STATISTICAL ANALYSIS OF PRIMARY DATA

POLSCI 3NN3

Summer 2024

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Contents

Course Description 3
Course Objectives 3
Required Materials and Texts 3
Class Format 3
Course Evaluation – Overview 4
Course Evaluation – Details 4
Weekly Quizzes (6 x 5% = 30%), due Sundays by 11:59pm 4
Assignments (2 x 20% + 1 x 30%), due July 15, July 29 and August 9 4
Weekly Course Schedule and Required Readings 4
Class 1 (June 25) – Introduction to Variable-Oriented Research 4
Class 2 (June 27) – Summarizing Data and Frequency Distributions 4
Class 3 (July 2) – Measures of Central Tendency 4
Class 4 (July 4) – Measures of Dispersion I 4
Class 5 (July 9) – Measures of Dispersion II 5
Class 6 (July 11) – Probability and Sampling 5
Class 7 (July 16) – Population Estimates 5
Class 8 (July 18) – Comparing Group Means I: T-Tests 5
Class 9 (July 23) – Comparing Group Means II: ANOVA & Chi-Square 5
Class 10 (July 25) – Association & Categorial Variables 5
Class 11 (July 30) - Association & Ordinal Variables 5
Class 12 (Aug 1) – Association & Ratio-Level Variables 5
Class 13 (Aug 6) - Linear Regressions 5
Class 14 (Aug 8) - Review 5
Course Policies 6
Submission of Assignments 6

Grades 6
Late Assignments 6
Absences, Missed Work, Illness 6
Courses With An On-Line Element 6
Online Proctoring 7
Authenticity / Plagiarism Detection 7
Generative AI: Use Prohibited 7
University Policies 7
Copyright and Recording 7
Academic Accommodation for Religious, Indigenous or Spiritual Observances (RISO) 8
Academic Integrity Statement 8
Conduct Expectations 8
Academic Accommodation of Students with Disabilities 9
Faculty of Social Sciences E-mail Communication Policy 9
Course Modification 9
Extreme Circumstances 9

Course Description

In this course, students will be introduced to basic statistical techniques geared to social scientific research. These quantitative techniques allow us to understand and simplify primary data – particularly large amounts of data - to establish patterns and relationships. Students will apply, compute (personally and through software) and interpret descriptive statistics, inferential statistics and measures association to questions in the domain of political science.

Course Objectives

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

- Compute descriptive statistics, inferential statistics and measures of association;
- Apply SPSS to analyze data;
- Identify appropriate statistical techniques to assess political science questions; and
- Demonstrate a basic literacy of quantitative output.

Required Materials and Texts

Noack, Andrea. 2018. *Social Statistics in Action: A Canadian Introduction*. Don Mills: Oxford University Press.

> Copy available online, including the publisher's website. Note that students have access to online resources associated with the textbook.

Class Format

This course will be delivered in a hybrid format. While there will be in-person lectures, these will be recorded and put online. These videos should be accessible within 24 hours of the lecture on Avenue to Learn. Class lectures will usually be broken in two parts: a lecture on the topic and an SPSS tutorial exercise. All course evaluation will be submitted online through Avenue to Learn.

As McMaster students, you have institutional access to SPSS through Microsoft Remote Desktop. This is a virtual desktop that can be accessed from off-campus. For more information, consult here. This resource can be accessed through a desktop app or conventional browser. While the software requirements of a virtual desktop are not intensive, students are expected to either have a computer than can meet these requirements or use a McMaster computer on-campus.

Course Evaluation – Overview

1. Weekly Quizzes – (6 x 5%) = 30%, due Sundays (June 30, July 7, July 14, July 21, July 28, August 4)
2. Assignments – (2 x 20%, 1 x 30%) = 70%, due July 15, July 29 and August 9

Course Evaluation – Details

Weekly Quizzes (6 x 5% = 30%), due Sundays by 11:59pm

Each week (minus the last), you will complete short quizzes on A2L. These quizzes will open Friday mornings and must be completed by Sunday night (11:59pm). To ensure fairness and academic integrity, quiz questions may be drawn from a wider pool but slightly different prompts (e.g. differing numeric values but same premise).

Assignments (2 x 20% + 1 x 30%), due July 15, July 29 and August 9

These assignments are more comprehensive than the quizzes. They will include a combination of SPSS exercises, output interpretation and (where relevant) personal computation. Assignments must include SPSS output but this output must also be interpreted. While each assignment has a focus (eg. inferential statistics), they are also cumulative (builds on the last). That is, techniques from assignment 1 may be expected in the next. The three assignments – available online at least one week prior to their due date - are as follows:

Assignment 1 (20%) – Descriptive Statistics, due July 15 at 11:59pm

Assignment 2 (20%) – Inferential Statistics, due July 29 at 11:59pm

Assignment 3 (30%) – Measures of Association, due August 9 at 11:59pm

Weekly Course Schedule and Required Readings

Class 1 (June 25) – Introduction to Variable-Oriented Research

Readings: Noack, Chapter 1

Class 2 (June 27) – Summarizing Data and Frequency Distributions

Readings: Noack, Chapter 2

Notes: Quiz 1 due June 30 at 11:59

Class 3 (July 2) – Measures of Central Tendency

Readings: Noack, Chapter 3

Class 4 (July 4) – Measures of Dispersion I

Readings: Noack, Chapter 4

Notes: Quiz 2 due July 7 at 11:59

Class 5 (July 9) – Measures of Dispersion II
Readings: Noack, Chapter 4

Class 6 (July 11) – Probability and Sampling
Readings: Noack, Chapter 5

Notes: Quiz 3 due July 14 at 11:59 ; Assignment 1 due July 15 at 11:59

Class 7 (July 16) – Population Estimates
Readings: Noack, Chapter 6

Class 8 (July 18) – Comparing Group Means I: T-Tests
Readings: Noack, Chapter 7

Notes: Quiz 4 due July 21 at 11:59

Class 9 (July 23) – Comparing Group Means II: ANOVA & Chi-Square
Readings: Noack, Chapter 8 & 9 (only pp. 278-287)

Class 10 (July 25) – Association & Categorial Variables
Readings: Noack, Chapter 9

Notes: Quiz 5 due July 28 at 11:59 ; Assignment 2 due July 29 at 11:59

Class 11 (July 30) - Association & Ordinal Variables
Readings: Noack, Chapter 9

Class 12 (Aug 1) – Association & Ratio-Level Variables
Readings: Noack, Chapter 10

Notes: Quiz 6 due Aug 4 at 11:59

Class 13 (Aug 6) - Linear Regressions
Readings: Noack, Chapters 11 & 12

Class 14 (Aug 8) - Review
Notes: Assignment 3 due Aug 9 at 11:59

Course Policies

Submission of Assignments

Assignments are to be submitted through Avenue to Learn in the appropriate folder. The following submission formats are acceptable: docx, doc and pdf. Any technical troubles submitting documents prior to their due dates should be raised immediately with the instructor.

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
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

There will be a penalty of 2% per late day, including weekends. Students are permitted two free late days without penalty. These late days are used automatically chronologically (no e-mails needed). Due to the truncated timeframe of the term, assignments submitted 7 days past their original due date may not be accepted.

Absences, Missed Work, Illness

McMaster Student Absence Form (MSAF): In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “Requests for Relief for Missed Academic Term Work”.

Courses With An On-Line Element

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, 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 a course that uses on-line elements will be deemed consent to this

disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

Online Proctoring

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

Authenticity / Plagiarism Detection

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

Generative AI: Use Prohibited

Students are not permitted to use generative AI in this course. In alignment with McMaster academic integrity policy, it "shall be an offence knowingly to … submit academic work for assessment that was purchased or acquired from another source". This includes work created by generative AI tools. Also state in the policy is the following, "Contract Cheating is the act of "outsourcing of student work to third parties" (Lancaster & Clarke, 2016, p. 639) with or without payment." Using Generative AI tools is a form of contract cheating. Charges of academic dishonesty will be brought forward to the Office of Academic Integrity.

University Policies

Copyright and Recording

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized

distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

Academic Accommodation for Religious, Indigenous or Spiritual Observances (RISO)
Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students should submit their request to their Faculty Office ***normally within 10 working days*** of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

Academic Integrity Statement

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

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 behaviour 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. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at https://secretariat.mcmaster.ca/university-policies-procedures- guidelines/.

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

Conduct Expectations

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

Academic Accommodation of Students with Disabilities

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University's Academic Accommodation of Students with Disabilities policy.

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.

Extreme Circumstances

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.