, discussions of spurious relationships and indirect effects. Variable transformations, categorical variables, interaction terms, and issues like outliers, heteroskedasticity, and multicollinearity are also discussed during the course.

4. Mandatory exams

- Submission and completion of written home and peer-review assignments.
- Attendance and active participation in group workshops.
- Submission of all parts of the final home examination.

5. Forms of examination

Examination consists of individual assignments, a task to be reviewed through peer-review, a task to be assessed during a group workshop (formative assessment), and a home exam.

Individual assignments, peer-review assessments, and group work are graded as pass or fail. All must be passed to receive a final grade for the course.

The final take-home exam consists of two parts. The first part consists of a critical evaluation of an assigned study. The following aspects are evaluated:

1. discussion of the appropriateness of regression analysis for the research problem addressed (1),
2. evaluation of the data, variables, and variable construction (2), and the model specification (3), and
3. evaluation of the interpretation of the results (4) and their potential limitations (5).

The second part involves a small independent study using regression analysis, grading the following aspects:

1. the argumentation around why regression analysis is appropriate for answering the research question (6),
2. data description and choice of variables (7), and data and variable management (8), as well as the chosen model specification (9),
3. handling and discussion of outliers (10), heteroscedasticity (11), multicollinearity (12), and interactions (13)
4. clear (14) and appropriate (15) presentation of regression results,
5. interpretation of parameters (16) and other model results (17) in terms of statistical and substantive significance (18),
6. discussion of results in relation to the research question (19) and limitations of the analysis (20), and
7. appropriate syntax and syntax examples and that are clear and easy to follow (21).

The final grade is based on the 21 dimensions specified above, each graded as Good (2 points), Pass (1 point), and Fail (0 points). Additionally, timely submission of complete individual home-assignments and a complete peer review assignment also earns 2 points each. The total number of points a student can receive is 46.

The final course grade is given as follows:

Pass: 32-46 points

Fail: 23-31 points or failing any of the aspects mentioned above

Students who have received a fail grade on an exam have the right to take additional exams as long as the course is offered in order to achieve at least a pass grade. Students who have received a fail grade on an exam twice from an examiner have the right to request that another examiner be appointed to determine the grade of the exam. Such requests should be made to the director of studies.

Examinations take place continuously during the course, and the final home exam must be submitted by the specified deadline. All other coursework must be submitted no later than one week after the end of the course period to be examined during the current course. If a student does not adhere to this deadline or submits at least one incorrect assignment, a new examination will only take place at the next exam session.

Plagiarism, cheating, and unauthorized collaboration or use of AI

Part of your responsibility as a student is to be aware of the examination rules. Detailed information is available on Stockholm University's website here. Teachers are obliged to report suspected cheating and plagiarism to the rector and the disciplinary board. Plagiarism and cheating are always disciplinary matters and can lead to suspension. An example of plagiarism is to copy a text word for word or almost word for word (including a single sentence or lines of code) without indicating where it comes from. Always ensure the origin of the text or that quotations are used when submitting a text for examination that you did not write yourself. This also applies to texts you have written previously (self-plagiarism).

Having study groups together is stimulating and time-saving, but when it comes to examination tasks, it is important to work independently (unless otherwise clearly stated) to avoid being considered as unauthorized collaboration.

Cheating also includes, for example, the use of unauthorized aids such as mobile phones or generative AI during an examination. The use of generative AI or similar tools in exam tasks without the examiner's explicit permission and without confirmation is considered cheating.

Interim provisions

Students may request that examination according to this syllabus be completed up to three semesters after it expires. The request is to be directed to the Director of Studies. * *This regulation is valid for all assessed parts of the course.

Limitations

Those who have passed the course SO7030 Quantitative Methods in the Social Sciences or SO7032 Quantitative Methods in the Social Sciences I , or equivalent, cannot be accepted to SO1FU15

6. Form of instruction

Teaching is conducted through lectures and data exercises using statistical software.

Course literature

The current reading list is available no later than two months before the start of the course.