SOCI 3229 Quantitative Data Analysis

2nd term, 2019-20

Chen Kou Bun Building LT3, Monday 9:30am – 11:15pm

Instructor: Ting Kwok-fai 丁國輝

Office: Sino Building 434

Tel: 3943 6626

Tutor: Lee Lai Han 李麗嫻

Office: Sino Building 411A

Tel: 3943 6608

Course Objectives:

(1) To understand the logic of statistical analysis
(2) To acquire practical experience with a statistical package (STATA)
(3) To learn regression analysis and modelling techniques
(4) To diagnose potential pitfalls of regression analysis

Assessment: Assignments 40%, Take-home exam 60%

Grade descriptors

A   Thorough understanding of the course materials and outstanding performance on all learning outcomes.
B   Adequate understanding of the course materials and substantial performance on all learning outcomes.
C   Basic understanding of the course materials and satisfactory performance on the majority of learning outcomes, possibly with a few weaknesses.
D   Partial understanding of the course materials and inadequate performance on some learning outcomes.
F   Poor understanding of the course materials and unsatisfactory performance on some learning outcomes.

Course Outline

1   Descriptive statistics

1.1   Theory, concepts, variables & measurements
1.2   Describing distributions
1.3   STATA basics

Bohrnstedt & Knoke, Chapter 1:3–26, Chapter 2:31–60, 63–72

2   Inferential statistics

2.1   Purpose of statistical inference
2.2   Theoretical distributions
2.3   Sampling distribution
2.4   Central Limit Theorem
2.5   Hypothesis testing

Bohrnstedt & Knoke, Chapter 3:77–116

3   Simple regression analysis

3.1   Covariance
3.2   Linear regression model
3.3   Estimation: Ordinary least square
3.4   Model evaluation
3.5   Regression coefficients

Bohrnstedt & Knoke, Chapter 6:191–226

Textbook

Bohrnstedt, G.W. & Knoke, D. 1994. *Statistics for Social Data Analysis*. IL: P.E. Peacock. [UL: HA29 .B724 1994]

Allison, P. D. 1999. *Multiple Regression: A Primer*. CA: Sage. [UL: QA278.2 .A435 1999]

References

Freund, R.J., Wilson, W.J., and Sa, P. 2006. *Regression Analysis: Statistical Modeling of a Response Variable*, 2nd edition. Burlington, MA: Elsevier Academic Press.

Kahane, L.H. 2001. Regression Basics. CA: Sage.

Revised Class schedule

Date		Topics	Tutorials (tentative)
January	6	1. Descriptive statistics	
	13	2. Inferential statistics	
	20	2. Inferential statistics	1st week tutorial
	27	Lunar New Year holiday	
February	3	Class suspended	
	10	Class suspended	
	17	3. Simple regression analysis	
	24	3. Simple regression analysis 4. Multiple regression	2nd week tutorial
March	2	4. Multiple regression	
	9	5. Path analysis and reduced form models	3rd week tutorial
	16	5. Path analysis and reduced form models	
	23	6. Modeling techniques	4th week tutorial
	30	Reading week	
April	6	6. Modeling techniques	
	13	Easter holiday	
	20	7. Regression diagnostics	5th week tutorial
	27	7. Regression diagnostics	
May	4		
	11	Take-home exam due at 11:30 a.m.	