POLITICAL SCIENCE 3NN3
STATISTICAL ANALYSIS OF PRIMARY DATA
Winter 2019

Instructor: Dr. Todd Alway
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Lecture: Tuesdays and Fridays, 3:30-4:20p.m.
Room: KTH B135

Office: KTH 538
Office Hours: Tuesdays 11:00-1:00
Or by appointment

Contents

Course Description

In our previous research methods course (Political Science 2NN3), we explored many of the techniques that you can use to gather primary data. In fact, social scientific research often produces enormous quantities of primary data – on voters, on states, on beliefs, and on actions. The question is, what do we do with the data once we have gathered it? This course will explore some of the statistical techniques that you can use to analyze data. We will approach statistics as a tool that can be used to simplify our analysis of the social world – a tool that can assist us in identifying patterns and relationships between variables.

Course Objectives

By the end of the course students should be able to:

- Understand and interpret quantitative evidence
- Calculate basic Descriptive statistics, Interferential statistics, and Measures of association, by hand
- Analyze data using SPSS

Required Materials and Texts

- Healey, Joseph F., et al., *Statistics: A Tool for Social Research: Fourth Canadian Edition*, Scarborough: Nelson, 2019
- You are required to use a calculator in this course. Any $10 calculator capable of addition, subtraction, multiplication, division, and taking square roots will work. Cellphone calculators are not permissible during tests.

Class Format

This course involves both lectures and tutorials.

Please note: Attending class regularly and keeping up with all the required readings is absolutely critical to your success in this course. The material that we will be exploring is cumulative in nature: missing one or two early lectures might leave you in the position of not understanding any subsequent lectures.

Course Evaluation – Overview

1. Tutorial Participation – 10%
2. Test I – 15%, to be held in class on February 5
3. Test II – 15%, to be held in class on March 19
4. Assignment 1 – 15%, to be emailed to your TA by March 15
5. Assignment 2 – 15%, to be emailed to your TA by April 8
6. Exam – 30%, to be held in the official examination period in April

Course Evaluation – Details

Tutorial Participation – 10%
Tutorials will take place in one of the computer labs. Here you will be given time to explore the wonders of SPSS – learning how to use statistical software to answer research questions using real data.

Test I – 15%, to be held in class on February 5
This test will cover univariate descriptive statistics

Test II – 15%, to be held in class on March 19
This test will cover inferential statistics

Assignment 1 – 15%, to be emailed to your TA by March 15
This assignment will require you to use SPSS to analyze real data (see the tutorial guide).

Assignment 2 – 15%, to be emailed to your TA by April 8
This assignment will require you to use SPSS to analyze real data (see the tutorial guide).

Exam – 30%, to be held in the official examination period
The exam will cover material from lectures, tutorials, and the required readings.

Weekly Course Schedule and Required Readings

Topic 1 (January 8, 2019)

Introduction to quantitative analysis: How statistics can make your life easier, richer, and more fulfilling

Readings:
Healey, Prologue and Chapter 1, pp1-35

Descriptive Statistics:

Topic 2 (January 11-15, 2019)

I - Levels of Measurement and basic descriptive statistics

Readings:
Healey, Chapter 2, pp38-76

Topic 3 (January 18, 2019)

Measures of central tendency

Readings

Healey, Chapter 3, pp77-121

Topic 4 (January 22-25, 2019)

Measures of dispersion

Readings

Healey, Chapter 3, pp77-121

Topic 5 (January 29, 2019)

Probability, the normal curve, and Z scores

Readings

Healey, Chapter 4, pp122-147

Topic 6 (February 1, 2019)

Summary of descriptive statistics and Practice Test

Topic 7 (February 5, 2019)

In-class test

Inferential Statistics:

Topic 8 (February 8-12, 2019)

Sampling, the Sampling Distribution, and estimating population values

Readings

Healey, Chapter 5, 6, pp150-203

Topic 9 (February 15, 2019)

One sample hypothesis testing

Readings

Healey, Chapter 7, pp206-212 only; Chapter 10, pp320-354

Reading week: No Class (February 19-22, 2019)

Topic 9 Continued (February 26, 2019)

One sample hypothesis testing

Readings

Healey, Chapter 7, pp206-212 only; Chapter 10, pp320-354

Topic 10 (March 1 - 5, 2019)

Two sample hypothesis testing

Readings

Healey, Chapter 11, pp355-383

Topic 11 (March 8, 2019)

Analysis of Variance

Readings

Healey, Chapter 12, pp384-415

Topic 12 (March 12, 2019)

Chi squared

Readings

Healey, Chapter 7, pp212-241

Topic 13 (March 15, 2019)

Summary of inferential statistics and practice test

Topic 14 (March 19, 2019)

In-class test

Measures of Association:

Topic 15 (March 22-26, 2019)

Measures of Association I: Nominal Data

Readings
Healey, Chapter 8, pp242-277

Topic 16 (March 29, 2019)

Measures of Association II: Ordinal Data

Readings
Healey, Chapter 9, pp278-319

Topic 17 (April 2-5, 2019)

Measures of Association III: Interval Data

Readings
Healey, Chapter 13, pp416-449

Topic 18 (April 9, 2019)

Review of Term

Course Policies

Submission of Assignments

Please email an electronic copy of your assignments to your Teaching Assistant on the scheduled due date.

Grades

Grades will be based on the McMaster University grading scale:

MARK	GRADE
90-100	A+
85-90	A
80-84	A-
77-79	B+
73-76	B

MARK	GRADE
70-72	B-
67-69	C+
63-66	C
60-62	C-
57-59	D+
53-56	D
50-52	D-
0-49	F

Late Assignments
Please note: late assignments may be subject to a one letter grade per day deduction. For example, an A- assignment received one day late may be reduced to a B+.

Absences, Missed Work, Illness
Requests for extensions should be submitted through the MSAF process:

The expectation for this course is that all components (including tutorial participation, assignments and tests) will be completed.

In the event of an approved absence for Assignment I or II, the Assignment will be due one week from the original due date.

In the event of an approved absence from a test, the make-up test dates are as follows:

Test I: February 8, 4:30 p.m., KTH 503

Test II: March 22, 4:30 p.m., KTH 503

Avenue to Learn
In this course we will be using Avenue to Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

University Policies

Academic Integrity Statement
You are expected to exhibit honesty and use ethical behavior in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behavior can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy.

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

Academic Accommodation of Students with Disabilities

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities.

Faculty of Social Sciences E-mail Communication Policy

Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including TAs), and from students to staff, must originate from the student's own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the student's responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.

Course Modification

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check his/her McMaster email and course websites weekly during the term and to note any changes.