Fall 2025
Brown School
Washington University in St. Louis

Statistical Analysis for Social Policy

Workday Subject	SPGN	Workday Course Number	6025-01	Section	01

Credit Hours/Units	3	**Grade Option**	For Credit
Instructor Name	Jenine Harris	**TA Name**	Odalis Hernandez
Instructor Email	harrisj@wustl.edu	**TA Email**	h.odalis@wustl.edu
Instructor Office Hours	Mondays 11am–1pm (zoom)	**TA Office Hours**	Thursday 1pm–3pm (zoom), Tuesday 4pm–5pm (in person)
Room Location		**Delivery Mode**	in-person
Class Meeting Time(s)	Tuesdays 1pm–4pm	**Instruction Type**	Lecture
Pre-Requisites		**Co-Requisites**	

1) Course Domain and Boundaries

Most social policy analysis, advocacy, and practice is grounded in evidence. Good evidence is required to understand populations needs, policy impacts, successful program implementation, and other concerns that impact the entire policy system. But what constitutes "good" evidence? How can we analyze, interpret, and communicate data in a way that produces good evidence that can improve social policy design and implementation?

The purpose of this course is to give students the knowledge of basic statistical logic and statistical analysis, while also providing students with an understanding of ethical data practices and effective policy communication approaches. Students will be encouraged to develop their own social policy research questions, conduct independent analyses of those questions, and to identify ways of communicating their findings to different policy audiences and stakeholders.

2) Learning Objectives

Students will develop understanding and skills in:

- Introductory statistical principles and terminology
- Differences between quantitative and qualitative data

- Data collection, management, and quality-assurance techniques
- Research designs for correlational and causal analyses
- Univariate and bivariate analysis
- Statistical inference and hypothesis testing
- Multivariate linear models
- Communicating evidence to different key stakeholders in the policy ecosystem, including policymakers, practitioners, and the public
- Considerations for ethical and equitable data practices, and approaches to minimizing risks or harms in data collection and analysis

3) Competencies Addressed in this Course

MSW Competencies (CSWE 2022 EPAS)	
Demonstrate ethical and professional behavior	C1
Engage anti-racism, diversity, equity, and inclusion (ADEI) in practice	C3
Engage in practice-informed research and research-informed practice	C4
Engage in policy practice	C5

4) Washington University Academic Support Policies

ACADEMIC INTEGRITY

In all academic work, the ideas and contributions of others (including generative artificial intelligence) must be appropriately acknowledged and work that is presented as original must be, in fact, original. You should familiarize yourself with the appropriate academic integrity policies of your academic program(s).

UNAUTHORIZED RECORDING AND DISTRIBUTION OF CLASSROOM ACTIVITIES & MATERIALS

The following applies to all students in my class: "Except as otherwise expressly authorized by the instructor or the university, students may not record, stream, reproduce, display, publish or further distribute any classroom activities or course materials. This includes lectures, class discussions, advising meetings, office hours, assessments, problems, answers, presentations, slides, screenshots or other materials presented as part of the course. If a student with a disability wishes to request the use of assistive technology as a reasonable accommodation, the student must first contact the Office of Disability Resources to seek approval. If recording is permitted, unauthorized use or distribution of recordings is also prohibited."

DISABILITY RESOURCES (DR)

WashU supports the right of all enrolled students to an equitable educational opportunity and strives to create an inclusive learning environment. In the event the physical or online environment results in barriers to your inclusion due to a disability,

please contact WashU's Disability Resources (DR) as soon as possible and engage in a process for determining and communicating reasonable accommodations. As soon as possible after receiving an accommodation from DR, send me your WashU Accommodation Letter. Remember that accommodations cannot be applied retroactively. https://disability.wustl.edu/

SEXUAL HARASSMENT AND ASSAULT

If you are a victim of sexual discrimination, harassment or violence, we encourage you to speak with someone as soon as possible. Understand that if you choose to speak to me as an instructor, I must report your disclosure to my department chair, dean, or the Gender Equity and Title IX Compliance Officer, which may trigger an investigation into the incident. You may also reach out to the Relationship & Sexual Violence Prevention (RSVP) Center to discuss your rights and your options with individuals who are not mandatory reporters. https://titleix.wustl.edu/students/confidentiality-resources-support/

RELIGIOUS HOLIDAYS

To ensure that accommodations may be made for students who miss class, assignments, or exams to observe a religious holiday, you must inform me in writing before the end of the third week of class, or as soon as possible if the holiday occurs during the first three weeks of the semester. For more information, please see the university's Religious Holiday Class Absence Policy.

EMERGENCY PREPAREDNESS

Before an emergency affects our class, students can take steps to be prepared by downloading the WashU SAFE App. In addition, each classroom contains a "Quick Guide for Emergencies" near the door.

RESOURCES FOR STUDENTS

WashU provides a wealth of support services that address academic, personal, and professional needs. To start exploring resources that can help you along the way, please visit: Resources for Students.

5) Brown School Academic Support Policies

BROWN SCHOOL STUDENT HANDBOOK

While students may see themselves closely tied to their individual school or program, all students are held to both the standards of the university and its departments. Brown School Academic Policies and Supportive Services are built upon the Academic Support Policies of Washington University, while specifying processes that are specific to our professional programs.

The Brown School has a Student Handbook which is a repository of information,

policies, and processes for success for students at the Brown School. All students are expected to review and adhere to these guidelines. Please address questions regarding any of the policies outlined in the Handbook to the Associate Dean of Student Affairs & Enrollment Management. Access to the Student Handbook can be found on the University Bulletin here. https://bulletin.wustl.edu/brownschool/policies/

Policies and processes related to Brown School academic expectations are as follows:

PROFESSIONAL INTEGRITY

The Brown School expects that students conduct themselves in a manner consistent with the Washington University Student Code of Conduct on campus, off-campus and on-line when engaged with colleagues, including faculty, staff, fellow students, practicum supervisors, clients, and other constituents in University-sponsored or related programs and/or activities.

As a professional graduate school, the Brown School trains and prepares students for work with clients, colleagues and communities facing challenging circumstances. Violations of professional integrity reflect problematic conduct and behaviors rather than scholarly products. Professional integrity violations consist of behavior inconsistent with professional or ethical standards within their field of practice. Evidence that a student fails to meet these standards may come from many sources. These can include observation of student behavior in the classroom or practicum site, including interactions with peers, faculty, staff, or community members. Evidence can also include information from personal statements; self-assessments; recorded interviews.

The Brown School centers student conduct expectations consistent with the Code of Ethics adopted by the National Association of Social Workers. Students are responsible for familiarizing themselves with the professional Code of Ethics.

Referrals for violations of professional integrity are made to the Associate Dean of Student Affairs & Enrollment Management. If violations cannot be addressed through an initial meeting, students may be asked to participate in a hearing with a Professional Integrity Committee. The outcome of these hearings may result in sanctions or, depending on the seriousness of the violation, expulsion from the program.

ACADEMIC INTEGRITY

As a professional graduate school, the Brown School trains and prepares students for work with clients, colleagues, and communities facing challenging circumstances. This work requires individuals to display the highest professional and academic standards. Academic integrity violations are behaviors inconsistent with academic and ethical standards in the production and submission of scholarly work. Violations of academic integrity are an attempt by a student to misrepresent the scholarly work of another individual as their own or misrepresenting their scholarly competency. Activities considered violations of academic integrity include cheating, plagiarism, use of unauthorized writing sources, unauthorized use of AI generated content and misrepresentation of one's own work when not approved by the instructor.

It is the student's responsibility to familiarize themselves with the behaviors that constitute an academic integrity violation requiring referral. It is also the responsibility of the student to understand the expectations of their individual instructors.

If a faculty member or student suspects that academic integrity has been violated, they can submit an Academic Integrity Report found on the Office of the Provost's Academic Integrity website. Once a report has been made, an investigation will occur to gather relevant evidence of the charge. Evidence gathering may involve conversations with the instructor, student(s) involved, witnesses, or others as needed. Based upon the evidence of the investigation, students may be asked to participate in a meeting with the Academic Integrity Board Panel for the determination of appropriate action. See the Academic Integrity policies and procedures at:
https://provost.washu.edu/vpei/academic-integrity/

ACCOMMODATIONS DUE TO DISABILITY

The policies for applying for and receiving accommodations in the classroom are outlined in the policies of the University. Classroom accommodations are only approved by the university's Office of Disability Resources. Students receiving university approved accommodations are expected to communicate classroom accommodations with their instructor and create a shared plan for student success. Students who do not receive classroom accommodations through Disability Resources may not be provided individual accommodations by their classroom instructor.

ATTENDANCE

While instructors have the right to create their own attendance policies, excessive absenteeism creates challenges for instructors to adequately assess progress in the classroom and through the program. As a professional graduate school, the Brown School trains and prepares students for work with clients, colleagues, and communities facing challenging circumstances. Being present is a competency of practice and students are expected to attend all classes and appropriately communicate with faculty if an absence is needed for an extenuating circumstance.

Excessive absenteeism can be defined as missing over 20-25% of the contact hours for a course. This would be three or more courses over a 15-week semester, the morning or afternoon of a weekend course, a full day of an intensive course, etc. It is the responsibility of the student to ensure their availability to fully attend a course for which they have registered. It is also the student's responsibility to understand each instructor's absentee policy. Excessive absenteeism can lead to a referral to the Associate Dean of Student Affairs & Enrollment Management. Referrals can lead to outcomes ranging from supportive services to withdrawal from the program.

IRREGULAR COURSE TIMES

As a professional degree program, the Brown School offers courses to accommodate the timing for various needs. While the Brown School works to recognize the observance of religious holidays and university-scheduled breaks, there may also be times when

classes are scheduled that conflict with them. This may include times over weekdays, evenings, weekends, and intensive weeklong course offerings. Courses may also occur during university-scheduled breaks during the fall, winter, and spring. Students should be cognizant of the scheduled course times for which they have registered and their own personal needs.

ADDITIONAL SUPPORTS

If you feel that you need additional support services or resources to be successful during your time at the Brown School, please reach out to the Student Support Team. They can assist you in navigating a myriad of concerns. The Student Support Team can be reached here or at https://insidebrown.wustl.edu/students/support-services-and-resources.

6) Faculty-Specific Classroom Policies and Expectations

Role of Faculty and Student

Faculty Role: The instructor will facilitate the student's learning experience through demonstrations, activities, exercises, exams, and outside consultation with students. The instructor will provide timely feedback on student performance.

Expectations for Students: Students are expected to attend class on time and be prepared; complete all required readings and assignments in a timely manner; and participate actively in class. If any student has problems with attendance, meeting deadlines, or completing work on/by a given date, it is important that these difficulties be discussed promptly with the instructor.

Attendance Policy

There is no attendance requirement in this class, however, if you miss book club, an alternative assignment will be required in lieu of your participation in the class period.

Academic Integrity and Use of AI Policy

ChatGPT and other AI tools are being widely used in workplaces and can be very helpful in coding and writing. However, using AI tools before understanding the basics of coding or of interpretation of your results is not ideal because you may not know when the tools are giving you bad information, which is about 52% of the time for coding according to this study. In the second half of this course we will learn some basic prompt engineering for effective use of ChatGPT for coding in R. While use of ChatGPT/AI will *not* be prohibited nor monitored in the course, it is highly recommended that you use ChatGPT only for coding and write your own interpretations. It is also highly recommended that you try to learn the basics of coding without using ChatGPT for the first several weeks and then start to use ChatGPT as a co-pilot for writing code so that you have a foundation for identifying bad or inefficient code provided by ChatGPT.

At any point during the semester, Prof Harris may ask to meet with you and ask that you explain your submitted work in person. Your explanations in these sessions may be considered in the scoring of your work. **Bottom line, it is your responsibility to**

understand and be able explain <u>everything</u> you submit in this course whether you use AI tools to create it or not!

7) Organization of Course

<u>Format of Course</u>
The course meets every Tuesday from 1–4pm. You should expect about 2 hours of preparation time for every in-person hour of class. For a class like this one that meets 3 hours per week, expect 6 hours outside of class spent on reading, watching videos, and coding.

This class is designed to be inclusive. By **inclusive** I mean that the course is designed to allow *everyone* to be successful. Inclusive teaching tends to include co-creation of knowledge, collaboration, flexibility, and choice, which differs from the traditional lecture model where information is transferred in one direction from instructor to student. Instead of a lecture format, most statistical concepts will be conveyed through readings and videos. Then, during class, we will spend most of the time putting the concepts into practice by doing hands-on activities applying the information to real-world data sets. In-class workshops may resemble what you might usually consider homework.

On a few weeks we will not have in-class workshops and instead will have a course book club, project work time, and final project reviews. Some weeks will have shorter workshops or will only complete part of a longer workshop to accommodate policy expert guest speakers.

The course work is designed to introduce you to statistical approaches common in the social sciences. In addition to the hours you spend in class each week, expect to spend approximately <u>6 hours each week</u> reading, reviewing course materials, and working on exercises. The total course commitment should be about 9 hours/week on average over the course of the semester.

If you are working on coursework outside of class time and your books and other materials do not contain enough information for you to complete the work, there are multiple options for you to get help:

1. Check the UCLA statistics website, youtube, and other online resources
2. Email the instructor or TA
3. Go to the instructor or TA office hours
4. Make an appointment with the StatLab
5. Make a one-on-one appointment outside office hours with the TA or instructor

The instructor and TA will attempt to respond to email within 24 hours during the course, although it may be longer if you request help during the weekend.

<u>Use of Learning Management System</u>
Canvas will be used for distributing the syllabus and readings or videos outside of the main books. Canvas will also be used for submitting assignments, receiving feedback, and checking scores. Sign-ups for appointments with the Instructor and the TA can be made through Canvas.

8) Materials, Assignments, and Grading Criteria

Required Course Readings and Materials

There are 2 course books:

(1) *Statistics with R: Solving Problems Using Real-World Data (Jenine K. Harris)***
- The first 3 chapters are available free online from the publisher
- Brown School library has 3 copies of this book on reserve
- Rent print book from Chegg (cost: $53 for a semester)
- Rent eBook from Amazon, RedShelf, VitalSource (cost: Approximately $85/6 months)
- Purchase direct from Sage or Amazon or another source (cost varies)

(2) *Invisible Women: Data Bias in a World Designed for Men (Caroline Criado-Perez)*
- This book is on reserve at the Brown School library and is widely freely available to borrow at public libraries in hard copy, audiobook, and eBook
- You may be able to find a version of this book translated to another language if that is of interest; there is no requirement to read it in English

**alternative readings to the textbook can be provided on request if a student prefers a different source for primary course topics material, however, this may require accessing different books which this would be the responsibility of the student requesting the alternative readings

Assignments

Statistics in the wild (15%) DUE NOV 4

Choose ONE of the following projects to complete ON YOUR OWN. The purpose of this project is to introduce sources of statistics information and voices in statistics outside this course. This is a very exciting and critical time for statistics, with a rapidly developing focus on bias and how the data community can work to reduce or eliminate bias in data science along with an increasing focus on research quality and reproducibility. Many of the options listed will address one or both of these areas. These projects are designed to take 8–10 hours total, so plan accordingly. Timing may vary based on how quickly (or slowly) you read, write, and code. If you use ChatGPT, other AI, or other outside resources to help you complete the work, citation is required.

(1) Participate in an online statistics or R coding workshop and create a brief tutorial or video to teach others about something you learned at the workshop. Choosing a tutorial about data management, data visualization, or bias in data science are recommended. The tutorial product you create should be an R code, Quarto, or R-Markdown file and a short video demonstrating something from the tutorial (about 10-minute video length). Assume that your audience is the other students in your course. Post the video and R file on the course discussion board.

(2) Read *Rigor Mortis* by Richard Harris or *Science Fictions* by Stuart Ritchie or *Weapons of Math Destruction* by Cathy O'Neil or *Factfulness* by Hans Rosling or *Algorithms of Oppression* by Safiya Noble, record a 10 minute *(no fewer than 8 minutes, no more than 12 minutes)* review of the book, and post your review video to the discussion board. The review can include audio and video of you or audio of you with slides or other visual components if you would rather not be on camera. The review should include a brief summary of the main topic or topics in the book and two or three examples of how the book connects to your life or has influenced your perspective (personal or professional). At the end of the recording you might consider providing a recommendation for other students in your degree program. Was it worth the time to read or not? Post the video on the course discussion board.

(3) Listen to a minimum of 4 hours of statistics or R related podcast(s), record a 10-minute review *(no fewer than 8 minutes, no more than 12 minutes)*, and post your review to the discussion board. The review can include audio and video of you or audio of you with slides or other visual components if you would rather not be on camera. The review should include a brief a summary of the topics in the episodes you listened to and at least two examples of how the topics connect to your life (personal or professional). The names of the episodes should be included either in the video or in the post. Email Dr. Harris a cat or statistics meme by October 1st to earn 1% to add to your final project score. At the end of the recording you might consider providing a recommendation for other students in your degree program—was it worth the time to listen the podcast or not? Include a link to the podcast website in your post so that others can find it. Post the video on the course discussion board.

(4) Identify a quantitative published article that uses a publicly available data set like NHANES or BRFSS, or an article you are able to obtain the data for in some other way. Reproduce a table or figure from the article as closely as you can using R. Record a brief informal video (up to 10 minutes) walking through your project, including any challenges you faced, and post it on the class discussion board. Attach (1) the document containing the table or figure you reproduced, (2) a Quarto or R-Markdown file that includes the R code you used to reproduce the figure or table, (3) the data (if possible), and (4) the reproduced version of the figure or table. Note: it is often much more challenging than it looks to reproduce a table or figure and can take a lot longer than it seems like it should take. I HIGHLY recommend choosing a table of descriptive statistics or a simple figure. This is a great project for those of you interested in coding and wanting extra development of coding skills.

Statistics in the Wild projects will be graded as complete (100), partial (70), or incomplete/missing (0). See schedule in the syllabus for due date and **plan ahead**!

Book club (10%) IN-CLASS NOV 18

We are reading *Invisible Women: Data Bias in a World Designed for Men* by Caroline Criado-Perez. For book club you will be assigned to a team by the topic you are most interested in and your team will be responsible for leading a class discussion or activity

on the topic **for approximately 30 minutes**. The discussion or activity will take place over zoom during class time. The discussion or activity should include opportunities for participation by other students in the class with clear instructions for how to participate. Please let Dr. Harris know if your team is using additional technology and you would like to test it ahead of time. The discussions/activities should be planned so that they work via zoom.

Additional details and topic sign-up will become available when book club gets closer. Like Statistics in the Wild, the book club team scores will be complete (100), partial (70), or incomplete (0). Contributing to your book club team is part of the professionalism score in class and your team will be asked to evaluate your contribution. It is possible that students on the same team will receive different professionalism scores or overall book club scores if peer-evaluations indicate a lack of contribution by one or more team members.

Course project (70%)

Course project data and topic options

Select a data set and use the data to answer a research question of your choice. You will work on this data throughout the semester and submit your work to the course discussion board four times, three times at checkpoints and once at the end of the semester as a full project. The format of the course project will be a reproducible research poster and research brief rendered directly from R. Students are highly encouraged to submit their class poster to Research Without Walls in spring semester; this is a student research symposium and great opportunity to practice talking about your graduate work in a setting outside class (plus you can add it to your resume and they have pizza!).

Below are several policy-related topics each with a related data set. You are welcome to choose your own topic and data set, and it does not have to be policy related as long as it meets the project requirements. If you choose your own topic, you must find a feasible data set and meet with Dr. Harris to discuss the data set and topic **before the Checkpoint 1 due date (no extensions)**. If the data do not meet project requirements, or if you run out of time to meet, you will need to switch to one of the data sets below. The General Social Survey (2022) has a lot of additional policy variables, so if none of these topics is of interest, review the codebook.

* Note: If you choose one of the ideas below with ATP data, the demographics are all explained in a separate codebook found in this document and are not listed in the individual codebooks; demographic data ARE included in the data sets.

A) US policies about voting and representation
   (1) Replacing electoral college with popular vote (ATP W130)*
   (2) Changing the number of representatives or senators per state based on population (ATP W130)*
   (3) Automatically registering all eligible citizens to vote (ATP 130)*

(4) Requiring all voters to show government-issue photo identification to vote (ATP 130)*

B) US economic policies
(1) Are we spending too much, too little, or about the right amount on welfare, social security, assistance for poor (GSS 2022)
(2) Addressing the income gap between rich and poor (GSS 2022)
(3) Are we spending too much, too little, or about the right amount on national defense (GSS 2022)
(4) Federal income tax rates (GSS 2022)

C) Drugs, alcohol, and marijuana policies
(1) Alcohol and marijuana consumption (BRFSS) and policy adoption data (APIS)
(2) Youth alcohol, marijuana, and other drug consumption (Monitoring the Future) and policy adoption data (APIS)
(3) Are we spending too much, too little, or about the right amount on drug rehabilitation (GSS 2022)
(4) Marijuana legalization (GSS 2022)

D) US policies about the environment
(1) Developing alternative energy sources v. expanding oil, coal, and natural gas (ATP W67)*
(2) Protecting air quality, water quality, animals and habitats, national parks (ATP W67)*
(3) Reducing climate change (ATP W67)*
(4) Corporate carbon emission taxation, fuel efficiency standards, planting trees (ATP W67)*
(5) Are we spending too much, too little, or about the right amount on parks and recreation, alternative energy sources, protecting the environment (GSS 2022)

E) US gun policies
(1) Support for restrictions on gun ownership including waiting periods (ATP W129)*
(2) Support for concealed carry policies (ATP W129)*
(3) Support for teachers and school officials to carry guns in K-12 schools (ATP W129)*
(4) Would you favor or oppose a law which would require a person to obtain a police permit before he or she could buy a gun? (GSS 2022)

F) US policies about gender identity

(1) Access to public bathrooms, jobs, housing, public spaces, health insurance (ATP W109)*
(2) Teaching about gender identity (ATP W109)*
(3) Transgender athletes competing (ATP W109)*
(4) Medical care for gender transitions (ATP W109)*

G) Policies about online information and violence
(1) Government should restrict violent online content (ATP W129)*
(2) Government should restrict false information online (ATP W129)*

H) Immigration and foreign aid policies
(1) Immigration policies like deportation and encouraging specific immigration types (survey of Asian Americans, GSS 2022)
(2) Immigrants and crime, jobs (GSS 2022)
(3) Are we spending too much, too little, or about the right amount on foreign aid, assistance to other countries (GSS 2022)

I) US education system
(1) Should colleges consider demographic and economic factors for admission (survey of Asian Americans)
(2) Are we spending too much, too little, or about the right amount on improving the education system (GSS 2022)
(3) Would you be for or against sex education in the public schools? (GSS 2022)

J) Health
(1) Abortion policy (GSS 2022)
(2) Assisted suicide (GSS 2022)
(3) Are we spending too much, too little, or about the right amount on health (GSS 2022)

Example policy briefs:

- https://www.healthaffairs.org/do/10.1377/hpb20210518.36548/full/health-affairs-brief-cannabis-policy-haffajee.pdf
- https://bpb-us-w2.wpmucdn.com/sites.wustl.edu/dist/1/2391/files/2024/09/CAHSPER-brief_MFH_Uninsured_091224j.pdf
- https://www.mhanet.com/mhaimages/advocacy/PolicyBrief_Preventing_NAS_0618.pdf
- https://www.un.org/sites/un2.un.org/files/our-common-agenda-policy-brief-emergency-platform-en.pdf
- https://bpb-us-w2.wpmucdn.com/sites.wustl.edu/dist/f/1141/files/2024/06/MO-Childcare-Wage-Supplement-One-Pager_FINAL.pdf
- https://truman.missouri.edu/sites/default/files/mpj-issue-9-article-2-low-sanders-white.pdf

The data set you select **must** fit one of the two following options:

- Option 1: Your data set contains the following (RECOMMENDED):
  - A categorical outcome variable: A variable representing something you are interested in understanding better that measured in categories with 3 or more categories (e.g., smoking status measured as never smoker, former smoker, current smoker)
  - 3 predictor variables: 3 variables that you hypothesize might help to explain the outcome variable (e.g., education level is often associated with smoking status, so educational attainment in years could be a predictor variable). At least one of the variables must be continuous and at least one must be categorical.
- Option 2: Your data set contains the following:
  - A continuous outcome variable: A variable representing something you are interested in understanding better that is measured in a continuous way (e.g., amount of time spent sleeping on an average day measured in hours such as 7.4 hours sleeping)
  - 3 predictor variables: 3 variables that you hypothesize might help to explain the outcome variable (e.g., number of children under 5 living with you could explain amount of time sleeping, so this could be a predictor variable). One of the variables must be continuous, one must be categorical with only two categories, and one categorical with 3 or more categories.
- **Checkpoint 1 is worth 5% of your course grade and has the following requirements (DUE SEPT 23)**
  - A link to the codebook online or a copy of the codebook file
  - A link to the data set online or a copy of the data file
  - The R code file you are working in that includes the following as comments:
    - Research Purpose
      - A question or statement that explains the specific purpose of the project (e.g., Do education level, age, and urban/suburban/rural residence help to explain physical activity?)
    - Data Description
      - Statements that answer:
        - When were the data collected? (the year)
        - How were the data collected? (by survey? Something else?)
        - How many observations and variables are there in the full data set?
    - Variable Measurement

        - How were the outcome and predictors recorded? For each variable include:
            - The data type (continuous or categorical)
            - The categories (if categorical) or the possible values (if continuous)
            - How missing values are indicated (NA, 999, etc)
- Code to conduct the following analyses:
    - A summary() or table() function to show basic information for <u>each of the variables you will use</u>. This should only be for the 4 variables you are using and can be raw data without data cleaning OR clean data. The purpose is to make sure you have selected variables that can be used (e.g., they do not have 90% missing data). Be sure your code works before you submit!

- **Checkpoint 2 is worth 20% of your course grade and should include the following (DUE OCT 21)**

    - Everything submitted for Checkpoint 1 with revisions based on instructor feedback
    - The following additions to your R code file:
        - Descriptive statistics with interpretations
            - Code that generates participant characteristics for the people in your data set as a single table including <u>appropriate</u> descriptive statistics for each variable including the outcome and predictor variables
            - Statements and / or graphics describing the assumption checking you did to choose the descriptive statistics (e.g., how did you choose between mean and median for each continuous variable)
            - Interpretations of descriptive statistics with one bullet point per variable (e.g., The median age of participants was 47 (IQR = 13).)
        - Bivariate graphs with interpretations
            - A well-formatted graph showing the relationship between the predictor and the outcome for each predictor (3 total graphs)
            - A sentence interpreting the patterns you see in the graph (e.g., This graph shows that higher ages are associated with lower levels of physical activity.)
            - A sentence with support for your interpretation that includes descriptive statistics (e.g., The median age for the lower physical activity group was 52 (IQR = 12) while the median age for the higher physical activity group was 34 (IQR = 15).)
    - A small percentage of your score will be based on your reviews of other student checkpoint 2 discussion board posts

- **Checkpoint 3 is worth 15% of your course grade and should include the following (DUE NOV 25)**
    - Everything from Checkpoint 2 with revisions from instructor and peer feedback
    - Add one inferential test: Identify the predictor you think has the strongest relationship with your outcome variable based on your graphs and conduct the appropriate inferential test (e.g., chi-squared, t-test, or ANOVA) to determine if there is a statistically significant association between this predictor and the outcome. Include:
        - A statement explaining which statistical test was conducted and why it is appropriate for analyzing the relationship between your predictor and outcome
        - A statement summarizing the results of assumption checking for the statistical test you selected
        - A statement reporting the results of the statistical test
        - 2–3 statements reporting on standardized residuals (chi-squared) or post-hoc test results (ANOVA or it's alternate test) when used
    - A small percentage of your score will be based on your reviews of other student checkpoint 3 discussion board posts

- **Final submission is worth 30% of your course grade and should include the following (DUE DEC 9)**
    - Connect your R code file to the poster R Markdown file
        - Select and show relevant output from your R code file in the appropriate places on the R Markdown poster template
        - Add comments summarizing your findings to answer the original research question and a minimum of 2 recommendations stemming from what you found (the recommendations should not include any variation of "do more research" — think about what interventions or policies might be useful to make change)
        - Review, incorporate, and cite 3 published sources into your poster. The sources should either have the same research topic or be related to the research questions or results in some way.
            - If you used ChatGPT or other generative AI, include a short statement about which tool you used and how you used it
        - Format the poster to be clear for your audience (e.g., can someone who doesn't know your data understand the graphs?) and make sure that all required information fits on one page
    - Connect the R code to the policy (or informational) brief template and show relevant output in the appropriate places on the R Markdown brief template
        - Supplement the brief with additional information a policymaker or other non-research audience member might need to know about the policy you are working on
        - Format the brief to be clear for your audience (e.g., can someone who doesn't know your data understand the graphs?) and make sure that all required information fits on one page

- Submit your codebook (or a link to it), your data (or a link to it), both R Markdown files with all annotated code, and a well-formatted poster and research brief in PDF format knitted directly from the R Markdown file
- Note that your R Markdown files will have code and annotation that do not appear on the poster. For example, code to find group means and medians or to check assumptions will be necessary to create a complete poster and research brief, but will only show up in the R Markdown files and not on the poster nor brief itself. See the course project example R Markdown files and poster/brief as one example.
- A small percentage of your score will be based on **your reviews of other student final submission** discussion board posts

You MUST PASS the final project with a total of 70% or higher to pass the class.

Participation and professionalism (5%)

Participating in class activities and group work, providing feedback to the instructor and teaching assistant via course evaluations, and treating your fellow students, teaching assistants, and instructors (regular and guest) in a professional manner in person and electronically are required and will be translated into the professionalism score.

Late work policies

What happens if I don't submit the course project checkpoints on time? You should request a checkpoint extension using the form in Canvas so that Prof Harris knows that you are still working on the checkpoint. If all extensions are exhausted (see checkpoint extension form for extension expiration dates, the checkpoint will not be graded and the percentage available for the item will be *added to the weight of your final project*. Because a small number points (approximately 5% of points) for the final project are for making revisions based on feedback for the midterm, those points will not be available to you so a 100% grade on the project and in the course will not be possible. It is highly recommended you submit checkpoints on time. While it might feel like you have lots of time, the end of the semester comes quickly and lots of things are due at the end. Take some pressure off of future you by doing your best to submit checkpoints on time.

What happens if I have to miss book club? You will still be reviewed by your team for your participation in planning for book club and that will influence your professionalism score for the course. In lieu of your actual attendance at book club for the 10%, you have the option to take a score of zero or to submit a 1000–1500 word paper discussing all of the topics from the book club. This paper is due by the final course meeting on December 9th.

What happens if my statistics in the wild is late? Your score will be 0. Start early so that even if you have difficult life event(s) late in the semester you still have something to submit!

The highest threshold you reach from the table below will be your earned grade. There is no rounding.

Grading Criteria and Scale

Weighting summary

- 10% book club
- 15% statistics in the wild
- 5% professionalism
- 70% course project

Letter Grade Thresholds

A	**95%**
A-	**90%**
B+	**88%**
B	**85%**
B-	**80%**
C+	**78%**
C	**75%**
C-	**70%**
F	**Below 70**

Note: The Brown School does **not** award A+ or D grades.

9) Competency Alignment to Assignments and Course Activities

MSW Competencies (CSWE 2022 EPAS)			
Graded Assignments	**Competency(ies)**	**Dimension(s)**	**System Level(s) for Competencies 6-9**
Book Club	C1, C4, C3	Knowledge, Values	Not Applicable
Stats in the Wild	Depends on student selection		Not Applicable
Course Project	C4, C5 (possibly C3)	Knowledge, Skills, Values	Not Applicable
Professionalism	C1	Values	Not Applicable

Course Activities	**Competency(ies)**	**Dimension(s)**	**System Level(s) for Competencies 6-9**
Policy Guest Speakers	C5	Knowledge	Not Applicable
Statistics Workshops	C4	Skills	Not Applicable

10) MSW Program Assessment and Accreditation

The Brown School's Social Work Program is accredited by the Council on Social Work Education (CSWE). To maintain our accreditation, we are required to demonstrate to CSWE that our curriculum meets specific competency assessment standards. Our program assessment collects the data necessary to evaluate the Brown School's MSW curriculum. It is not an evaluation of individual students or faculty members. Outcomes from the program assessment will be aggregated and included in our CSWE reporting requirements and accreditation processes.

The MSW Program Assessment has three components. 1) a comprehensive knowledge assessment 2) a skills practice simulation 3) a portfolio of course assignments.

All MSW students will participate in the program assessment process.

- **MSW Foundation and Concentration Knowledge Assessment**
  The knowledge assessment is implemented as a timed, in-person and proctored assessment at the end of each year using the MSW Assessment Canvas site. The knowledge assessment includes multiple choice and true/false questions as well as short answer questions connected to a case study.
- **MSW Foundation and Concentration Skills Simulations**
  The skills simulations consist of online simulations of generalist and specialized practice skills with specific client populations. The simulations will be deployed via the MSW Assessment Canvas site and are expected to take between 45-60 minutes to complete.
- **MSW Foundation and Concentration Portfolio**
  The portfolio consists of standard assignments from selected courses and practicum. The assignments will be graded as usual by the course instructors. A separate competency rubric will be used to assess the assignments in the portfolio; therefore, students should submit a clean copy of the assignment, not the graded version. Not all courses have a portfolio assignment.

    - For this course, the portfolio assignment is: For this course, there is no portfolio assignment.

Additional details about the MSW Program Assessment are included in the MSW Foundation and Concentration Assessment Canvas sites.

11) Course Outline

Week	Date	Topics/Assigned Readings/Homework	In-class Activities	Assignments/ Deadlines (Due BEFORE class unless otherwise noted)
1	Aug 26	Topics: • Course Introduction • Communicating evidence to different key stakeholders in the policy ecosystem, including policymakers, practitioners, and the public • Getting Started with R Read/watch/listen before class: • None	Welcome / Q & A My life in R Intro to R workshop	Install R and R Studio before class meets Download course materials before class meets

2	Sept 2	Topics:
		• Introductory statistical principles and terminology
		  ○ Variable and data types
		  ○ Observation vs. variable
		  ○ Missing data
		• Univariate and bivariate analysis
		  ○ Frequencies, percentages, means, medians, standard deviations, ranges, IQRs
		Read/watch/listen before class:
		• Harris Chapter 1
		• Harris Chapter 2 up to section 2.7
		• https://www.youtube.com/watch?v=42-d2HdbyS8
			5 slides or warm-up
			
			Codebooks and research question writing activity
			
			R workshop on coding terminology, data cleaning, and descriptive statistics	

3	Sept 9	Topics: • Univariate and bivariate analysis	5 slides or warm-up	

Week	Date	Topics/Assigned Readings/Homework	In-class Activities	Assignments/ Deadlines (Due BEFORE class unless otherwise noted)
		○ Group descriptive statistics • Communicating evidence to different key stakeholders in the policy ecosystem, including policymakers, practitioners, and the public ○ Clear and complete tables for univariate and bivariate descriptive statistics Read before class: • Harris Chapter 2 section 2.7 to end	R workshop on making clear tables Project code file walk-through Project work time	
4	Sept 16	Topics: • Differences between quantitative and qualitative data • Data collection, management, and quality-assurance techniques • Research designs for correlational and causal analyses Read/watch/listen before class: • https://retractionwatch.com/ (browse the website including the leaderboard https://retractionwatch.com/the-retraction-watch-leaderboard/ and https://retractionwatch.com/papers-and-peer-reviews-with-evidence-of-chatgpt-writing/) • https://www.youtube.com/watch?v=hECPeKv5tPM	Finish R workshop on clear tables (if needed) 5 slides or warm-up R data management and quality-assurance workshop Special guest: Nathalia Gutierrez Sacasa	

Week	Date	Topics/Assigned Readings/Homework	In-class Activities	Assignments/ Deadlines (Due BEFORE class unless otherwise noted)
		• https://www.youtube.com/watch?v=VQbkw-SI8c4 • https://www.youtube.com/watch?v=q17s84ADGfA&t=200s • https://www.youtube.com/watch?v=EUeQRE5UJpg&list=PLvcb33xNTVUmCUnhQxtizmm8hOGPvdTlF		

5	Sept 23	Topics:
		• Univariate and bivariate analysis
		  ○ Univariate bar graphs, box plots, scatterplots, line graphs
		  ○ Bivariate bar graphs, box plots, scatterplots, line graphs (if time)
		Read/watch/listen before class:
		• Harris Chapter 3 through the end of section 3.5
			5 slides or warm-up
			
			Univariate graphs in R
				Checkpoint 1 Due

6	Sept 30	Topics: • Univariate and bivariate analysis ○ Bivariate bar graphs, box plots, scatterplots, line graphs • Maps Read before class: • Harris Chapter 3 section 3.6 to end of chapter	Instructor: Odalis Hernandez Bivariate graphs in R	
Fall Break	Oct 7			
7	Oct 14	Topics:	5 slides or warm-up	

Week	Date	Topics/Assigned Readings/Homework	In-class Activities	Assignments/ Deadlines (Due BEFORE class unless otherwise noted)
		• Statistical inference and hypothesis testing ○ Central Limit Theorem • Communicating evidence to different key stakeholders in the policy ecosystem, including policymakers, practitioners, and the public Read before class: • Harris Chapter 4	R workshops: • Central Limit Theorem Demo in R Markdown • Using R Markdown to create research posters and policy briefs	

8	Oct 21	Topics:
		• Univariate and bivariate analysis
		  ○ Chi-squared
		• Statistical inference and hypothesis testing
		  ○ Null Hypothesis Significance Testing
		Read/watch/listen before class:
		• Harris Chapter 5
			5 slides or warm-up
			
			R chi-squared workshop
				Checkpoint 2 Due

9	Oct 28	Topics:
		• Univariate and bivariate analysis
		  ○ T-test
		• Statistical inference and hypothesis testing
		  ○ Null Hypothesis Significance Testing
		• Communicating evidence to different key stakeholders in the policy
			Guest speakers: Jason Jabbari and Stephanie Anderson (Clark-Fox Policy Institute Director and Manager)
			
			t-test R workshop	

Week	Date	Topics/Assigned Readings/Homework	In-class Activities	Assignments/ Deadlines (Due BEFORE class unless otherwise noted)
		ecosystem, including policymakers, practitioners, and the public Read before class: • Harris Chapter 6		

10	Nov 4	Topics:
		• Univariate and bivariate analysis
		  ○ ANOVA
		• Statistical inference and hypothesis testing
		  ○ Null Hypothesis Significance Testing
		Read/watch/listen before class:
		• Harris Chapter 7
			5 slides or warm-up
			
			ANOVA R workshop
				Statistics in the Wild Due

11	Nov 11	Topics: • Univariate and bivariate analysis ○ Correlation • Communicating evidence to different key stakeholders in the policy ecosystem, including policymakers, practitioners, and the public Read/watch/listen before class: • Harris Chapter 8	Guest speaker: Abby Barker, Social Policy Researcher Correlation R workshop	
12	Nov 18	Topics: • Considerations for ethical and equitable data practices, and approaches to minimizing risks or harms in data collection and analysis Read/watch/listen before class:		Book Club

Week	Date	Topics/Assigned Readings/Homework	In-class Activities	Assignments/ Deadlines (Due BEFORE class unless otherwise noted)
		• Invisible Women (Criado-Perez)		

13	Nov 25	Topics:
		• Univariate and bivariate analysis
		  ○ Simple linear regression
		• Multivariate linear models
		  ○ Multiple linear regression
		Read/watch/listen before class:
		Harris Chapter 9
			5 slides or warm-up
			
			Regression R workshop
			
			Literate Programming Workshop I
			
			Project Work Time
				Checkpoint 3 Due

14	Dec 2	Topics: • Literate programming for poster and brief	5 slides or warm-up Literate Programming Workshop II Project Work Time	
15	Dec 9	Topics: • Small group sharing and feedback	Sharing of poster, brief, and Stats in the Wild in small groups	Course Project Due