

Module Outline

STAT6107 – Analysis of Complex Survey Data

17 – 21- October 2016

1. Aims of Module

The aim of the course is to present methods for statistical modelling and associated tests based on complex survey data, with an emphasis on the impact of differential weighting, stratification and clustering on linear and logistic regression modelling. Hands on exposure to the survey analysis and modelling facilities of the STATA package will form an integral part of this course. The course will also discuss issues associated with testing for goodness of fit and independence using tabulated survey data.

2. Learning Outcomes

By the end of the course you will have a solid foundation in the conceptual issues associated with statistical modelling and testing using complex survey data as well as practical skills in the use of STATA to fit both linear and logistic regression models while accounting for survey weights, stratification and clustering.

3. Key Skills (Pre-Requisites/Required Background)

Since this course is concerned with the interaction of sample design and regression analysis, it will be assumed that you have a strong background in regression modelling as well as in basic sample survey design and estimation. Preparatory work for this course should involve reading / reviewing the basic references supporting the pre-requisite units, namely STAT6093 – Survey Sampling, and STAT6095 – Regression Modelling.

4. Lecturer(s)

Prof. Li-Chun Zhang (module coordinator) – B58/4005, email: L.Zhang@soton.ac.uk

5. Workshop Assistance

Martina Patone, a current PhD student from the Department of Social Statistics and Demography, will be helping out at the computer workshops providing advice on how to use STATA and how to interpret the output.

6. Reading List (Key References)

Skinner, C.J., Holt, D. and Smith, T.M.F. (eds.) (1989). Analysis of Complex Surveys. Chichester: John Wiley.

Chambers, R.L. and Skinner, C.J. (eds.) (2003). Analysis of Survey Data. Chichester: John Wiley.

7. Teaching and Learning Methods

The course comprises a series of classroom lectures intertwined with individual study and computer lab sessions where the students are expected to put in practice the topics presented in class.

8. Lecture Programme, Timetable and Rooms

All lectures and computer workshops will take place in the Seminar Room in Building 39.

Start	End	Activity
Monday		
09:30	10:00	Registration
10:00	10:30	Course overview
10:30	12:00	Introduction: Finite population sampling
12:00	13:00	Lunch
13:00	14:30	Introduction: Inference framework
14:30	15:00	Break
15:00	16:30	STATA Introduction
16:30	17:30	Individual study
Tuesday		
09:30	11:00	Group effects and prevalence (I)
11:00	11:30	Break
11:30	13:00	Group effects and prevalence (II)
13:00	14:00	Lunch
14:00	15:30	STATA Practical Session 1
15:30	16:00	Break
16:00	17:00	Individual study
Wednesday - 8 January		
09:30	11:00	Linear regression (I)
11:00	11:30	Break
11:30	13:00	Linear regression (II)
13:00	14:00	Lunch
14:00	15:30	STATA Practical Session 2
15:30	16:00	Break
16:00	17:00	Individual study
Thursday - 9 January		
09:30	11:00	Testing and model selection
11:00	11:30	Break
11:30	13:00	Logistic regression and log-linear models (I)
13:00	14:00	Lunch
14:00	15:30	STATA Practical Session 3
15:30	16:00	Break
16:00	17:00	Individual study
Friday - 10 January		
09:30	11:00	Logistic regression and log-linear models (II)
11:00	11:30	Break
11:30	12:00	Coursework
12:00	12:30	Evaluation & feedback

9. Availability of STATA for Home PCs

STATA CDs (with single user license codes) will be provided for home use. After submission of the coursework, you are asked to uninstall STATA and return the CDs to Claire Woodley, the MOffStat Programme Administrator. Please note that these are single user licenses and you **MUST** uninstall STATA from your PC so that the licenses can be used in other modules.

10. Blackboard Unit

To access the Blackboard site use Internet Explorer and enter the web address <http://blackboard.soton.ac.uk/>, login and select the “MSc Official Statistics Student Area” site.

Materials for all of the computer workshops, including the worksheets, the datasets, and the solutions, will be made available here. There is also a discussion board on Blackboard so that you can communicate with your fellow students. All students are automatically enrolled on this blackboard site. If you cannot access the site for any reason please let the lecturers know so that you can be enrolled.

11. Assessment Methods

Assessment is based 100% on coursework, reflecting the complex nature of the material that is covered, and the requirement that course participants demonstrate an understanding of how to apply these concepts to data collected in realistic survey sampling situations. The coursework will involve carrying out a set of regression modelling exercises based on survey data.

It is expected that the coursework will be started during the course. The deadline for submission of the assessment is **Tuesday 22 November 2016**. It is policy that all assignments must be submitted electronically via Turnitin.

12. Electronic submission of coursework

- To submit coursework electronically via the TurnitinUK plagiarism device, login to Blackboard, select the specific unit for this module (16-17-Analysis of Complex Survey Data), and select the Assignments link from the left-hand menu. Find the coursework and click View/Complete. There will be a series of screens to complete, and full instructions on how to do this are given on the iSolutions webpages at: <http://www.southampton.ac.uk/isolutions/computing/elearn/blackboard/student/studentplagiarism.html>.
- Turnitin is a plagiarism detection tool, which checks your work against electronic sources and other submissions for the same assignment. You will only be able to submit your assignment once to Turnitin.
- You will also receive an email (maybe up to a day later, but most likely within a few minutes) confirming that you have submitted electronically. You should retain a copy of this email which will act as a receipt for your electronic submission. If you do not receive a submission ID number or an email it means that you have not submitted. If this is the case **you will be penalised**. If you do not receive this email then you should contact the lecturers as soon as possible.

13. Penalty for late submission

The penalty for unauthorised late submission of coursework is as follows:

University working days late	Mark
1	(final agreed mark)*0.9
2	(final agreed mark)*0.8
3	(final agreed mark)*0.7
4	(final agreed mark)*0.6
5	(final agreed mark)*0.5
More than 5	Zero

For example, if your mark is 63% but you submit your work 3 working days late, then your final mark would be $63 \times 0.7 = 44.1\%$.

14. Procedure for coursework extensions

Deadlines are made to be met. If you want to request an extension, you must have medical or personal circumstances to justify the late submission of assessed coursework (medical evidence must be substantiated by a doctor's note).

You should initially fill out a coursework extension request form available at

http://www.southampton.ac.uk/demography/postgraduate/taught_courses/msc_official_statistics.page?

and send it to your Personal Tutor, Mr. Paul Smith (p.a.smith@soton.ac.uk), who will, where appropriate, agree to the extension of the deadline after discussion with the module co-ordinator and examination officer. Under no circumstances will extensions be allowed beyond a period of two weeks.

15. Resit arrangements

No mark below 35% is allowed for any module in the programme. All students receiving below the minimum mark will have to resit the module according to school policy.

16. Academic Integrity

The University places the highest importance on the maintenance of academic integrity in the conduct of its affairs, and the Academic Integrity Statement for Students can be found in the University Calendar available online at <http://www.calendar.soton.ac.uk/sectionIV/academic-integrity-statement.html>. Please familiarise yourself with what is expected of you in this regard by reading through this statement. Your attention is drawn particularly to Appendix 1, which outlines those things which you must seek to avoid, including cheating and plagiarism. A very useful set of interactive guides is available at <http://www.studyskills.soton.ac.uk>. These aim to help you gain a better understanding of academic integrity and develop your skills so that your assessed work does not accidentally plagiarise the work of others.

You must take particular care in using sources in essays/reports and in your dissertation. Remember that plagiarism includes not only verbatim copying but also direct paraphrasing of a source. Verbatim quotes from a source should always be in quotation marks, with the

source indicated, and should be used only occasionally in an essay or other report. Detailed advice on appropriate referencing in essays and dissertations is given in the Department of Social Statistics and Demography “Guidelines on writing essays”.

Students are encouraged to discuss and exchange ideas, since this is an important part of the educational process. However, it is **NOT** acceptable that you read and gain ideas for your coursework from another student’s finished work. Copying includes using another student's computer program, output or graphics. If academic integrity is deemed to have been breached, there are a range of penalties that may be applied.

If you are unsure about what is and is not permitted, ask - we will be happy to explain and discuss.

17. Feedback

‘Feedback’ refers to any instance in which you receive information about how well you understand the material, how successfully you are progressing in the module, or how to improve your performance. Feedback is continuous and does not refer merely to comments on your assessed work (but certainly includes that). Other instances in which you receive feedback include: seminar/tutorial discussions, question time during lectures, replies to questions during computer workshops, interaction with others in any online discussion forum, replies to email questions you send us, discussions with us during the week.

In line with University policy, feedback on your coursework assessment will be provided within four weeks of the submission deadline. You should contact the module coordinator directly if you would like to receive additional details or elaborations.

18. Troubleshooting

Please get in touch with your personal tutor, Mr. Paul Smith (p.a.smith@soton.ac.uk), should any difficulties arise with this module.