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Applied Research Methods II
(Research Practicum, Semester 2)

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Course Information
Abbreviation: GOV355D
Unique Number: 38640
Time: Friday 12-3pm
Room: RLP 0.130
Flags: Writing; Indep. Inquiry; Quant. Reasoning
Website: canvas.utexas.edu

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Research Lab Information
Innovations for Peace and Development
Lab Location: BEL (Stadium) 214
Lab Access Code: Ask the instructor
Website: www.ipdutexas.org

1. Course Description

This course is the second semester of a two-semester program that attempts to provide undergraduate students with a fairly comprehensive introduction to the research process in the social sciences. As part of this program, students will attend regular classes, write their own first-rate quantitative research paper, and gain internship experience with Innovations for Peace and Development (IPD). Students are required to take both semesters of this two-semester, interdisciplinary research program.

During the first semester, the classroom part of the course covered the essential elements of applied social science research, including arguments, concepts, measures, causality, and basic statistics. Given that knowledge of statistical software, text editors, reference management software, and mapping software is increasingly helpful for success in the social sciences, the course also provided training in R and Stata. At the end of the first semester, students completed their own well-developed Research Proposals in lieu of a final exam.

During the second semester, classroom instruction will cover experiments, data structures, data cleaning, hypothesis testing, measurement challenges, linear regression, as well as the basics of panel data, regression discontinuity designs, difference-in-differences, logistic regression, and network analysis. Training in the above software programs will continue during the second semester as well. At the end of the second semester, students will com-

plete their own research projects, write-up their results in a formal paper, and present their findings to the class.

2.   Course Requirements

2.1.   Prerequisite Coursework

Students need to have already taken Applied Research Methods I (Research Practicum, Semester 1) to enroll in this course. Also note that this is an upper-division undergraduate course. Students with previous coursework in political science, economics, sociology, and/or statistics will likely find the course easier.

2.2.   Required Software and Resources

This course makes use of Stata, R, LaTeX, Mendeley, and ArcGIS. Prior knowledge of any of these software programs is not required. I will teach you the basics of all of these programs during the course.

- R. For instructions on how to freely download R and its companion program, R Studio, consult here.

- LaTeX. Windows users can freely download MiKTeX here. Mac users can freely download MacTeX here. Advanced users may want to consider downloading SublimeText, to be used in combination with Sumatra PDF (instructions here). In class, we will be using Overleaf, a program that allows users to use LaTeX online—that is, without the need to have it installed on one's computer.

- Mendeley. This reference management software program is freely available here. After learning how to use Mendeley, or one of its competitors, such as Zotero or EndNote, it will never be necessary to construct your own bibliography manually ever again.

- Stata. Although Stata is a relatively expensive commercial software, as a UT student you have free access to Stata through the UT Austin Stats Apps Server as well as numerous computer labs on campus. The IPD lab (BEL [Stadium] 214), which you have access to as part of this class, has Stata as well.

To get help with these programs and others, there are two resources that we will utilize:

- *Data Camp.* I have signed up our class for *free* courses from Data Camp. It is an online platform that provides hundreds of courses to learn new skills. The courses are interactive and fun. We will be using some of these courses from Data Camp as required homework. Overall, students will be able to use 900 free hours of coursework.

- *Lynda.* You can also access free courses through UT-Austin's Lynda Portal.

2.3. Readings

Students must purchase (or borrow from a library) the course's primary textbooks:

- Gerring, John, and Dino Christenson. 2017. *Applied Social Science Methodology: An Introductory Guide.* Cambridge: Cambridge University Press.

- Kelstedt, Paul, and Guy Whitten. 2018. *The Fundamentals of Political Science Research.* Third Edition. Cambridge: Cambridge University Press.

- Imai, Kosuke. 2017. *Quantitative Social Science: An Introduction.* Princeton, NJ: Princeton University Press. http://qss.princeton.press/student-resources-for-quantitative-social-science

- King, Gary, Robert Keohane and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research.* Princeton: Princeton University Press.

- Li, Quan. 2018. *Using R for Data Analysis in the Social Sciences: A Research Project-Oriented Approach.* Oxford: Oxford University Press.

- James, Gareth, Daniela Witten, Trevor Hastie, and Robert Tibshirani. 2014. *An Introduction to Statistical Learning: With Applications in R* New York: Springer. [This book is freely available via http://www-bcf.usc.edu/∼gareth/ISL]

- Wickham, Hadley and Grolemund, Garrett. 2017. *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data.* Sebastol, California: O'Reilly Media. [This book is freely available via https://r4ds.had.co.nz]

For some weeks, I supplement the textbook readings with other required and optional readings. When these articles can be easily found on the UT Austin Library webpage, I will ask students to download the article(s) themselves—to ensure students know how to use the library website; otherwise, I will post the article(s) on the class website, Canvas. For more information on the specific reading assignments for each week, refer to the Class Schedule (below). Optional readings are not required for each class period, and reading them will not enable students to receive extra credit. However, I may use these readings to supplement the textbook in case it is necessary to facilitate comprehension of important topics.

2.4. Attendance, Quizzes, and Participation

All students must come to class prepared, having completed the readings before class. At the beginning of each class, I will give everyone a five-question, multiple-choice quiz.

The quiz serves three purposes. First, the quiz will help keep track of attendance and serve as a commitment device for students to attend class and on-time. Even if students miss both questions on the quiz but are present for class, they will receive full credit toward attendance for the respective class. Overall, attendance will account for 5% of students' final grades.

Second, since the quiz will only cover the most basic ideas from the required reading, the quiz will serve as a reward: you should receive 100% every time if you read. To give students some cushion for bad days or extenuating circumstances, I will drop your lowest 2 scores. I will make no other accommodations should you miss class for any reason or arrive late and miss the quiz. In total, students' average quiz score will comprise 10% of your final grade.

Third, the quiz will help ensure that students are ready to discuss the material and do not rely entirely on my lecture to learn the materials. The material is challenging, and passive learning will generally not suffice for students to perform well in the course. Since participation comprises 5% of the final grade, I will post a 1-5 cumulative score for the semester on Canvas for each student after the third class and gradually update it during the semester, as appropriate. This way, the final participation grade will not come as a surprise to students at the end of the semester. As stipulated in the Policies section of this syllabus, I will make every possible effort to ensure that students feel comfortable participating. To ensure that you receive a good grade for participation, please try to make at least one meaningful contribution to discussion each class.

2.5.   IPD Internship

Each week, the Task Team Leader from the respective Innovations for Peace and Development (IPD) teams will send students/team members assignments. On average, these assignments will take students around 5 hours to complete. By Friday at 11:30am each week, students will update an individual time-tracking Google Sheet, where they will keep track of their hours and the tasks that they complete for their IPD internship. The Task Team Leaders from the respective research team will sign-off on each student's hours. Based on these Google Sheets and feedback from the respective Task Team Leaders, students will receive a grade for their IPD internship participation. That grade will comprise 15% of students' final grade for the course.

2.6.   Office Hours and Meetings with the Instructor

Students must meet with me at least two times by April 9. During the first meeting, we will discuss necessary steps to make your Research Proposal from the first semester into a full-fledged Research Paper by the end of this second semester of the course. The second meeting will entail discussion of students' progress on their Research Papers. In case students have a work or class commitment, I will be happy to meet with them outside my designated office hours. To obviate having to wait in long lines, students may book an office hours slot here. Students who do not meet with me at least twice before April 9 will lose one point toward their final grade. This requirement is in place because last-minute efforts will generally not suffice to do well in the course.

2.7.   Homework Assignments (and Extra Credit)

Homework assignments, including `Stata` and `R` assignments, will comprise 10% of students' final grades. For each written assignment that students complete using LaTeX, they will receive two extra credit points for the particular assignment.

2.8.   Research Week Presentations

All students must participate in UT Research Week. Participation entails making poster presentations for: (1) the whole university on April 14-15, 2021; and (2) the Government Department on a date near then in April. You may obtain more information on UT Research Week on the respective website.

2.9.   Research Paper, Sub-Assignments, Referee Reports, and Presentation (and Extra Credit)

Having students write a first-rate Research Paper is a primary goal for the course. In the past, students have produced research papers relating to foreign aid, governance, political economy, political violence, peace processes, international development, and many other topics. Many students have been accepted (and funded) to present their research at the Midwest Political Science Association meeting in Chicago, IL. On that score, two students in the class will be presenting at Midwest this year.

During the first semester, students produced a Research Proposal with the following elements:

1. An introduction to a puzzle in an academic literature of the student's choosing

2. A clear description of the dependent variable

3. A clear critique of an existing literature related to the student's topic, covering how different independent variables have explained their dependent variable

4. A theory/argument that explains the puzzle and mechanistically traces why it causes the dependent variable

5. A research design, articulating how the student plans to test the theory/argument

6. A section describing what else students will need to do during the second semester to complete the paper.

During this second semester of the course, students will make the appropriate updates to their Research Proposals from the first semester. After some hard work, students should be able to convert their Research Proposal into a complete Research Paper by the end of this second semester of the course. To ensure students are on track to complete their Research Papers by the end of the semester (deadline: May 16) and receive adequate feedback along the way, the course will contain the following sub-assignments:

1. Revise & Resubmit Assignment 1 [due January 29]

2. Revise & Resubmit Assignment 2, including an Appendix describing the variables [due March 4]

3. Research Week abstract [due date for university TBD]

4. Clean dataset [due March 12]

5. Research Week poster material submission [due April 9]

6. A draft paper with all sections, including an analysis section with estimated regression results, but excluding the conclusion [due April 16]

7. A Referee Report of another student's progress on his/her paper to date [2.5-3 double-spaced pages, due April 30]

8. A Presentation of students' final Research Papers [May 7]

For each of these sub-assignments (except the Poster and Presentation), students will receive an extra two points if they submit their assignments using LaTeX. All of these sub-assignments must include a bibliography—generated automatically using `Mendeley` or another program such as `Zotero` or `EndNote`—as learned during the first semester of the course. Students should not be wasting time by manually generating a bibliography.

I will provide feedback on relevant sub-assignments within one week of submission or earlier. The Referee Report will also provide useful feedback for students. Additionally, the Referee Reports serve as a medium for students to learn how to critique others' quantitative studies in a respectful way, thereby enabling the students to become better scholars. The Referee Report will account for 5% of students' overall grades.

After completing all of the sub-assignments and the Referee Reports, students will submit a final Research Paper. The final Research Proposal should incorporate feedback from all the previous assignments and the student Referee Reports as well as include a bibliography made with `Mendeley` or another program. The final Research Paper will comprise 15% of students' final grades and will be due on May 16 at 11:30am.

As with the sub-assignments, the Research Proposal also presents an opportunity for extra credit: students who write their Research Paper in LaTeX will receive an two extra points toward their final grade on the Research Proposal. During office hours, I would be more than happy to help students who are having issues with formatting anything in LaTeX. I cannot provide the same support for anything written in Microsoft Word, Libre Office, Google Docs, etc.

On the final day of class, students will give 5-10 minute presentations of their work. The presentation will comprise 5% of students' grades. Since we will not have time to cover LaTeX `Beamer` during class, students will not be able to receive extra credit for submitting their presentations in LaTeX `Beamer`.

3. Policies

3.1. Grading Rubric

- <u>Attendance</u>: 5%

- <u>Class Participation</u>: 5%

- <u>Quizzes</u>: 10%

- <u>Homework, including `Stata`/R Assignments</u>: 10%

- <u>Revise & Resubmit Assignments</u>: 5% each

- <u>Clean Dataset</u>: 5%

- <u>Research Week Poster</u>: 5%

- <u>Empirical Section/Results Sub-Assignment</u>: 10%

- <u>Referee Report</u>: 5%

- <u>Research Paper</u>: 15%

- <u>Final Presentation</u>: 5%

- <u>IPD Internship Evaluation</u>: 15%

- <u>Potential Penalty: Instructor Meetings</u>: 1 potential point for not meeting with the instructor twice before April 9.

3.2. Grading Scale

- 92.50-100 (A)
- 92.49-89.50 (A-)
- 86.50-89.49 (B+)
- 82.50-86.49 (B)
- 79.50-82.49 (B-)
- 76.50-79.49 (C+)
- 72.50-76.49 (C)
- 69.50-72.49 (C-)
- 66.50-69.49 (D+)
- 62.50-66.49 (D)
- 59.50-62.49 (D-)
- 59.49 or below (F)

3.3. Grade Rounding

The above grading scale already incorporates very generous grade rounding, not to mention the multitude of extra credit opportunities. Accordingly, there will be no additional rounding of grades under any circumstance.

3.4.   Grade Posting on Canvas

I will post all grades to the class website, Canvas. I will also use the option where students may discern the average score of the class. This way, students will know where they stand by the end of semester.

3.5.   Grade Appeals

If you would like to appeal your grade on any assignment, you must make the request to me in writing, over email, within 5 days of receiving your grade. In your grade appeal, you must specify the reason(s) why you think I misgraded the paper. Acceptable reasons include those pertaining to the concepts and material covered during the course. I will not consider requests for grade changes that are not germane to the course.

3.6.   Independent Inquiry Flag

This course carries the Independent Inquiry flag. Independent Inquiry courses are designed to engage you in the process of inquiry over the course of a semester, providing you with the opportunity for independent investigation of a question, problem, or project related to your major. You should therefore expect a substantial portion of your grade to come from the independent investigation and presentation of your own work.

3.7.   Quantitative Reasoning Flag

This course carries the Quantitative Reasoning flag. Quantitative Reasoning courses are designed to equip you with skills that are necessary for understanding the types of quantitative arguments you will regularly encounter in your adult and professional life. You should therefore expect a substantial portion of your grade to come from your use of quantitative skills to analyze real-world problems.

3.8.   Quantitative Papers Only

Although this course covers some qualitative research, the focus of the course is quantitative. Accordingly, students must write a quantitatively-oriented or mixed methods paper for their Final Research Papers. This is requirement is also in place to comply with the provisions dictated by the Quantitative Reasoning flag.

3.9.   Writing Flag

This course carries the Writing Flag. Writing Flag courses are designed to give students experience with writing in an academic discipline. In this class, you can expect to write regularly during the semester, complete substantial writing projects, and receive feedback from your instructor to help you improve your writing. You will also have the opportunity to revise one or more assignments, and you may be asked to read and discuss your peers' work. You should therefore expect a substantial portion of your grade to come from your written work. Writing Flag classes meet the Core Communications objectives of Critical Thinking, Communication, Teamwork, and Personal Responsibility, established by the Texas Higher Education Coordinating Board.

3.10.   Writing Quality of Papers and Assignments

I expect that students will submit their papers and assignments using proper grammar and writing, etc. I will alert students early in the semester if I see that they are having trouble with their writing so that they may seek help from the appropriate source. Since part of research involves being able to communicate in a clear writing style, the quality of exposition will be one element that I will consider when examining students' submissions.

3.11.   Absences

As described in the Course Requirements section of the syllabus (above), it will be very difficult to perform well in the course if you do not attend regularly. The only absences that I will consider legitimate include those pertaining to religious holidays, illness, extenuating circumstances due to an emergency, and university-excused absences. For illnesses, you will need to either provide me with a doctor's note, or you will need to send me an email before class to inform me that you are sick and won't be attending. If you are sick and do not provide me with a doctor's note or email me before class, your absence will not be excused except under very extenuating circumstances.

3.12.   Late Work

Unless you receive prior approval from me, I will not accept late final Research Papers or Empirical Analysis/Results sections, and I will discount all other late assignments as follows:

- 1-15 minutes: 0% (grace period for last-minute issues)

- 15 minutes-24 hours late: -10%

- 24-48 hours late: -25%

- more than 2 days late: -50%

- more than one week: -75%

- more than two weeks: no credit offered

3.13.   Homework Policies, Including for Stata/R Assignments

Students may consult with other members of the class and/or work in groups for the Stata/R assignments but not other homework assignments. Regardless of whether students choose to work in groups on the Stata/R assignments, students must submit their own copies of their work—i.e., no group submissions. Students are also not allowed to post their homework questions on the Stack Exchange, R help forums, and Stata help forums. Additionally, students may not seek help from people outside the class, such as from a friend, professor, PhD student, etc. Students who received any sort of prohibited outside help will receive a zero for that particular assignment. These policies are in place because the only way to become proficient in these programs is to actually use them and make mistakes until you get it right.

If you need help with a particular question, feel free to book an office hours slot. Provided that you attended the class where I covered the material at hand or missed class due to an excused absence (see above), I am very happy to help! I will not provide additional make-up training during office hours if you missed class for a non-excused absence.

3.14.   Students Rights and Responsibilities

- You have a right to a learning environment that supports mental and physical wellness.

- You have a right to respect.

- You have a right to be assessed and graded fairly.

- You have a right to freedom of opinion and expression.

- You have a right to privacy and confidentiality.

- You have a right to meaningful and equal participation, to self-organize groups to improve your learning environment.

- You have a right to learn in an environment that is welcoming to all people. No student shall be isolated, excluded or diminished in any way.

With these rights come these responsibilities:

- You are responsible for taking care of yourself, managing your time, and communicating with the instructor if things start to feel out of control or overwhelming.

- You are responsible for acting in a way that is worthy of respect and always respectful of others.

3.15.   Personal Pronoun and Name Preferences

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

3.16.   Academic Integrity

Each student in the course is expected to abide by the University of Texas Honor Code: "As a student of The University of Texas at Austin, I shall abide by the core values of the University and uphold academic integrity." Plagiarism is taken very seriously at UT. Therefore, if you use words or ideas that are not your own (or that you have used in previous class), you must cite your sources. Otherwise you will be guilty of plagiarism and subject to academic disciplinary action, including failure of the course. You are responsible for understanding UT's Academic Honesty and the University Honor Code, which can be found at the following web address: http://deanofstudents.utexas.edu/sjs/acint_student.php

3.17.   Drop Policy

If you want to drop a class after the 12th class day, you'll need to execute a Q drop before the Q-drop deadline, which typically occurs near the middle of the semester. Under Texas law, you are only allowed six Q drops while you are in college at any public Texas institution. For more information, see: http://www.utexas.edu/ugs/csacc/academic/adddrop/qdrop

3.18.   University Resources for Students

Your success in this class is important to me. We will all need accommodations because we all learn differently. If there are aspects of this course that prevent you from learning or exclude you, please let me know as soon as possible. Together we'll develop strategies to meet both your needs and the requirements of the course. There are also a range of resources on campus:

3.18.1.   Services for Students with Disabilities

This class respects and welcomes students of all backgrounds, identities, and abilities. If there are circumstances that make our learning environment and activities difficult, if you

have medical information that you need to share with me, or if you need specific arrangements in case the building needs to be evacuated, please let me know. I am committed to creating an effective learning environment for all students, but I can only do so if you discuss your needs with me as early as possible. I promise to maintain the confidentiality of these discussions. If appropriate, also contact Services for Students with Disabilities, 512-471-6259 (voice) or 1-866-329- 3986 (video phone). http://ddce.utexas.edu/disability/about/

3.18.2.   Counseling and Mental Health Center

Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful.

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support: http://www.cmhc.utexas.edu/individualcounseling.html

3.18.3.   The Sanger Learning Center

Did you know that more than one-third of UT undergraduate students use the Sanger Learning Center each year to improve their academic performance? All students are welcome to take advantage of Sanger Center's classes and workshops, private learning specialist appointments, peer academic coaching, and tutoring for more than 70 courses in 15 different subject areas. For more information, please visit http://www.utexas.edu/ugs/slc or call 512-471-3614 (JES A332).

Undergraduate Writing Center: http://uwc.utexas.edu/
Libraries: http://www.lib.utexas.edu/
ITS: http://www.utexas.edu/its/
Student Emergency Services: http://deanofstudents.utexas.edu/emergency/

3.18.4.   Important Safety Information

If you have concerns about the safety or behavior of fellow students, TAs or Professors, call BCAL (the Behavior Concerns Advice Line): 512-232-5050. Your call can be anonymous. If something doesn't feel right – it probably isn't. Trust your instincts and share your concerns.

The following recommendations regarding emergency evacuation from the Office of Campus Safety and Security (512-471-5767, http://www.utexas.edu/safety/):

- Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.

- Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.

- Students requiring assistance in evacuation shall inform their instructor in writing during the first week of class.

- In the event of an evacuation, follow the instruction of faculty or class instructors. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.

- Link to information regarding emergency evacuation routes and emergency procedures can be found at: www.utexas.edu/emergency

3.19.   COVID-19 Safety and Class Participation/Masks

We will all need to make some adjustments in order to benefit from in-person classroom interactions in a safe and healthy manner. Our best protections against spreading COVID-19 on campus are masks (defined as cloth face coverings) and staying home if you are showing symptoms. Therefore, for the benefit of everyone, this is means that all students are required to follow these important rules.

Every student must wear a cloth face-covering properly in class and in all campus buildings at all times. Students are encouraged to participate in documented daily symptom screening. This means that each class day in which on-campus activities occur, students must upload certification from the symptom tracking app and confirm that they completed their symptom screening for that day to Canvas. Students should not upload the results of that screening, just the certificate that they completed it. If the symptom tracking app recommends that the student isolate rather than coming to class, then students must not return to class until cleared by a medical professional. Information regarding safety protocols with and without symptoms can be found here.

If a student is not wearing a cloth face-covering properly in the classroom (or any UT building), that student must leave the classroom (and building). If the student refuses to wear a cloth face covering, class will be dismissed for the remainder of the period, and the student will be subject to disciplinary action as set forth in the university's Institutional Rules/General Conduct 11-404(a)(3). Students who have a condition that precludes the wearing of a cloth face covering must follow the procedures for obtaining an accommodation working with Services for Students with Disabilities.

3.20.   Sharing of Course Materials is Prohibited

No materials used in this class, including, but not limited to, lecture hand-outs, videos, assessments (quizzes, exams, papers, projects, homework assignments), in-class materials, review sheets, and additional problem sets, may be shared online or with anyone outside of the class unless you have my explicit, written permission. Unauthorized sharing of materials promotes cheating. It is a violation of the University's Student Honor Code and an act of academic dishonesty. I am well aware of the sites used for sharing materials, and any materials found online that are associated with you, or any suspected unauthorized sharing of materials, will be reported to Student Conduct and Academic Integrity in the Office of the Dean of Students. These reports can result in sanctions, including failure in the course.

3.21.   FERPA and Class Recordings

Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings. Guidance on public access to class recordings can be found here.

3.22.   COVID Caveats

To help keep everyone at UT and in our community safe, it is critical that students report COVID-19 symptoms and testing, regardless of test results, to University Health Services, and faculty and staff report to the HealthPoint Occupational Health Program (OHP) as soon as possible. Please see this link to understand what needs to be reported. In addition, to help understand what to do if a fellow student in the class (or the instructor or TA) tests positive for COVID, see this University Health Services link.

4.   Class Schedule, Readings, and Homework

Week 1: Reference Management and Writing in Plain Text/LaTeX (January 22)

Class:

- Discussion of the Greene reading

- Writing issues in your papers

- Introduction to LaTeX

- An overview of `Mendeley`

Required Assignments:

- Carefully read the new course syllabus for this semester

- Carefully read Professor Kenneth Greene's writing guide, which is available on Canvas

- Book one 15-minute time slot to meet with me here, so we can meet and discuss your research at Innovation for Peace and Development (IPD)

- Create a free Overleaf account

- Install Mendeley on your computer

- Download a copy of this LaTeX Cheat Sheet

Recommended, but not Required, Assignment:

- Install LaTeX on your computer (See Section 2.2. of this syllabus)

Further Reading (Not Required):

- Learn LaTeX in 30 Minutes

- A Not So Short Introduction to LaTeX

Week 2: Review of Key Concepts (January 29)

Class:

- Descriptive arguments

- Causal arguments

- Internal validity

- External validity

- Samples

- Counterfactual reasoning and causal inference

- Causal mechanisms

Required Reading:

- Gerring, John, and Dino Christenson. 2017. *Applied Social Science Methodology: An Introductory Guide.* Cambridge: Cambridge University Press.

  - Read: Chapters 2, 4, and 6, and learn the key terms listed at the end of each chapter.

Required Assignments

1. Please update your IPD time-tracking Google Sheet by Friday, January 29 at 11:30am

2. Revise and Resubmit (R&R) Assignment 1, which is due Friday, January 29 at 11:30am, should include the following components:

   (a) Your **<u>abstract</u>** should be no longer than 6-7 sentences, be on its own separate page, and include the following:

   - 1 sentence on why your topic is important, ensuring that you "show" without "telling" the reader, and definitely do not use the word "important"

   - 1-2 sentences on your argument/theory

   - 1-2 sentences on how you test your argument/theory, including justification of your case/data, if necessary

   - 1 sentence stating the expected policy and/or theoretical contribution of your paper.

   (b) Your **<u>introduction</u>** should be about 2-4 double-spaced pages with the following elements weaved into a coherent text (i.e., no lists):

   - Question build-up or a hook, ending with the research question [1-2 paragraphs]

     – A good paper catches the reader's attention early, even if the reader is not normally interested in your topic. Don't go overboard here, though. A "hook" or factual anecdote—not something from your personal life—can be effective. Some mentions of literature can be helpful, but only if they are extremely interesting. For example, my foreign aid paper cites the past literature to start, but the only reason why the opening works is that it brings up something controversial and catches the reader's attention that way. Basically, don't bore your reader.

   - Why is the question important, and what gaps does it fill in the literature [1 paragraph]

     – Appendix A of this syllabus, Chapter 1 from King, Keohane, and Verba (1994), as well as chapters 1 and 12 from Gerring and Christenson (2017) are helpful here. Note: please do not use the word "important" here. Show; don't tell.

   - Theory/Argument [1-2 paragraphs]

     – I find the graph on page 10 of Kellstedt and Whitten (2018) to be very helpful here. A theory has more than one level. Think of a Russian doll. At the end of the paragraph, state the hypothesis.

   - Research Design: You will need to revise this significantly later, but try to write something for now [1 paragraph]

   - Findings: Make it a placeholder for now [1 paragraph]

- Implications for Theory and/or Policy: Make it a placeholder for now [1 paragraph]

- Paper structure [1 paragraph]

   – Start with: "This paper proceeds as follows. In Section 1, I....". Don't just use the section titles. Provide a little more detail.

(c) Your **dependent variable section** should be 1-2 pages and include:

- A section heading/title that is NOT "Dependent Variable". The section heading should be your dependent variable at the highest level of abstraction. If you are curious about what I mean, refer to page 10 of Kellstedt and Whitten (2018).

   – For example, let's say that from an empirical perspective, I am studying bribery levels in the Russian judiciary. In such case, the dependent variable section should be titled "Corruption", because bribery is a form of corruption.

- Defining and conceptualizing the dependent variable at the highest level of abstraction that is relevant for your paper

   – Let's say that you are arguing that natural resource income leads to civil conflict. In this case, your dependent variable is civil conflict, so you would start this dependent variables section by defining and explaining what is civil conflict. For example, what is the threshold number of battle deaths for a conflict to constitute a civil conflict? Is there a difference between civil war and civil conflict? Do different sources use different thresholds on what constitutes a civil war? How many countries have been affected by civil war? Answering such questions helps establish the importance of your topic without just saying that your topic is important.

- Ensuring the reader understands your dependent variable at lower levels of abstraction as well—how you measure it.

   – Continuing with the above example on natural resources and civil conflict, what types of behaviors are associated with civil conflict, or is it only about battle deaths?

- No need to provide a graph yet, but please try to think about how you would score your cases. In other words, think about the variation in your dependent variable.

   – Continuing with the above example on natural resources and civil conflict, think about cases that might help the reader understand civil conflict. Providing that such examples are relevant for your study, is there a difference between what happened in, say, Rwanda in 1994 and Northern Ireland from 1968-1998?

(d) Your **literature critique** should be 2-3 pages and utilize a strategy from the Greene (2016) reading assignment. In particular, remember to:

- Lead with your own voice: please refrain from Author X says, Author Y says...

- This is more of a *critique* than a *review*. I say this because a *review* is generally flat, uninteresting, and bores the reader.

- Please do NOT mention the title of the article/book mid-sentence anywhere. No exceptions. Use parenthetical citations instead. For example, if I would like to cite a 2016 book written by Rachel Wellhausen in a sentence, I would put Wellhausen (2016). If I wanted to paraphrase an idea from Wellhausen (2016) and put it at the end of the sentence, which is almost always preferable, cite the book as (Wellhausen 2016).

- In total, between your dependent variable section and literature critique, you should have a total of at least 20 academic sources—i.e., books and academic articles. Websites and Wikipedia, etc., do not count toward your 20 sources. To be clear, sometime it is OK to cite a website or a news article from a reputable sources, but these are generally exceptions.

(e) Your **theory section** should be 2-3 pages and include, *inter alia*, the following elements:

- Ensure your theory/argument is clear at both high- and low-levels of abstraction. Trace the mechanisms of your argument so that the reader can understand exactly why your argument is credible. In other words, I am looking for your theory to have mechanisms (or sub-reasons). Recall the example of Russian dolls.

- Clearly state your hypothesis, which should follow directly from your theory.

- See all points in the Greene reading

(f) Your **research design section** should be 2-3 pages and include, *inter alia*, the following elements:

- The mention of credible, well-measured data that clearly map to the hypothesis, and a clear description of these data and their source. Again, think about the diagram on page 10 of Kellstedt and Whitten (2018).

- The mentioning of data that you will use for your dependent and independent variables but also for your control variables

- The method will you be using to test your hypothesis, and a clear justification of why that method is appropriate

- See all points in the Greene reading

(g) Your **bibliography** should be generated using `Mendeley`, which we covered in the previous class. Alternatively, you may use `EndNote` or `Zotero`. No exceptions.

There is absolutely no reason to be spending time learning the various bibliography styles. Plus, using one of these programs allows you to quickly change the style in case you want to submit to another journal, and it uses a different style.

Further Reading (Optional):

- Findley, Michael, Kyosuke Kikuta, and Michael Denly. 2021. "External Validity." *Annual Review of Political Science* 21.

Week 3: Large-N Observational Designs (February 5)

Class:

- The conceptual underpinnings of:
    - Cross-sectional designs
    - Time-series design
    - Panel (time-series cross-sectional) designs
    - Difference-in-differences
    - Regression discontinuity designs
    - Instrumental variables

Required Readings:

- Gerring, John, and Dino Christenson. 2017. *Applied Social Science Methodology: An Introductory Guide*. Cambridge: Cambridge University Press. Chapter 8.

    - Read: Chapter 8, and learn/know the key terms listed at the end of the chapter.

Required Review (get ahead for next week):

- Re-watch the R training from last semester, which covers:
    - What is R?
    - The environment (i.e., the four panes)
    - Setting the working directory
    - Setting up projects in R Studio
    - Basic arithmetic
    - Sequences
    - Installing packages and loading libraries
    - Objects and vectors
    - Loading existing data frames

- Creating new data frames manually

- Inspecting the data (`head`, `View`, `dim`, `summary`, `length`)

- Classes (mumeric, character/strings, factors)

- Generating new variables

- Dealing with missing values

- Basic calculations

- Getting help

- Descriptive statistics (mean, median, mode, quantiles)

- Tables with `stargazer`

- Subsetting

Week 4: The Basics of Data Cleaning in R (February 12)

Class:

- R Training II

  - Cross tabulations (cross tabs)

  - Correlations

  - Data visualization basics in `ggplot2`

  - Importing World Bank World Development Indicators data directly from R

  - Finding country codes

  - Merging data

  - Ensuring that merges properly "go through"

  - Converting characters/string variables to numeric variables

  - Removing accents

  - Changing file encodings

  - Piping

  - Recoding data

  - Filtering data

  - Sorting data

  - Taking logs

  - Labeling variables

Required Reading/Watching:

- Li, Quan. 2018. *Using R for Data Analysis in the Social Sciences: A Research Project-Oriented Approach.* Oxford: Oxford University Press. Chapter 1.

  - Read: pages 1-23, 32-42

  - Optional: pages 23-32

Required Assignments:

- Please update your IPD time-tracking Google Sheet by Friday, February 12 at 11:30am

- Complete all chapters from Data Camp's Free Introduction to R course and upload your personalized certificate of completion to Canvas by Friday, February 12 at 11:30am. You may, however, skip the chapter on Matrices. If you do, please upload a screen shot for each of the other chapters that you completed by the same deadline.

Optional Videos:

- Watch this Getting Started with R and `R Studio` video

- Watch this Introduction to R video.

- Watch the videos on UT-Austin's Lynda Portal

Further Reading (Not Required):

- Imai, Kosuke. 2017. *Quantitative Social Science: An Introduction.* Princeton, NJ: Princeton University Press. Chapter 1.

  - Read: Section 1.3

  - Skip or briefly skim: Sections 1.1-1.2

- Li, Quan. 2018. *Using R for Data Analysis in the Social Sciences: A Research Project-Oriented Approach.* Oxford: Oxford University Press. Chapter 2.

  - Read: pages 43-78, 91

  - Optional: pages 78-85

  - Skip: pages 86-90, 92-93

- Lindberg, Staffan, Michael Coppedge, John Gerring, and Jan Teorell, 2014. "V-Dem: A New Way to Measure Democracy." *Journal of Democracy* 25(3): 159-169.

Week 5: Hypothesis Testing and Codebooks (February 19)

Class:

- Confidence intervals

- Null hypothesis significance testing and p-values

- R tidbits

  - Difference in means

  - Testing for equal variance

  - Power analysis (if time allows)

- Introduction to Bayesian statistics and hypothesis testing (if time allows)

- How to write a codebook

Required Reading/Review:

- Kellstedt, Paul, and Guy Whitten. 2018. *The Fundamental of Political Science Research*. Third Edition. Cambridge: Cambridge University Press.

  - Read: Chapter 8.3: The Logic of *P*-Values (pages 163-166).

    * Note: If you are using the 2013 edition, it's Chapter 7.3 (pages 147-150).

- Li, Quan. 2018. *Using R for Data Analysis in the Social Sciences: A Research Project-Oriented Approach*. Oxford: Oxford University Press. Chapters 3 and 4.

  - Chapter 3

    * Read: pages 94-128, 138-142

    * Optional: pages 128-137

- Denly, Michael, Michael Findley, Joelean Hall, Andrew Stravers, and James Igoe Walsh. 2020. "Do Natural Resources Really Cause Civil Conflict? Evidence from a Global, Subnational, Georeferenced Dataset." Revise & Resubmit at *Journal of Conflict Resolution*.

  - Skim: The Codebook (see paper's Appendix), devoting 5-10 minutes to your skim.

  - Optional: Rest of the paper.

Required Assignment:

1. Please update your IPD time-tracking Google Sheet by Friday, February 19 at 11:30am

2. Please submit your R Homework assignment by Friday, February 19 at 11:30am:

   (a) Dichotomize the V-Dem political corruption score variable (`v2x_corr`) into new numeric variables called `corrupt` and `not_corrupt` based on the mean value of `v2x_corr`. (Note: "dichotomize" means separate into binary—i.e., 0 or 1)

   (b) Create a new string variable called `regime_corrupt`, in which one value is "corrupt regime" if `corrupt== 1`; and the other value is "not corrupt regime" if `not_corrupt== 1`

   (c) Pick one variable of your choosing from the World Bank's World Development Indicators (WDI) that you think is correlated with corruption, and explain in words why you think that variable is correlated with corruption.

(d) Merge the WDI variable into the V-Dem dataset, ensuring that everything merges over (hint: you may want to use `anti_join`)

(e) Subset the data to only keep the data from the year 2016.

(f) Test if the WDI variable that you chose is correlated with the the V-Dem political corruption score variable (`v2x_corr`), by showing (a) a pairwise correlation table; and (b) a labeled scatter plot. Explain in words what your table and scatterplot suggest.

(g) Create a crosstab with your WDI variable and the `regime_corrupt` variable that you created above. Explain in words what your crosstab suggests in terms of how your variable varies in corrupt and non-corrupt regimes.

(h) Please submit both your commented R script and PDF/Word file showing your results. To be clear, I don't just want your code; I would like to see the graphs and tables that your code generates as well as some accompanying text. I provided you the code to produce LaTeX tables, and you also still have the LaTeX Training Overleaf from last semester. However, if you are short on time, you can also just paste in screen shots for this homework assignment—though please don't paste in screen shots in your final paper.

Further Reading (Not Required):

- Gerring, John, and Dino Christenson. 2017. *Applied Social Science Methodology: An Introductory Guide.* Cambridge: Cambridge University Press. Chapter 20.

Week 6: Experiments, Ethics, and Transparency (February 26)

Class:

- Experiments
    - The logic of the randomized control trial (RCT)
    - Survey experiments
    - Lab experiments
    - Field experiments
    - Natural experiments
    - Noncompliance
    - Attrition
    - Spillover
    - Social desirability bias and Hawthorne effects
- Ethics

- – Why (Milgrom, Stanford Prison, etc.)

- – Belmont Report

- – Institutional Review Board (IRB)

- Transparency

  - – *P*-hacking and false positives

  - – The replication crisis

  - – Pre-analysis plans/pre-registration

Required Reading:

- Gerring, John, and Dino Christenson. 2017. *Applied Social Science Methodology: An Introductory Guide.* Cambridge: Cambridge University Press. Chapter 7.

  - – Read the whole chapter and learn/know the key terms, listed at the end of the chapter.

- Bertrand, Marianne, and Sendhil Mullainathan. 2004. "Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination." *American Economic Review* 94(4): 991-1013

  - – Read pages 991-994, paying particular attention to the excellent literature critique.

  - – Quickly skim the rest of the article, devoting about 10 minutes to your skim

- Imai, Kosuke. 2017. *Quantitative Social Science: An Introduction.* Princeton, NJ: Princeton University Press. Chapter 2.

  - – Read: Sections 2.1-2.4

- Miguel, Edward *el al.* 2014. "Promoting Transparency in Social Science Research." *Science* 343(6166): 30-31.

  - – Read the whole article (only 2 pages)

- The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research 1979. "The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research" US Department of Health, Education, and Welfare.

  - – Quickly skim the report, devoting about 10 minutes to your skim.

Required Assignments:

- Please update your IPD time-tracking Google Sheet by Friday, February 26 at 11:30am.

- From Data Camp's Intermediate R Course, complete only the freely-available Chapter 1, Conditionals and Control Flow. Once you are done, take a screenshot to prove that

you have completed this chapter 1, and upload your screenshot to Canvas by Friday, February 26 at 11:30am

Further Reading (Not Required):

- Dunning, Thad. 2016. "Transparency, Replication, and Cumulative Learning: What Experiments Alone Cannot Achieve." *Annual Review of Political Science* 19: 541-563

- Olken, Benjamin. 2015. "The Promises and Perils of Pre-Analysis Plans." *Journal of Economic Perspectives* 29(3): 61-80.

- Blair, Graeme, Jasper Cooper, Alexander Coppock, and Macartan Humphreys. 2019. "Declaring and Diagnosing Research Designs." *American Political Science Review* 113(3): 838-859.

- Kellstedt, Paul, and Guy Whitten. 2018. *The Fundamental of Political Science Research*. Third Edition. Cambridge: Cambridge University Press. Chapter 4.2: "Experimental Research Designs."

- Nosek, Brian *et al.* 2014. "Estimating the Reproducibility of Psychological Science." *Science* 349(6251): aac4716-1 - aac4716-8.

- Ioannidis, John. 2005. "Why Most Published Findings Are False." *PLoS Medicine* 2(8): 0696-0701.

- Gerber, Alan, and Neil Malhotra. 2008. "Do Statistical Reporting Standards Affect What Is Published? Publication Bias in Two Leading Social Science Journals." *Quarterly Journal of Political Science* 3(3): 313-326.

- Gerber, Alan, and Neil Malhotra. 2008. "Publication Bias in Empirical Sociological Research." *Sociological Methods and Research* 37(1): 3-30.

Week 7: Measurement Challenges (March 5)

Class:

- Geddes (2003) and King, Keohane, and Verba (1994) readings

- Challenges from qualitative researchers

Required Reading:

- Geddes, Barbara. 2003. *Paradigms and Sand Castles: Theory Building and Research Design in Comparative Politics*. Ann Arbor, MI: University of Michigan Press.

  - Read Chapter 3, pages 89-129. [See Canvas]

- King, Gary, Robert Keohane and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton: Princeton University Press.

  - Section 4.1., Indeterminate Research Designs

* Read only pages 118-119.

– Section 4.2., Limits of Random Selection

* Read only the bottom of page 124.

– Section 4.3., Selection Bias and Selecting on the Dependent Variable

* Read only page 128 until "avoid them!" on page 130.

– Section 4.3.1., Selecting on an Explanatory Variable

* Read only the first paragraph of page 137.

– Section 5.1.1., Systematic Measurement Error

* Read only page 156.

– Section 5.1.2.1., Nonsystematic Measurement Error in the Dependent Variable

* Read only the first paragraph of pages 158-159.

– Section 5.2., Excluding Relevant Variables: Bias

* Read only pages 168-169.

– Section 5.3., Including Irrelevant Variables: Inefficiency

* Read only the middle of page 182-183.

– Section 5.4., Endogeneity

* Read only the bottom page of 185-186.

Required Assignment:

- Please update your IPD time-tracking Google Sheet by Friday, March 5 at 11:30am

- Revise & Resubmit Assignment 2: Please re-submit your full paper by Friday, March 5 at 11:30am, including the following changes:

  – all corrections implemented from the previous round of feedback;

  – an Appendix to the paper with a table mimicking Table 1, filled out for each variable in your dataset (LaTeX code here if you need help):

Further Reading (Not Required):

- Collier, David, and James Mahoney. 1996 "Insights and Pitfalls: Selection Bias in Qualitative Research." *World Politics* 49(1): 56-91.

- Gerring, John. 2017. "Qualitative Methods." *Annual Review of Political Science* 20(1): 15-36.

- Mahoney, James. 2010. "After KKV: The New Methodology of Qualitative Research." *World Politics* 62(1): 120-147.

Table 1: Description of Variables

Variable	Description	Source
Democracy	This variable corresponds to the polyarchy measure of the Varieties of Democracy (V-Dem) index. Per the codebook, the variable corresponds to an "average of, on the one hand, the weighted average of the indices measuring freedom of association thick, clean elections, freedom of expression, elected officials, and suffrage and, on the other, the five-way multiplicative interaction between those indices."	Coppedge et al. (2018)
Infant Mortality	"Infant mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in a given year."	World Bank (2019)

Week 8: Linear Regression (March 12)

Class:

- R Training III

    - Bivariate linear regression with continuous variable

    - Bivariate linear regression with a dummy variable

    - Interpreting effects, R^2, F-test

    - Substantive vs statistical significance

    - Multivariate linear regression

    - Interaction terms

    - Producing beautiful regression tables with `stargazer`

    - Producing beautiful coefficient plots with `ggcoef`

Required Reading:

- Li, Quan. 2018. *Using R for Data Analysis in the Social Sciences: A Research Project-Oriented Approach.* Oxford: Oxford University Press. Chapter 5.

    - Read: 170-194

    - Optional: 195-205

- Kellstedt, Paul, and Guy Whitten. 2018. *The Fundamental of Political Science Research.* Third Edition. Cambridge: Cambridge University Press.

    - Read: pages 221-225 (Section 10.4), 227 (Section 10.6)

        * Note: If you are using the 2013 edition, it's pages 202-206 (Section 9.4), 207-209 (Section 9.6)

– Optional: Chapter 9, rest of Chapter 10

∗ Note: If you are using the 2013 edition, it's the rest of Chapters 8 and 9

- Long, Abby. 2016. "10 Things to Know About Reading a Regression Table." Evidence in Governance and Politics (EGAP). http://egap.org/methods-guides/10-things-know-about-reading-regression-table

Required Assignment:

- Please update your IPD time-tracking Google Sheet by Friday, March 12 at 11:30am

- From Data Camp's Correlation and Regression Course, complete only the chapters on Simple Linear Regression, Interpreting Regression Models, and Model Fit. Once you are done, please upload screen shots to Canvas to prove that you completed these chapters by Friday, March 12 at 11:30am.

- Submit your clean dataset for your paper by Friday, March 12 at 11:30am. Your submission should include two attachments:

  – your clean dataset (in one file) with labeled varibles (exported as a Stata `.dta` file);

  – an accompanying R script or `Stata .do` file to show your work and how you labeled your variables, etc.

Further Reading (Not Required):

- James, Gareth, Daniela Witten, Trevor Hastie, and Robert Tibshirani. 2014. *An Introduction to Statistical Learning: With Applications in R* New York: Springer. Chapter 3.

- Gerring, John, and Dino Christenson. 2017. *Applied Social Science Methodology: An Introductory Guide.* Cambridge: Cambridge University Press. Chapter 22.

- Imai, Kosuke. 2017. *Quantitative Social Science: An Introduction.* Princeton, NJ: Princeton University Press. Chapter 4.2-4.3.

- King, Gary. 1986. "How to Not Lie with Statistics: Avoiding Common Mistakes in Quantitative Political Science." *American Journal of Political Science* 30(3): 666-687

- Luskin, Robert. 1991. "Abusus Non Tollit Usum: Standardized Coefficients, Correlations, and R^2s." *American Journal of Political Science* 35(4): 1032-1046.

- Kellstedt, Paul, and Guy Whitten. 2018. *The Fundamental of Political Science Research.* Third Edition. Cambridge: Cambridge University Press. Chapter 10

  – Note: if you are using the 2013 edition, it's Chapter 9

- Hainmueller, Jens, Jonathan Mummolo, and Yiqing Xu. 2019. "How Much Should We Trust Estimates from Multiplicative Interaction Models? Simple Tools to Improve Empirical Practice." *Political Analysis* 27: 163-192.

Week 9: No Class due to Spring Break (March 19)

Week 10: Logistic Regression (March 26)

Class:

- The basics of logistic regression

- Applications in R

Required Reading:

- Kellstedt, Paul, and Guy Whitten. 2018. *The Fundamental of Political Science Research.* Third Edition. Cambridge: Cambridge University Press.

    – Read: pages 273-281 (Section 12.1-12.2)

        ∗ Note: If you are using the 2013 edition, it's pages 247-256 (Section 11.1-11.2)

- Li, Quan. 2018. *Using R for Data Analysis in the Social Sciences: A Research Project-Oriented Approach.* Oxford: Oxford University Press. Appendix.

    – Read: pages 313-322

Optional Reading

- Karaca-Mindic, Pinar, Edward C. Norton, and Bryan Dowd. 2012. "Interaction Terms in Nonlinear Models." *Health Services Research* 47(1): 255-274.

Required Assignment:

- Please update your IPD time-tracking Google Sheet by Friday, March 26 at 11:30am.

- From Data Camp's course on Multiple and Logistic Regression, complete the "Logistic Regression" chapter, and upload a screenshot that proves you completed the chapter by Friday, March 26 at 11:30am.

Week 11: Panel Data Regression (April 2)

Class:

- Least-Square Dummy Variable (LSDV) Model

- Fixed effects

- Testing for serial correlation

- Testing for unit roots/stationarity

- Testing for heteroskedasticity

- Robust standard errors

- Clustered standard errors

- Panel logistic regression with fixed effects

Required Reading:

- Torres-Reyna, Oscar. 2010. "Getting Started in Fixed/Random Effects Models Using R." Manuscript. Princeton University.

    – Read: Slides 2, 8, 9, 11, 12, 14, 18, 22, 23

- Blattman, Chris. 2015. "Clusterjerk" [On Clustered Standard Errors]. Blog Post. Accessible at: https://chrisblattman.com/2015/12/08/clusterjerk/.

Required Assignment:

- Please update your IPD time-tracking Google Sheet by Friday, April 2 at 11:30am.

- If you have not already, start estimating your models and writing the empirical section of your paper. You will need at least some preliminary results for your poster sessions.

Reminder:

- If you have not already met with me twice, it would be advisable to book another 15-minute office hours slot before April 9. You do not want to lose 1 point toward your final grade for failing to fulfill this requirement.

Week 12: Regression Discontinuity, Difference-in-Differences & Synthetic Control in R (April 9)

Class

- The logic of synthetic control

- Estimating dif-in-dif, regression discontinuity, and synthetic control in R

Required Reading and Video:

- Imai, Kosuke. 2017. *Quantitative Social Science: An Introduction.* Princeton, NJ: Princeton University Press.

    – Read: Section 2.5 (pages 54-63)

- Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. 2010. "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program." *Journal of the American Statistical Association* 105(490): 493-505.

    – Read: Introduction (pages 493-494); Section 3.2-Conclusion (pages 498-503)

    – Watch: This video really helps with the understanding of the concept of the synthetic control. You can skip the part that talks about how to estimate everything in Stata.

- Xu, Yiqing. 2017. "Generalized Synthetic Control Method: Causal Inference with Interactive Fixed Effects Models." *Political Analysis* 25: 57-76

    - Read: pages 68 (starting at Empirical Example) - 69 (first two lines)

        * yes, one paragraph only

    - Optional: How to run `gsynth` in `R`

- Carrell, Scott, Mark Hoekstra, and James West. 2009. "Does Drinking Impair Performance? Evidence from a Regression Discontinuity Approach." *Journal of Public Economics* 95: 54-62.

Required Assignments:

- Please update your IPD time-tracking Google Sheet by Friday, April 9 at 11:30am.

- Please complete your poster for research week by Friday, April 9 at 11:30am.

Further Reading (Not Required)

- Card, David, and Alan Kruger. 1994. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." *American Economic Review* 90(5): 1397-1420.

- Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. 2015. "Comparative Politics and the Synthetic Control Method." *American Journal of Political Science* 59(2): 495-510.

Week 13: Research Week/Government Department Poster Sessions (April 16)

Class:

- There is no regular class

- Please attend the UT Government Department poster session

- Please attend the UT Research Week Poster Session

Required Assignment:

- Please update your IPD time-tracking Google Sheet by Friday, April 16 at 11:30am.

- By Friday, April 9 at 11:30am, please submit the latest version of your entire paper, which will now include an Empirical Analysis/Results section as well as a discussion of those results. I will be looking for the following elements:

    - The codebook that you wrote for the respective earlier assignment, included in an Appendix or as a Table

- – Your R script or `Stata .do` file as well your labeled data attached as separate items

- – All elements covered in Revise & Resubmit Assignment 1

- – Some summary/descriptive statistics (see the R trainings and the Li (2018) book for how to make summary stats and put them in LaTeX)

- – Some tables and, preferably, some coefficient plots

- – An interpretation (in words) of your results. Are the results statistically significant in the direction you argument suggest? Are your results substantively significant?

- – How certain are you about your findings? Recall how this was one of the major things Gerring and Christenson (2017, Chapter 1) and King, Koehane, and Verba (1994, Chapter 1) discussed. Hint: look at things such as standard errors, confidence intervals, p-values, R squared, whether your sample is representative of some broader population, etc.

- – Can your findings be interpreted causally (internal validity)? (Hint: it has to do with the method that you use.)

- – What is the external validity of your study? In other words, how well do your results generalize to other places/contexts, people, time periods? If you think the results generalize, say where/when and why. If the results do not generalize, why not?

- – Consult Appendix A of this syllabus as well as the Greene guide, Gerring and Christenson (2017, Chapter 14), and the other guides on Canvas for further ideas.

Week 14: Network Analysis and Test/Review (April 23)

Class:

- • The basics of network analysis

- • Some applications of network analysis in R

- • A review of what we covered this semester

Required Reading:

- • Imai, Kosuke. 2017. *Quantitative Social Science: An Introduction.* Princeton, NJ: Princeton University Press. Chapter 5

    - – Read: Section 5.2 (pages 205-220)

Required Assignments:

- • Prepare for a 10 question, multiple choice test that covers some key points from this semester. It will be graded as a quiz but will cover more material.

- Please update your IPD time-tracking Google Sheet by Friday, April 23 at 11:30am.

- From Data Camp's Network Analysis in R course, complete the "Introduction to Networks" chapter, take a screenshot to prove that you completed it, and load that screenshot on Canvas by Friday, April 23 at 11:30am.

Week 15: Geomapping in R (April 30)

Class:

- Geomapping in R with the `sf` package

- Loading shape files

- Using `mapview` to view shape files directly from the web

- Data structures (raster, vector)

Required Assignment:

- Please update your IPD time-tracking Google Sheet by Friday, April 30 at 11:30am.

- From Data Camp's Visualizing Geospatial Data in R course, complete the "Basic mapping with `ggplot2` and `ggmap`" and "Data import and projects" chapters, take relevant screen shots to prove you completed everything, and upload the screen shots to Canvas by Friday, April 30 at 11:30am.

- Please submit a respectful referee report of one of your colleagues' empirical papers by Friday, April 30 at 11:30am. Although I would *strongly* encourage you to look at the example referee reports on Canvas, your referee reports should have the following elements:

  - In the first paragraph, summarize the author's theory and how he/she tested his/her theory. (Referee reports *always* start with this one paragraph summary of the paper).

  - Discuss whether or not you found the theory and hypothesis compelling, and explain why or why not.

  - Discuss whether the research design and empirical section adequately map to the theory. In other words, talk about the operationalization. (Hint: Think about the diagram in Chapter 1 of Kellstedt and Whitten (2018) that links the theory to hypothesis.) Are the data put forth useful to test the hypothesis? Did the author choose the best possible design to test his/her hypothesis? Why or why not? If another design would have been better, explicitly say so. However, please do not just propose another design without a lot of thought. In all likelihood, the author thought carefully about the particular design that he/she chose.

  - Do the statistical models appear to be estimated correctly? If the author does not use an experiment or a design that attempts to mimic an experiment, did the

author include relevant covariates? If not, which covariates are missing that would impact the outcome? (Hint: Refer to the slides from Week 6 on Measurement Challenges to ensure any new covariates that you think should be added to the model would actually impact the dependent variable.)

– Would you recommend that the author perform any robustness tests? If so, which robustness tests would you suggest?

– See Appendix A of this syllabus for additional guiding questions that may be useful for assessing your colleague's study.

Week 16: Student Presentations (May 7)

Class:

- Student presentations

Required Assignment:

- Kindly submit your 10-minute (timed) presentation on Canvas by Friday, May 7 at 11:30am, and ensure it has the following elements:

  – Research question/motivation for the study

  – Contribution of your work to the literature (i.e. say something about where you study fits in)

  – Your theory, which explicitly details the causal mechanism/sub-reasons

  – The empirical method you are using to test your hypothesis, and why it is appropriate

  – the dependent variable,main independent variable, and control variables used – and summary statistics or maps (better–picture is worth a thousand words) of these

  – Your main results in a table or coefficient plot (preferable)

  – Some conclusions

Final Research Paper Due Date: May 16 at 11:30am

- Since the registrar has very tight deadlines for instructor grade submissions, I unfortunately will not be able to accept any late papers—beyond a 15-minute grace period to account for technical issues at submission, etc.

Appendix A   Questions to Consider for Papers

A.1   All Studies

1. Does the study answer an important question to the world, and does the author justify its importance with a factual argument—as opposed to justifying the topic in overtly normative terms?

2. Does the study contribute to a scholarly literature, and does the author demonstrate sufficient knowledge of that literature to critique it and add to it?

3. Does the study abide by the rules of (descriptive or causal) inference—and contain public procedures, uncertainty estimates, a disinterested posture toward the truth, attention to possible error, and scope conditions?

4. Is the author clear and consistent about the type of relationships, theory, and objectives of the research?

5. Is the writing clear, does the author avoid the passive voice and colloquial language, and are there any grammar issues?

A.2   Quantitative Studies

1. Is the dependent variable in its concept form clear to the reader?

2. Is the principal independent variable in its concept form clear to the reader?

3. Are there cleanly measured, credible data available that clearly map to the dependent variable and independent variable in their concept forms?

4. Is there a falsifiable theory that is formulated at a high level of abstraction?

5. Is there a clear hypothesis that is formulated at a lower level of abstraction than the theory?

6. Does the hypothesis clearly map onto the theory?

7. Is the argument coherent and credible?

8. Are the research design and data appropriate for the research question, theory, and hypothesis?

A.3   Mixed Methods Studies with Qualitative Elements

A.4   All Mixed Method Studies

    :

1. Does the author use integration of the quantitative and qualitative methods appropriately, and avoid triangulating methods for purposes for which they are ill-suited?

Case Studies:

1. Is/are the type(s) of case studies appropriate given the research question?

2. Does the author provide a clear and compelling justification for the selection of the case(s) being examined?

3. Is the detective work for the case study complete enough to sufficiently answer the research question?

Conceptualization Pieces:

1. Does the author have a clear grasp of the semantic field—that is, does she/he identify like terms and appropriately distinguish them from the concept of interest?

2. Is the author clear about the domain of his/her concept, and appropriately classify it as experience-near (i.e. relative to a particular area) or experience-distant (i.e. universal, positivist)?

3. Does the author choose the appropriate conceptualization strategy—that is, does she/he pay appropriate attention to the abstraction of the concept, avoid conceptual stretching, specifically state the intension and extension, and justify why couching the concept in terms of cumulation, a radial concept, re-definition or family resemblance is appropriate?

Interviews:

1. Does the author select subjects who can speak to the author's research question, and is there a clear, compelling, and ethical selection criteria for subject inclusion/exclusion?

2. Does the author seek out subjects who can provide a diverse range of perspectives on the research question at hand?

3. Does the author provide details about how he/she found the subjects, whether they received compensation, and locations/conditions of the interviews?

4. Does the author ask subjects appropriate questions that map to the research question of interest?

5. Are the answers from the subjects compelling enough to answer the research question definitively?

Focus Groups:

1. All of the above questions for interviews are relevant for focus groups as well.

2. Does the author make a concerted effort to ensure that dominant people in the room do not monopolize the discussion, and that more shy people are able to contribute to the discussion?

Ethnographies:

1. Does the author provide a compelling justification for why the ethnography she/he undertakes is relevant to the research question of interest?

2. Does the author have the training and capacity (e.g. language abilities, skills) to be able to credibly undertake the ethnography?

3. Is the author's role in the ethnography distracting to the extent that it alters the behavior of the actors under study, and does the author provide a compelling justification for why his/her role is not distracting?

4. Does the author make specific reference to the ethics of the ethnography, and are there any ethical concerns regarding the author's presence?

5. Is the author's attention to method (e.g. keeping daily field notes, minimizing distraction) apparent to the reader?