POLI 5300:
Political Science Research Methods
Section 110 (Fall 2017)
6 PM to 9 PM Tues in FH 312

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Catalog Description
This course introduces students to elements of research design and statistical analysis. Topics covered include hypothesis-testing, reliability and validity, measures of association, linear regression, and maximum likelihood estimation.

Course Overview
This course is designed to enable students to understand quantitative research in political science. It begins with the essential principles of critical evaluation of sources and the method of hypothesis testing, and then proceeds to the mathematical tools most commonly used in quantitative political science research. The emphasis is on preparing students to read and understand sophisticated research. This course meets face-to-face, with supplemental materials made available online through the A&M-Central Texas Canvas Learning Management System [https://tamuct.instructure.com].

Course Objectives and Learning Outcomes
Upon completion of this course, the student will be able to:
1. Distinguish science from pseudoscience
2. Derive testable and falsifiable hypotheses from empirical theories of politics
3. Distinguish between normative and empirical questions
4. Distinguish between independent and dependent variables, as well as antecedent, intervening, and alternative variables
5. Identify the types and tests of measurement reliability and validity
6. Evaluate research designs for external validity, internal validity, and construct validity
7. Find the central tendency of any variable
8. Distinguish between variables which are normally distributed and those which are not
9. Describe and evaluate difference of means tests
10. Identify the proper measure of association between two variables to use given the data
11. Distinguish between significance of individual variables and the goodness-of-fit of the model as a whole
12. Identify the statistically significant independent variables, their direction of effect, and the relative magnitude of their effects when given the results of a multivariate linear regression in political science research
13. Identify the statistically significant independent variables and their direction of effect when given results of a logit or probit (binary, ordered, and multinomial), at least one duration model, and at least one multistage model
14. Interpret such quantitative social science research and communicate that interpretation in speech and writing

15. Master the use of academic technology to find and interpret data to solve problems.
16. Identify weaknesses in existing quantitative research and construct a research design that addresses at least some of those weaknesses.

In-class exercises are directed at each of these learning objectives. In addition, the research design and presentation assess outcomes 2, 14 and 16. The academic scavenger hunt assesses outcome 15. The hypotheses and variable exercise assesses outcomes 2, 4 and 13. The final exam assesses outcomes 1 and 3-13.

Required Readings
The following two books are required and should be available for purchase at the bookstore. Of course, you may purchase books elsewhere, including online retailers; just be sure to get the proper edition of Gujarati. Unlike most of my courses, e-books are fine for this one.

> Damodar Gujarati. 2015. *Econometrics by Example*. 2nd Ed. NY: Palgrave Macmillan. ISBN-13: 978-1137375018 (Hereafter referred to as Gujarati)
>
> Gary King, Robert Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research.* Princeton, NJ: Princeton University Press. ISBN-13: 978-0691034713 (Hereafter referred to as KKV)

Other required readings may be found on Canvas.

Technology Requirements and Support
This course will use the Texas A&M-Central Texas Instructure Canvas learning management system for course readings, the Academic Integrity Exercise, and PowerPoint slides. Logon to Texas A&M-Central Texas Canvas [https://tamuct.instructure.com].

> Username: Your MyCT username (xx123 or everything before the "@" in your MyCT email address)
> Password: Your MyCT password

Technology Support:
For log-in problems, students should contact Help Desk Central.

> 24 hours a day, 7 days a week:
> Email: helpdesk@tamu.edu
> Phone: (254) 519-5466
> Web Chat: [http://hdc.tamu.edu]
> *Please let the support technician know you are an A&M-Central Texas student.*
> For issues with **Canvas**, select "chat with Canvas support," submit a support request to Canvas Tier 1, or call the Canvas support line: 1-844-757-0953, links to all are found inside of Canvas using the "Help" link.

For issues related to course content and requirements, contact your instructor.

Writing Requirements
One objective of the course is to improve student writing. In concrete terms, all assignments for this course should be considered writing assignments as well as substantive ones. Your submissions should always be typed (although diagrams may be hand-drawn) and in the form of full sentences or paragraphs as appropriate. Grammar and spelling errors will reduce the credit you receive, even for otherwise correct answers. See Canvas for a link to my pet grammatical peeves.

Of course, good writing requires more than correct spelling and grammar, and in longer pieces I'm looking for a thesis, for paragraphs to have topic sentences, and for well-cited and evidence-based argumentation. An argument is complete if it contains a claim (something you are trying to prove), evidence (properly-cited, of course), and a warrant (the evidence logically supports the claim). The citation system we'll be using in this class is that of the American Political Science Association (APSA), which is a slightly modified form of the parenthetical documentation system in the Chicago Manual of Style (not the note system found in the same volume). A guide to APSA citations is available on Canvas.

Grading (90/80/70/60, rounded to the nearest percentile)

Academic Integrity Exercise. This consists of watching a brief lecture on Canvas, downloading and taking a quiz, seeing where any mistakes on the quiz came from, and signing a statement. Once you successfully complete this exercise, you will no longer need to do so in future political science courses. If you have previously completed it for me, you do not need to do so for this course.

Completing the Academic Integrity Exercise is a prerequisite to passing this course. It must be completed by the due date on the syllabus.

- o *Rubric:* **You will automatically fail the course if you have not completed the Academic Integrity exercise on or before its due date.**

Homework Assignments (20% total -- 10% each). All homework assignments should be typed, printed, and submitted in person by the due date. Assignments may be emailed in the event of an excused absence, but the student should always bring a printed copy for the next session. Each assignment is attached at the end of this syllabus, as well as a simple rubric of how many points each section is worth. Note that each grammar/spelling error will reduce your assignment grade by one point (1%), up to a limit of 20 points (20%) deducted.

Research Design (45%) – See Appendix IV for Rubrics, and note that Enterline (2007), available on Blackboard, describes the steps of a research design from pp. 1-21. Rather than repeat everything he says, I simply emphasize that you should follow his instructions when constructing each element of the research design.

1. Research Question (20 points): Students must type one page (approximately 300-400 words) about their research question, clearly identifying why it is important, the dependent variable of interest, and as many independent/control variables as possible. The research question must be an empirical question about politics and fall into one of the following subfields: American politics, comparative politics, or international relations. A list of 108 ideas for your research question is attached to the syllabus; these can serve as jumping-off points for studying what interests you. Any references should be cited using the APSA system.

2. Annotated References (50 points): Students must produce a list of at least ten (10) academic articles or books published since 1990 –at least three of which should be from 2010 or later -- that study their dependent variable (or a closely-related variable) using their own quantitative statistical analysis. Provide a full APSA citation for each source. After each article, the student should identify the dependent variable studied by the author as well as the statistical model(s) used by the author in one sentence. It is not necessary to understand the statistical model(s) yet, but what does the author call them? Common examples include esoteric acronyms and terms such as OLS, GLS, probit (standard, ordered or multinomial), logit (standard, ordered, or multinomial), Cox, Weibull, ANOVA, Poisson, ZINB, negative binomial, etc. The purpose of this requirement is to help you filter the articles for the next stage of the RD – you'll want to end up selecting articles that use techniques we cover in class, or that can be understood with the generic method of interpreting unfamiliar statistical techniques that I'll be teaching you.

   For example, if I was studying what causes some people to support President Trump more than others (i.e. my dependent variable is support for Trump), I might annotate the following reference:

   > Grillo, Michael C. 2017. "Nationalist Politics: The Role of Predispositions and Emotions." In *Why Irrational Politics Appeals: Understanding the Allure of Trump*, ed. Mari Fitzduff. Santa Barbara, CA: Praeger, pp. 87-106.

   > Grillo (2017) uses support for Trump as his dependent variable. He predicts support for Trump using OLS regression.

3. Quantitative Literature Review (100 points). Students will be required to type 3500-5000 words interpreting and reviewing at least eight (I suggest no more than a dozen) peer-reviewed articles or books from academic presses to see what others have discovered that may be relevant to their question. You do not have to use the ones from your annotated references if you've since located better ones. The literature review should be typed, double-spaced, with page numbers and use of APSA citations in text.

a. Create a cover page. Come up with a title other than "literature review" or the like (you may want to save this part for last, since you may not know your thesis yet); add your name and institutional affiliation (presumably, Texas A&M University – Central Texas).
   b. Begin the literature review by establishing your question and its importance. This should take a paragraph or two.
   c. Then provide a thesis about the research on that question. This could take the form of an answer to the question suggested by the research, a claim that the research can be divided into several categories (each with its own approach to the question), or that the research to date has been inadequate (if so, you should provide an idea -- or several -- for better researching the question near the end of your literature review). This should not take more than a paragraph, and the thesis itself should be a single sentence.
   d. Now establish your thesis through a review of each piece of the literature – its dependent variable, its theoretical approach (answer) to the question, its research design, its statistical methods, and your interpretation of the statistical results (which may well differ from the author's own interpretations). Conclude your discussion of each piece of literature by examining the weaknesses of the author's approach and what knowledge we gain from the study (if any).
   e. Conclude by comparing the literature you've just reviewed, taking care to provide the necessary warrants that connect the studies to your thesis. Suggest a path for future researchers to follow.
   f. Attach a works cited page in APSA format.
4. Full Research Design (200 points)
   a. Revise your Quantitative Literature Review in accordance with the comments you received.
   b. Now add a section on your theory and hypotheses. See Enterline (2007) and the attached rubric for more detail.
   c. Now add a research design. See Enterline (2007) and the attached rubric for more detail.
   d. Finally, add an abstract to the front of the paper (second page). The abstract should concisely summarize the problem, what we have learned from previous approaches, what remains to be learned, your theory (in a few sentences), and a sentence or two about how you intend to test the theory.
   e. Be sure to integrate all of the material into a cohesive whole. You should have a single works cited section, etc.
5. Research Presentation (80 points). Students should prepare a presentation of 10-16 minutes on the findings from their literature review and their own theory and research design. A PowerPoint presentation or physical handout must be used to communicate the statistical information in at least one of your articles to your listeners. The key to the first part of the presentation is demonstrating that you can take quantitative social science and explain it to others with some quantitative training. The second part is your opportunity to tell people about your proposed solution to the puzzle(s) left by the existing literature and how you intend to evaluate that theory's hypotheses.

In-Class Exercises (10%). These brief exercises will ask students to solve a problem, usually by interpreting one or more tables of statistical results or graphs. The class can then discuss the real-world implications of the theory being tested, and whether the test tends to disconfirm the theory.

Final Exam (25%). The final exam will consist of a series of problems designed to assess learning outcomes 1 and 3-13, listed on the first page of the syllabus. There will be three problems for each outcome except for 13, which will have fifteen problems dedicated to it (three for each type of model). Therefore, the exam will consist of a total of 48 problems. The exam is open-notes and open-book (but electronic devices must remain in airplane mode). You should bring a blue book or two for the exam, for it calls for short answers (often just a word or a number, but sometimes a sentence or two) to most of the questions. Calculators are permitted, although you should only need them for one or two questions.

Overall POLI 5330 Course Rubric

Item	Points	Percent of Grade
Academic Integrity Exercise	***Required to pass the course***	N/A
Homework Exercises	2 @ 100 points each = 200 points	20%
RD: Research Question	20 points	2%
RD: Annotated References	50 points	5%
RD: Quantitative Literature Review	100 points	10%
RD: Research Design	200 points	20%
RD: Presentation	80 points	8%
In-Class Exercises	100 points (equally distributed)	10%
Final Exam	250 points	25%
TOTAL POSSIBLE	**1000 Points**	**100%**
895+ = A 795-894=B 695-794=C 595-694=D 594 or lower = F		

Course Policies

Late/Incomplete Policies for POLI 5300

o   There will be no incompletes in this class, barring actual hospitalization or unforeseen deployment after the withdrawal deadline has passed.

o   Late homework assignments will receive zero credit. As for the RD, any late element (except for the presentation) loses 10% of its possible credit per day (so a week late = only 30% of the credit that would otherwise be earned will remain). Missed RD presentations may not be made up and will receive zero credit.

Absences and Make-Up Work

•   Attendance is required. If absent, let the instructor know in advance if possible and ASAP if some emergency arises at the last minute. Failure to do so will mean an unexcused absence (no participation or homework credit for the day).

•   Make-up work is required for any **excused** absence after the first. It makes up for the inability of the student to participate in the class. I will generally have you write an additional 400-600 word "participation exercise" on some topic(s) or question(s) we discussed in class. *Note that this is in addition to completing the homework for the missed session – the two are graded separately.* **When you return from a second or subsequent excused absence, be sure to request the make-up work. It is your duty to ask, not the instructor's duty to remind you.** Make-up work is due one week after it is assigned, or by the last day of the course – whichever is **sooner**.

Regrade Policy: It is possible for me to make a mistake when grading. So if you think that I graded part or all of an assignment incorrectly, you have one week to return it to me for regrading against the rubric or key. You may request that all or only part of the assignment be regraded. I take no offense at this. The same policy applies to the final exam; you have one week from when grades are posted to request a regrade of any questions.

Academic Integrity

University Code of Academic Honesty: Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust,

fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be reported to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

Specific guidelines for this course, which supplement and do not replace University policy:

- *Violations:* There are plenty of ways to cheat listed by the Student Handbook. Some common violations of academic integrity that I have observed while teaching similar classes at TAMUCT are
    - Copying another student's homework. I encourage study groups, but copying must be avoided. Discuss the readings as long as you wish, but don't "share" the contents of your assignments before they are due. You may not "jointly" complete any of the homework exercises in this course unless otherwise indicated on the assignment; these are to be completed by yourself alone. If you provide another student with a copy of your homework and they copy it, both you and the copier will be deemed to have violated the policy.
    - Using direct quotes without quotation marks. Even if you are just using three- or four-word phrases, you need to surround them with quotation marks if you didn't create them yourself. This is true even if you cite the source! Remember that changing a few words in a sentence does not transform a direct quote into a paraphrase; instead, it transforms one long direct quote into several shorter direct quotes with a word of your own between each. A true paraphrase is the expression of the cited source's ideas in your own words.
    - Paraphrasing another person's words without citing the source.
- *Penalties:*
    - The normal penalty for a violation of academic integrity (whether or not it is specifically listed above) in any of my classes is a grade of zero for the work or a deduction of 20% (two letter grades) from your course grade, whichever is **greater**. The infraction will be reported to the TAMUCT administration, with a recommendation for probation in the case of deliberate violation or remediation in the case of clearly inadvertent violation.
    - The (a) outright purchase, download, or completion by others of an exam/RD element, or (b) second or subsequent violation of academic integrity (in this course or other courses) display such serious disregard for academic integrity that either one of them will result in course failure **and** recommendation for appropriate action to the TAMUCT administration.

Drop Policy
If you discover that you need to drop this class, you must complete a Drop Request Form, found through the Registrar's web page:
    https://www.tamuct.edu/departments/business-office/droppolicy.php
Professors cannot drop students; this is always the responsibility of the student. The Registrar's Office will provide a deadline on the University Calendar for which the form must be completed, signed and returned. Once you return the signed form to the Registrar's Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar's Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Student Resources

- **911 Cellular:** Emergency Warning System for Texas A&M University – Central Texas
  - 911Cellular is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in 911 Cellular through their myCT email account.
  - Connect at 911Cellular [https://portal.publicsafetycloud.net/Texas-AM-Central/alert-management] to change where you receive your alerts or to opt out. By staying enrolled in 911Cellular, university officials can quickly pass on safety-related information, regardless of your location.
- **Library Services:** The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 72,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at TAMUCT are available through our website to help students navigate these resources. On-campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.
  - Research assistance from a librarian is also available twenty-four hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.
  - Our 27,000-square-foot facility on the TAMUCT main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our homepage: https://tamuct.libguides.com/
- **Academic Accommodations:** At Texas A&M-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier free education. The Department of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the University's programs, services and activities. If you believe you have a disability requiring reasonable accommodations please contact the Department of Access and Inclusion at (254) 501-5831. Any information you provide is private and confidential and will be treated as such.
  - For more information please visit our Access & Inclusion webpage: https://www.tamuct.edu/departments/access-inclusion/
  - TAMUCT supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and guidance from US Department of Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. For more information, please visit https://www.tamuct.departments/index.php Students may also contact the institution's Title IX Coordinator. If you would like to read more about these requirements and guidelines, please visit: http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf
- **Tutoring**: Tutoring is available to all TAMUCT students, both on-campus and online. On-campus subjects tutored include Accounting, Advanced Math, Biology, Finance, **Statistics**, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111.
  - If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or any other question, contact Academic Support Programs at 254-519-5796, or by emailing Kim Wood at k.wood@tamuct.edu
  - Chat live with a tutor 24/7 for almost any subject on your computer! Tutor.com is an online tutoring platform that enables TAMUCT students to log-in and receive FREE online tutoring and

writing support. This tool provides tutoring in over forty subject areas. Access Tutor.com through Canvas.

- **University Writing Center**: Located in 416 Warrior Hall, the University Writing Center (UWC) at Texas A&M University – Central Texas is a free workspace open to all TAMUCT students from 10am-4pm Monday-Thursday during the Summer semester (June 5, 2017 to July 27, 2017). Students may arrange a one-on-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available). Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. While tutors will not write, edit, or grade papers, they will <u>assist students in developing more effective composing practices</u>. By providing a practice audience for students' ideas and writing, our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. <u>Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the University Writing Center is here to help</u>! If you have any questions about the University Writing Center, please do not hesitate to contact Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu

Amendments

Not all exigencies can be foreseen. I reserve the right to amend the syllabus at any time. Any such amendment will be provided to the students in writing.

Instructor's Personal Statement (not required reading, but may be of interest)

I strive to provide my students with a liberal arts education. Such an education is intended to expand human potential by emphasizing critical thinking skills, strong writing and oral communication skills, and perceptive responses to others' arguments. These goals enable students to become lifelong learners, community members, and ultimately to lead rewarding lives. Therefore, under the broad rubric of a liberal arts approach to teaching, I emphasize four objectives in my teaching: development of critical thinking skills, advancement of writing and speaking skills, moral development, and mastery of what in my judgment constitutes the "core" of the area under study. These goals determine how I construct course syllabi, which materials I use, and how I manage the classroom.

Critical Thinking Skills

Students should learn to think critically about the material in the course (primarily readings, but also handouts, lectures and the occasional film). This is a difficult skill to learn, but one that pays dividends in every other class and in the outside world. After all, we want educated and critical citizens.

I divide critical thinking skills into three components. First, students must be perceptive readers and listeners. Even where the course readings consist largely of a standard textbook, I try to model this skill in class discussions by initially responding to many questions with "Are you asking X, Y, or Z?" This isn't evasion or stalling – rather, understanding the nuances of an argument is a prerequisite to analyzing it.

Second, students should have the ability to challenge and dissect arguments made by the course materials, fellow students, or myself. There are some students who are looking for "the way it is" to be handed to them from on high. I aim to challenge those students by presenting concrete, unsolved puzzles, and then presenting a number of possible solutions, requiring them to compare the evidence for each. Since the questions I ask in class are usually open questions within the discipline of political science, there are no easy answers. When I open a class discussion, engage with students doing discussion exercises, or grade homework assignments, I play "devil's advocate" for each student or group, taking a different position as I interact with each student. It is therefore

disappointing when students simply parrot back what they believe the professor wants to hear. Their own thoughts count.

Just as important as the ability to analyze an argument is the ability to construct and defend one, choosing one among several imperfect explanations as the "best bet" for explaining a phenomenon or the superior normative framework. There are some students who are very good at critiquing existing explanations, but who then use this skill as an excuse to avoid argument altogether: "None of these explanations are perfect, so it's all just a matter of opinion." This is illustrated by Russian dissident Gary Kasparov (2017):

> *"The point of modern propaganda isn't only to misinform or push an agenda. It is to exhaust your critical thinking, to annihilate truth. Modern dictatorships have become far more sophisticated still in how to achieve their ends. They learned that by constant bombardment, your senses become overwhelmed. You start to doubt, to shrug your shoulders, to tune out, and that makes you vulnerable. Instead of pushing one lie, one fake, they can push a dozen, or a hundred, and that's pretty good odds against one lonely truth. They win when you say: 'Who can be sure what really happened?'"*

So I do push students to weigh the strengths and flaws of each competing explanation and identify the one which is most likely to be correct. For empirical questions, I require them to devise some way in which their preferred explanation could be tested. In sum, I try to combine the focus on argument dissection that one finds in academic debate with the focus on puzzle-solving that one finds in science and philosophy.

Writing Skills and Quantitative Reasoning

As a former debater and debate coach, I appreciate the importance of being able to write and speak clearly. Of course, one of the most important ways to accomplish this is by assigning writing (and, in some courses, speaking) activities that require effective argument. In order to help students proofread their work, I set up a page on the Canvas course site illustrating the most common student grammatical errors: word mix-ups, sentence fragments, agreement of subject and verb, and improper comma or apostrophe usage. I am then able to simply write the number of the error next to it on the page so that the student can look up the error and the solution. This technique allows me to focus my comments on the thesis, structure, and style of students' essays.

Political science is indeed a social science, and that means that sometimes we use numbers. Quantitative reasoning is being able to think critically about and explain these numbers. You may or may not be able to do the math yourself, but I seek to teach you to explain what happens in the math to others. Having even the most rudimentary ability to interpret statistics and equations puts you a step ahead of many humanities and even some social science students. Moreover, being a thoughtful participant in politics means being able to learn from quantitative evidence and detect the misuse of the same. In this course, we will learn to interpret tables of statistics to double-check the claims being made by the authors of quantitative studies.

Moral Development

One goal of a liberal arts education is to render students more capable of self-reflection and positive development. Moral education is essential to this process, yet may be the most difficult task facing an educator. Students must first be convinced that the ethical life is the best life. Fortunately, most students already have a set of values, albeit sometimes under-examined and often inconsistent ones. The task of the professor is to challenge their moral beliefs in such a manner that students have to choose between competing values and become more consistent in their moral judgments. It is not the task of the professor to ensure that students adhere to a particular value system or ideology; instead, the ideal professor will challenge students of any ideology and make them more consistent in their judgments.

For this to be possible, students need to recognize their own underlying assumptions (often their religious faith, combined with a cynical view of human behavior) that make a system of values possible. They must then be able to defend the connections between those assumptions and their value choices. In short, political science needs to be seen as part of a broader liberal arts curriculum which prepares students to do justice (as students understand it) in the world. Otherwise, we risk training sophists who simply use their skills to manipulate others.

Subject Mastery

Finally, each class I teach has a certain "core" of material I expect students to master. This material is the necessary data for intelligent discussion of the questions posed by the course. Mastery is different than memorization; it means being able to apply the material to an unanticipated question or situation. The nature of these questions determines the type of class presentation. In this class, I rely heavily on lectures and structured in-class exercises. The final exam is based on both the lectures and the readings we discuss, and serves as an incentive to describe, analyze and synthesize the course materials.

Course Schedule

Session	Unit	Topics	Required Readings	DUE
Aug 29	Social-Scientific Reasoning	Science and Values	None	
Sept 5	Quantifying Politics	Data: Types, Reliability and Validity	Lakatos (Canvas) KKV, Chapter 1 Dhongde (Canvas) Gustaffson and Hagström (Canvas)	Academic Integrity Exercise
Sept 12		Data: Observation and Surveys	Shiraev and Sobel (Canvas)	Academic Scavenger Hunt
Sept 19	Evaluating Research Designs	Hypothesis-Testing	Donovan and Hoover (Canvas) KKV, Chapter 3	RD: Research Question
Sept 26		Threats to Validity	KKV, Chapter 4	Hypotheses and Variables Exercise
Oct 3	Interpreting Univariate Statistics	Central Tendency, Statistical Distributions, and Significance	KKV, Chapter 2 Ziliak and McCloskey (Canvas) Enterline, pp. 1-21	
Oct 10	Interpreting Bivariate Statistics	Difference of Means Tests, Cross-Tabulations, and Scatterplots	KKV, Chapter 6 Pollock (Canvas)	RD: Annotated References
Oct 17		Measures of Association and Bivariate Regression	Kellstedt and Whitten (Canvas)	
Oct 24	Interpreting Multivariate Statistics	Multivariate Regression I	Gujarati, Chapter 1 KKV, Chapter 5	
Oct 31		Multivariate Regression II	Gujarati, Chapters 4-7	
Nov 7		Logit and Probit Models	Gujarati, Chapters 8-10	RD: Quantitative Literature Review
Nov 14		Duration Models	Gujarati, Chapter 18	
Nov 21		Multistage and Count Models	Gujarati, Chapters 11 (Appendix) and 12	RD: Full Research Design
Nov 28	Integration	Research Symposium I	None- build your presentation and visual aid!	Presentations
Dec 5		Research Symposium II	None – study for the exam!	Presentations
Dec 12		Final Exam	Review the learning outcomes on the syllabus!	

POLI 5300
Academic Scavenger Hunt

Overview: The research required for this Academic Scavenger hunt and the paper in the course may seem intimidating. Luckily, there are a number of databases that can help you out. The following table simply organizes them by task – i.e. what are you looking for? To access the non-public databases (i.e. most of them), look on the left-hand side of the TAMUCT Library home page (http://tamuct.libguides.com/index) and click either the database (if listed as one of the top five) or A-Z Databases and then pick the one you want to use. If you are working from home you will need to use your myCT username and password (the same ones you use to access other resources such as email) to log in when prompted.

Purpose	Database	Notes
Find a peer-reviewed article more than a few years old	JSTOR	It's often best to only check the Political Science box, but your topic may also involve other disciplines.
Find a recent peer-reviewed article	Academic Search Complete	Be sure to check the "peer-reviewed" box.
Find information about an event or particular time in history	America: History and Life (US) or Historical Abstracts (Outside US)	You can select a particular time range to search.
Find a specific journal article	eJournals	If we don't have the journal for the year needed, try interlibrary loan. Articles are usually sent quickly (within a few days) as pdf files.
Find a news article from more than a month ago	Lexis-Nexis Academic	Be sure to specify your date range. Remember to search a day before and a day after the event you're looking for.
Find a recent news article	Google News (public)	Be sure to check the reliability of the source, since Google News includes blogs and such.
Find a law review article	Lexis-Nexis Academic	Just be sure to use Advanced Search and check only the Law Reviews box.
Find a book	WarriorCat or WorldCat or Google Books (public)	If you find something good that we don't have while using WorldCat or Google Books, interlibrary loan it. It takes 1-3 weeks for an ILL book to show up.
Find a single statistic	Wolfram Alpha (public)	Example: I want to find France's GDP growth in 2009.
Find a thesis or dissertation on a particular topic	Dissertations and Theses	While dissertations aren't technically peer-reviewed, they can be used in the literature review and research design.
If the above don't generate what you need	WarriorQuest	Warning: Tends to produce lots of results, but it does check many databases and often finds things when other searches fail. You can narrow the search by date, by whether the library has the material, by type of material, etc.
If all else fails…	Office hours, JeffreyDixon@tamuct.edu, or "Chat with a Librarian"	You can always email me for help. There's also a 24-hour "Chat with a Librarian" feature on the Research page of the TAMUCT library.

Instructions:
A. Answer the following questions with the best, most recent information you can find. Answers should be typed and in the form of full sentences or paragraphs with correct source citations using APSA format. The quality of the underlying data should be clear in your answer (10 points each).
   1. What were the terms of the peace deal reached in Ukraine on September 20, 2014?
   2. Find a recent (2013-2017), peer-reviewed journal article (not a book review) to which you have access that examines the relationship between arms races and interstate war. What relationship does it find – that arms races increase the probability of war, that they decrease the probability of war, or that they have no significant effect on the probability of war?

3. What was the <u>largest</u> European economy to **not** experience a 2% or higher increase in unemployment during the 2008-2010 economic crisis?
4. What was the first full sentence on the second page of the first full article in the first issue of *Sociometry*?
5. According to a 2012 article, which better predict the outcomes of coups d'état – the structure of militaries, or economic factors?
6. How did the global simulation GLOBUS (used chiefly in the 1980s) differ from earlier world simulations? Note that there is more than one model called GLOBUS out there; you are looking for the one used by political scientists to forecast the state of the world over time.
7. In what month of what year did North Korea first deploy troops to the Middle East?
8. Find a 2017 article assessing whether Muslims who know more about Islam are more or less likely to support Islamic terrorism.   What effect does increased knowledge of Islam have on support for terror, <u>and</u> is it the most important determinant of such support?
9. Find a political science journal article from 2017 with the title, "A Recap of the 2016 Election Forecasts." Examine Table 1. Which two models were most accurate at forecasting the popular vote in the 2016 Presidential election?

B. Attach a works cited page (APSA formatted). (10 points)

POLI 5300
Hypotheses and Variables Exercise

Instructions: Find and read one recent (2010 or later) quantitative research article on or related to your research topic (you may wish to switch topics if you cannot locate even one recent article on your preferred topic). The article should test one or more hypotheses using statistics. Adding "hypothesis" and/or "significant" as search terms may help you narrow down your choice.

  I. Print the article so you can attach it to your work.
  II. Then answer the following questions. The answers should be typed, but diagrams may be hand-drawn.
    A. Questions about the article you chose (8 points each, or 40% of the assignment grade):
      1. What is the author or authors' dependent variable of interest? If they have more than one, just pick the one that interests you more.
      2. What are at least three independent variables the author or authors include to predict this dependent variable?
      3. What are the authors' testable hypotheses about the dependent variable? List at least two of them if more than one exists.
      4. What do the authors call the statistical technique they use to evaluate these hypotheses? If there is more than one technique used, list them. Note that you probably won't understand what the words mean yet, but you will in time (common ones are logit/logistic regression, OLS, GLS, Cox or Weibull models, probit, ordered logit/probit, multinomial logit/probit, Poisson, negative binomial or zero-inflated negative binomial/ZINB, and so forth).
      5. What are the <u>author</u> or <u>authors'</u> conclusions regarding the validity of each of the hypotheses you listed?
    B. For each of the following hypotheses, identify the dependent variable and any independent variables. (6 points each for 30% of the assignment credit)
      1. State legislatures pass more bills when one party controls both of their houses than when one party controls one house and another party controls the other house.
      2. People around the world are increasingly worried about global climate change.
      3. As battle-deaths rise, public support for wars falls.
      4. Horizontal inequality and anocracy increase the probability of civil war in a given country.
      5. Support for social welfare programs is determined by a person's income, race, and gender.
    C. The following is a list of three variables: a person's intention to vote in an upcoming election, that person's general interest in politics, and the expected closeness of the election. Do the following (6 points each for the last 30% of the assignment credit):
      1. Write a hypothesis relating the first two variables to each other in some way.
      2. Identify the independent and dependent variables in your hypothesis.
      3. State how you expect the third variable to affect the hypothesized relationship.
      4. Draw an arrow diagram including all three variables, consistent with what you said in #2 and #3.
      5. Determine whether the third variable is antecedent, intervening, alternative, or irrelevant.

POLI 5300
Appendix I: 108 Ideas for Research Questions

A. American Politics
1. When do Presidents go public with policy proposals?
2. When do Presidential appeals enhance the popularity of a policy?
3. When do Presidents use executive agreements in foreign policy rather than treaties?
4. What predicts the outcome of Presidential elections?
5. What influence does partisanship have over Presidential veto decisions?
6. Why do some Presidents issue more executive orders than others?
7. What effect does Presidential partisanship have on economic growth rates?
8. What affects Presidential budgetary proposals (for some specific program, perhaps)?
9. When do Presidents use force unilaterally rather than seeking Congressional authorization?
10. Are Presidents more likely to use force when their popularity ratings/economic growth fall?
11. What effect does economic growth have on Presidential popularity?
12. What effect does defense spending have on economic growth?
13. What effect does the use of military force have on Presidential popularity?
14. Why do some executive agencies have larger budgets than others?
15. What predicts the roll-call votes of members of Congress?
16. What causes the distribution of committee assignments in Congress?
17. What leads to the creation of new committees or subcommittees in Congress (or their elimination)?
18. Why do some Congresses produce more legislation than others?
19. What causes Congressional gridlock?
20. Do campaign donations change policy in Congress/the Presidency/executive bureaucratic agencies?
21. Why has Congressional polarization increased?
22. What predicts the votes of Supreme Court Justices?
23. What predicts whether the Supreme Court will agree to hear a case?
24. What effect do term limits have on policy congruence (public opinion matching policy) in state legislatures?
25. What effect does multiparty competitiveness have on policy in the states?
26. To what extent does public opinion affect policy in the states?
27. What effect does lobbying have on public policy?
28. What affects how people vote?
29. What affects whether people vote?
30. What determines the outcome of House/Senate/gubernatorial/state legislative elections?
31. What issues are people most likely to vote on?
32. What determines which issues the public finds salient?
33. To what extent is political polarization growing in the United States?
34. What causes political polarization in the United States?
35. What effect do political factors have on judicial decisions to impose the death penalty?
36. When does the Supreme Court uphold executive agency decisions?
37. Why do Southerners vote differently than people elsewhere in the country?
38. What predicts partisan affiliation?
39. Are political orientations genetically transmitted?
40. How does descriptive racial/ethnic representation affect trust in government by that racial/ethnic group?

B. Comparative Politics
1. What factors predict economic development?
2. Does foreign aid promote economic development?
3. When does economic development promote human development?
4. What factors lead to the creation of strong states?
5. Does state strength cause of prevent political violence?
6. What are the most successful forms of democracy?
7. What causes – or reverses -- democratization?
8. What causes genocide?
9. What causes civil wars?
10. Why do some civil wars recur?
11. Why do some civil wars end in negotiated settlements while others end only in military victory or stalemate?
12. What leads to differences in crime rates across nations?
13. What predicts how much foreign aid a country will give?

14. What predicts how many effective political parties will exist in a democracy?
15. When do power-sharing agreements work?
16. Why are some countries characterized by more income inequality than others?
17. What causes domestic terrorism?
18. What causes coups d'état?
19. Do campaign finance limitations inhibit or reinforce democracy?
20. Are multiparty systems more likely to survive than two-party systems?
21. What effect does central bank independence have on the economy?
22. What is the relationship between colonialism and modern economic performance?
23. What is the relationship between colonialism and modern democratic performance?
24. What causes ethnonationalist conflicts?
25. Does religious diversity promote conflict/autocracy?
26. Under which forms of government do leaders retain office the longest?
27. How does political culture affect democracy/development?
28. How can we measure changes in political culture over time?
29. Does federalism promote peace/development/democratic consolidation?
30. Does resource scarcity promote conflict/autocratization?
31. How does trade alter the relative influence of interest groups in societies?
32. Why do some countries adopt fixed exchange rates while other opt to allow their currencies to float on the global market?
33. Does capitalism promote democracy?
34. What leads to more/less respect for human rights?
35. Does foreign direct investment promote development?

C. International Relations
1. What causes interstate war?
2. Why don't democracies fight each other?
3. Does capitalism promote international peace?
4. Does trade promote international peace?
5. How does the polarity of the international system affect the probability of conflict?
6. What causes general wars?
7. Are countries with different religions more likely to fight than those with the same religion?
8. What types of issues are most likely to lead to war?
9. Why do some crises escalate to war while others are resolved short of war?
10. Is war on the decline in the international system?
11. What effects do arms races have on the probability of war?
12. What effect do outside alliances have on the probability of war?
13. What determines whether two countries share the same allies?
14. Does international trade promote growth?
15. Do free trade agreements promote growth among their members?
16. When do countries follow the laws of war?
17. When do countries resolve disputes through arbitration?
18. Why are some regions of the world more war-prone than others?
19. Is civil war contagious?
20. Are revolutionary governments more aggressive?
21. What promotes trade between two countries?
22. Do capitalist countries fight each other?
23. When do states honor international agreements?
24. Why are some cease-fires more successful than others?
25. What determines where peacekeepers are sent?
26. Does peacekeeping work?
27. What are the political causes of trade?
28. Do international organizations promote peace?
29. What are the causes of international rivalry?
30. Is the United States declining relative to China?
31. What causes nuclear proliferation?
32. Do nuclear weapons produce peace?
33. What counterinsurgency strategies are most effective?

Appendix II: Glossary of Symbols Commonly Used in Statistics

I.　Common letters: Letters of the Greek alphabet are just like a, b, c, d, etc but they look more "scientific." Moreover, in statistics certain symbols mean certain things.

Letter (case matters)	Name (if needed)	Uses in Statistics
α	alpha	Cronbach's α (a measure of split-halves reliability), the maximum acceptable value of p (usually .05), or the constant in a regression equation (depends on context)
B, β	beta	Coefficients or standardized coefficients of independent variables. Note that if β_0 exists, it's probably the constant in a regression equation, while β_1, β_2, β_3, etc are the coefficients of X_1, X_2, X_3, etc.
Γ, γ	gamma	A measure of association (which tends to be inflated and thus less appropriate than other measures of association)
d		A measure of association – Somer's d, or a Durbin-Watson test of autocorrelation (depends on context)
Δ	delta	Change, e.g. ΔX means "change in X"
e		Error term, or the number 2.718… (depends on context)
ε	epsilon	Error term
η	eta	Sometimes used to indicate the population median
η^2	eta-squared	A measure of association
F		A statistical distribution used to compare variance and assess model significance
λ	lambda	A parameter of some statistical distributions, like the Poisson distribution
μ	mu	The mean (of a population)
N, n		The number of observations/elements in a population or sample
X̄	x-bar	The mean (of a sample)
π	pi	The number 3.14…, or probability (depends on context)
p		The probability that a coefficient, difference, or association is not zero (in a two-tailed test) or is not zero or less/zero or greater (in one-tailed tests). For statistical significance to hold, $p \leq \alpha$. Also used as the shape parameter in Weibull duration models.
ρ	rho	A measure of association – Spearman's rank-order correlation
r		A measure of association – Pearson's r
R^2		A measure of proportional reduction in error (PRE)
s		Standard deviation (of a sample)
σ	sigma	Standard deviation (of a population)
s^2		Variance (of a sample)
σ^2	sigma-squared	Variance (of a population)
t		A statistical distribution that equals the normal distribution when the number of observations is infinite, or time (depends on context)
τ	tau	One of three measures of association: τ_a, τ_b, or τ_c
Φ,φ	phi	A measure of association
ν		A measure of association (Cramer's v)
χ^2	chi-squared	A statistical distribution used to assess model significance
X		The independent variable(s)
Y		The dependent variable
z		How many standard errors a coefficient is from zero. If greater than 1.96 or less than -1.96, that means that $p < .05$ in a two-tailed test.
Z^2		The Wald statistic

II.   Common Mathematical Symbols
   A. Superscripts indicate exponents while subscripts can be used for several purposes. In virtually all of the reading we will do, the **subscripts are just descriptive**. No mathematical operations are performed on the subscripts themselves. For example, we might refer to the fifth observation of the independent variable as x_5, which just means "the fifth value of x" in that context. We also use them to indicate multiple independent variables (X_1, X_2, X_3, etc).
   B. Summation and Multiplication. The capital sigma and pi are used as shortcuts for long strings of pluses or multiplication signs. The italicized *i* is often used as an index, or subscript. Sometimes *t* is used instead, especially when representing time. In these notations, the subscripts are purely descriptive – they refer to the first x, the second x, the third x, etc. On the bottom, the first value of *i* is given (here it is 1). On the top, the final value of *i* is given (here it is N).

$$x_1 + x_2 + x_3 + \ldots + x_N = \sum_{i=1}^{N} x_i,$$

$$x_1 \times x_2 \times \ldots \times x_N = \prod_{i=1}^{N} x_i.$$

   Sometimes if the range of the subscript is already known, the author will dispense with the index. For example, $\sum a x_i$ means summing up *a* times *x* for all *x*'s in the range *i*.

   C. Modifiers. Sometimes an author needs to distinguish between similar variables. For example, there might be the actual value of Z and the observed value of Z. The most common modifier is called the **prime symbol**: Z ′ is referred to as "Z prime." You may also see symbols like Z″ (Z double prime), $\hat{Z}$ (Z-hat), or Z* (Z-star). These are no different from ordinary variables; you could call any variable A, B, Z*, $\bar{A}$ (A-bar) if you wanted and addition, multiplication, etc would all remain exactly the same.

Appendix III: A Generic Method for Interpreting Most Statistical Tables

   For many quantitative articles/chapters, reading the abstract and interpreting the tables gives you most of what you need to get out of the article. Therefore, learning to interpret other people's statistical results is a huge time-saver. The task is actually much simpler than it might appear. The statistical techniques used have names like Logit, Probit, Cox, Weibull, Heckman, and other arcane terms -- but you don't need to know all of the differences between them. In the end, statistical work is trying to predict the values of a dependent variable, using one or more independent variables. Changes in the independent variables are hypothesized to cause increases or decreases in the dependent variable. A simple process for reading these tables is to take the following steps:

1. Identify the dependent variable (DV) – what the author is trying to predict. Most authors have this in the title of the table, but sometimes you have to look in the text.
    a. What does an increase in the DV mean in the real world?
    b. There are three types of DV we will encounter in this course: the <u>amount</u> of something (e.g. economic growth), the <u>likelihood</u> of some event (e.g. whether the President vetoes a bill), and the <u>duration</u> of something (e.g. how long war or peace lasts). Be sure you know which of these types describes the author's DV – you will need it in step 4.
    c. There are two-stage models where the DV in the first part of the table becomes an IV in the second part, or "zero-inflated" models where the first part of the table is the likelihood that the DV is exactly zero while the second part estimates the value of the DV if it is greater than zero. These require careful interpretation, and we'll cover them in class.
2. Identify the independent variables (IVs) – the predictors of the dependent variable. These are usually listed as rows of the table. The relevant statistics about each IV are usually provided in the same row as the variable's name. *Ignore any row labeled "Constant" or rows labeled "Spline1," "Spline 2," etc. Similarly, we usually disregard Time^2 and Time^3.*
3. Often, the bottom rows are various summary statistics for the overall statistical model, not independent variables: "Pseudo-R^2," "N," "log likelihood," and so forth. They reflect the model's performance as a whole, not the significance of any particular independent variables. We'll learn to evaluate some of them in the course, but they're not essential for grasping the core findings of the model.
4. Identify the coefficient of each IV (typically the top number in the row, or the one that's **not** in parentheses). You are looking for a number which will be called a coefficient, or beta, or β.
5. For each coefficient of each independent variable find its **level of significance.** The significance level is the probability that one would find results this strong if the independent variable were completely unrelated to the dependent variable – i.e. the probability of stumbling across a coincidence like this. The usual standard for statistical significance in social science is less than a 5% chance that a relationship this strong would be observed by coincidence, where no real relationship existed.
    a. Look for one of the following indicators: *p* (should be <u>.05 or less</u>), *p<|z|* (same thing), *significance level* (same thing), or the use of *asterisks* (**) to indicate significance at the <u>.05 level or less</u>. In each case, <u>lower numbers are better</u>, since the number is the probability of this relationship being generated by random coincidence.
    b. If no *p* values are presented, then you can determine whether *p* < .05 by one of two methods:
        i. If raw Z scores are given, then simply look for the IVs with Z scores above 1.96 or below -1.96. These are the significant variables at the .05 level or below.
        ii. If standard errors are provided (often in parentheses below the coefficients in each row), then you can check to see whether the absolute value of the coefficient (i.e. dropping any negative sign for now) is greater than 1.96 * the standard error. If so, the variable is significant at the .05 level or below.
    c. You can more or less cross out and ignore the <u>insignificant variables</u> from here on out – they <u>might actually matter, but the author has **failed to prove that they matter**</u>. Importantly, the author has **not** proven they are irrelevant; he or she has just failed to detect a relationship in all of the noise.

6. For each significant variable, check the direction of the relationship.
    a. If the DV is the <u>amount</u> of something: A positive coefficient for a given IV means more of it and a negative number means less of it. If this number is positive, then the relationship between the IV and DV is **direct (or positive)**: <u>increases in the IV increase the value of the DV</u>. <u>If the number is negative</u>, then the relationship is **inverse (or negative)**: <u>Increasing the IV decreases the value of the DV</u>.
    b. If the DV is the <u>probability</u> of something: Authors can report their findings in one of two ways.
        i. If the author states that he/she is reporting relative risk ratios (RRR), then these are changes in probability: a 2 means the probability of the DV is doubled when the IV is very high, while a .2 means the probability of the DV is reduced by four-fifths, to only 20% of what it would have been otherwise, when the DV is high. In other words, if this number is greater than 1, then the relationship between the IV and DV is **direct (or positive)**: <u>increases in the IV increase the probability of the DV</u>. <u>If the number is less than 1</u>, then the relationship is **inverse (or negative)**: <u>Increasing the IV decreases the probability of the DV.</u>
        ii. Most authors do not report RRRs. In these cases, a positive coefficient for a given IV means a higher probability of the DV and a negative number a lower probability of the DV. The coefficients are not probabilities themselves; they are changes in likelihood which do not easily translate into probabilities. All you need to know is the sign of the coefficient. If this number is positive, then the relationship between the IV and DV is **direct (or positive)**: <u>increases in the IV increase the probability of the DV</u>. <u>If the number is negative</u>, then the relationship is **inverse (or negative)**: <u>Increasing the IV decreases the probability of the DV</u>.
        iii. If the DV is the <u>duration</u> of something, then the author usually reports **hazard ratios** as coefficients.
            1. The "hazard rate" is the risk of something happening. If we are at peace, it is the risk of war. So in analyses of the duration of peace, increases in the hazard rate mean that every year the risk of war is higher. **High hazard rates mean a short duration, while low hazard rates mean a long duration.** A hazard ratio is the ratio of the hazard when the IV is high to the hazard when the IV is low.
            2. So <u>hazard ratios above 1 mean shorter durations,</u> while <u>hazard ratios below 1 mean longer durations</u>. If we are looking at the hazard of peace failing, then ratios above 1 are dangerous – you might even say "hazardous" – while ratios below 1 are reassuring. In other words, if this number is greater than 1, then the relationship between the IV and <u>duration</u> (as opposed to the hazard rate itself) is **indirect (or negative)**: <u>increases in the IV decrease the duration</u>. <u>If the number is less than 1</u>, then the relationship is **direct (or positive)**: <u>Increasing the IV increases the duration.</u>
7. Now you need to determine the relative importance of the IVs. Just because a variable is statistically significant doesn't mean that it has a large effect on the DV.
    a. Some authors include a chart with "predicted probabilities" or "predicted values" of the DV for different values of the IVs. If so, look at it to see which significant IVs really make a big difference.
    b. Of course, if the authors are reporting relative risk ratios or hazard ratios then you know exactly how important each IV is: 1.01 is only a 1% change, 2.00 is a 100% change, and 0.1 is a 900% change!
    c. If the author provides neither of these, then you won't be able to compare them under most circumstances. Raw coefficients are essentially meaningless, except for their sign.
8. (If necessary) Repeat for each "model." Some tables actually summarize the effects of four or five different combinations of independent variables on the dependent variable. There are usually good reasons for this approach, but it makes it a bit harder to interpret the data. Just proceed with one column, then after finishing it move to the next column, and so forth.
    a. Standard procedure is to put each set of IVs into a different column; IVs not included in a model then simply have a blank space on the row of that IV.
    b. When you see multiple models, look for any IVs that have significant coefficients (of the same sign, i.e. positive or negative) across all models – usually the author is trying to show you that no matter which approach he/she used, this variable always seemed to be important.

Examples (from the civil war literature):

In the first example the DV is the **likelihood** of popular rebellion onset. The IVs are Income Gini (a measure of income inequality), Education Gini (a measure of educational inequality), Xpolity (a measure of democracy), GDP per capita (a measure of prosperity), GDP per capita growth, Population Size, and Peace Years (presumably, the number of years a state has gone without experiencing a civil war).

   First look at which coefficients are significant – associated with a p value of .05 or less. The asterisks tell the story in this table – Income Gini is sometimes significant, Education Gini is usually significant, Education Gini squared is significant (indicating the relationship between educational inequality and popular rebellion risk is not liner but curved), and Population Size is significant. So we look at these four variables only.

   Since these are raw coefficients and not RRRs (you can tell because the author doesn't say they are ratios, and because some of the numbers are negative and negative likelihood/probability doesn't make any sense), we look at the sign of the coefficient to see the direction of the relationship. Since Income Gini is positive, it makes popular rebellion more likely. Since Education Gini is positive, it also makes popular rebellion more likely, but the fact that its square is significant means the relationship is non-linear. Finally, since Population Size is positive, it makes popular rebellion more likely (more people means that popular rebellions are more likely – a standard finding for all types of civil war).   So we can conclude that inequality (whether income or educational) and population are significantly correlated with the likelihood of a popular rebellion.

Table II. Logistic regression estimates of popular rebellion onset

	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)	(1.8a)	(1.8b)	(1.9a)	(1.9b)
Income Gini	3.276*		3.186†	3.403†	3.372†	3.411†	3.685†	3.076†	29.805†		
	(1.482)		(1.817)	(1.846)	(1.859)	(1.939)	(1.901)	(1.781)	(17.568)		
Income Gini^2									−30.679		
									(20.945)		
Education Gini		1.833***	2.330**	2.050*	2.089*	2.341*	2.224†			1.203	11.683*
		(.494)	(.776)	(.933)	(.914)	(1.133)	(1.138)			(1.022)	(5.458)
Education Gini^2											−9.1873*
											(4.470)
Xpolity scores				−.006	.109	.127	.113	−.106	−.167	.225	.180
				(.046)	(.245)	(.244)	(.235)	(.253)	(.244)	(.212)	(.203)
Xpolity scores^2					−.007	−.008	−.007	.005	.009	−.014	−.011
					(.014)	(.014)	(.014)	(.015)	(.014)	(.013)	(.012)
GDP per capita (ln)						.086	.053	−.253	−.215	−.054	−.004
						(.285)	(.283)	(.247)	(.241)	(.244)	(.226)
GDP per capita growth							.063	.052	.050	.039	.038
							(.044)	(.034)	(.034)	(.037)	(.036)
Population size (ln)	.216*	.265***	.265*	.270*	.271*	.266*	.259*	.204*	.202†	.214**	.193**
	(.094)	(.060)	(.106)	(.110)	(.111)	(.117)	(.108)	(.104)	(.104)	(.079)	(.075)
Peace years	.638†	.131	.449	.509	.502	.516	.554	.502	.433	.282	.154
	(.098)	(.322)	(.429)	(.480)	(.474)	(.478)	(.489)	(.430)	(.416)	(.389)	(.412)
Constant	−9.819***	−9.947***	−11.693***	−11.705***	−12.062***	−12.255***	−12.330***	−8.875***	−14.221***	−9.474***	−11.678***
	(1.842)	(1.024)	(2.199)	(2.573)	(2.694)	(3.209)	(3.048)	(2.434)	(4.406)	(1.888)	(2.263)
Wald χ^2	18.87	38.24	36.86	29.63	28.89	37.17	38.84	50.29	46.59	29.50	30.29
N	4,130	6,200	3,682	3,199	3,199	3,149	3,149	3,462	3,462	5,004	5,004
No. of popular rebellions	36	57	31	28	28	28	28	32	32	46	46

Coefficients (β) with robust standard errors in parentheses. †$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.

In the second example, the table is much larger and seems more intimidating, but we follow exactly the same steps. The DV is Civil War Onset, according to the title of the chart. Since this isn't an amount or duration, it must be a likelihood, like our first example. The independent variables are the rows (not including Constant or n). FIRC stands for Foreign-Imposed Regime Change – when a government is militarily overthrown by some foreign power.

We see that Development reduces the likelihood of civil war onset, because its coefficient is significant across all models and negative. So more developed countries are less likely to experience civil wars. As in the first example, Population increases the likelihood of war. In Model 1, we see that FIRC is dangerous, increasing the likelihood of civil war. In Models 2-5, we see the circumstances under which it is most dangerous. The other independent variable are interpreted in the same fashion.

TABLE 2   Rare Events Logit Analysis of Civil War Onset, 1920–2004

	Model 1	Model 2	Model 3	Model 4	Model 5
Development	−0.388***	−0.392***	−0.401***	−0.382***	−0.388***
	(0.0862)	(0.0869)	(0.0868)	(0.0879)	(0.0871)
Population	0.0899***	0.0896***	0.0889***	0.0920***	0.0910**
	(0.201)	(0.201)	(0.0200)	(0.0204)	(0.0197)
Lagged Civil War	−0.0872	−0.0904	−0.132	−0.0757	−0.153
	(0.239)	0.239	(0.248)	(0.237)	(0.248)
All FIRC	0.998**	–	–	–	–
	(0.407)				
FIRC/Lose War	–	2.13***	–	–	–
		(0.577)			
FIRC/No War	–	0.684	–	–	–
		(0.650)			
FIRC/Lose War/No Occupation	–	–	1.64*	–	–
			(0.758)		
FIRC/Lose War/ Occupation	–	–	3.63***	–	–
			(1.15)		
FIRC/Change Political Institutions	–	–	–	1.77***	–
				(0.551)	
FIRC/No Change Political Institutions	–	–	–	0.775	–
				(0.667)	
No FIRC/Change Political Institutions	–	–	–	0.579**	–
				(0.231)	
FIRC/Lose War, Install Democracy	–	–	–	–	3.76**
					(1.48)
FIRC/Lose War, Install Non-Democ.	–	–	–	–	1.97***
					(0.576)
Lose War	0.858*	–	–	0.642*	–
	(0.371)			(0.387)	
Lose War, no FIRC	–	0.621	–	–	0.590
		(0.521)			(0.523)
Mountains	0.190**	0.184**	0.176**	0.183**	0.183**
	(0.0666)	(0.0660)	(0.0654)	(0.0663)	(0.0659)
New State	1.55***	1.56***	1.56***	1.55***	1.57***
	(0.475)	(0.477)	(0.482)	(0.490)	(0.480)
Non-Contiguous	0.420*	0.444*	0.476*	0.405*	0.435*
	(0.243)	(0.244)	(0.246)	(0.245)	(0.249)
Anocracy	0.114	0.130	0.177	0.0784	0.148
	(0.243)	(0.243)	(0.245)	(0.253)	(0.244)
Democracy	−0.108	−0.107	−0.0962	−0.146	−0.133
	(0.252)	(0.252)	(0.254)	(0.246)	(0.255)
Instability	0.421*	0.434*	0.453*	–	0.409*
	(0.207)	(0.207)	(0.208)		(0.210)
Ethnic Fractionalization	0.884**	0.835*	0.802*	0.846**	0.902**
	(0.362)	(0.362)	(0.365)	(0.364)	(0.363)
Constant	−3.11***	−3.05***	−2.93***	−3.13***	−3.09***
	(0.721)	(0.727)	(0.720)	(0.735)	(0.723)
n	8,337	8,337	8,337	8,338	8,337

Note: *Significant at the 0.05 level; **significant at the 0.01 level; *** significant at the 0.001 level. All significance tests are one-tailed.

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Rubric for RD Research Question

Criterion	Points Possible	Points Earned/Comments
Why is the question important?	5	
What is the DV of interest?	5	
List of possible independent (explanatory or control) variables	5	
Empirical question in one of the three subfields listed	5	
Grammar/spelling/failure to use APSA citations	Up to -8	
TOTAL	**20**	

POLI 5300
Rubric for Annotated References

Each source is worth 5 points. If more than ten are provided, the scores from the top ten (those with the most points) are used.
1 point for a proper APSA citation.
1 point for it being a peer-reviewed academic article or a book from an academic press.
1 point if the author or authors actually conduct a quantitative (statistical) analysis in the article or book.
1 point for identifying the dependent variable of the study.
1 point for identifying the statistical model used.

Each clear style/grammar/spelling error (e.g. a sentence without a verb, a misspelling, or a strange formatting issue) reduces this credit by one point, up to a maximum loss of ten points.

POLI 5300
Rubric for RD Quantitative Literature Review

Element	Points Possible	Points Received and Comments
Cover page	2	
Establish your research puzzle and its importance (see Gustaffson and Hagström)	5	
Thesis about the existing research on the puzzle is provided. Remember, the thesis of a literature review isn't so much your answer to the question as it is how the literature has answered it so far.	8	
Quantitative analysis of the literature	64	For the best eight academic quantitative studies used (8 points each): the DV is established (1); the theory and how it answers the question is briefly described (1); statistical methods are specified and the most important table(s) are interpreted (4); at least one weakness of the author's approach (measurement, research design, choice of statistical method, etc) is identified (2); and the knowledge added to the field by the article is identified (1).
Source 1	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 2	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 3	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 4	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 5	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 6	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 7	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 8	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Compare the literature, suggesting paths for future researchers to follow.	7	
APSA-formatted Works Cited page	14	
Total	**100**	
Spelling/grammar/style (-1 point per mistake up to 20 maximum points lost):		

Additional revisions needed are listed at the end of your paper.

POLI 5300
Research Design Rubric

Element	Points Possible	Points Received and Comments
Cover page	1	
Abstract: research puzzle, what we have learned from previous approaches, what remains to be learned, your theory (in a few sentences), and a sentence or two about how you intend to test the theory	10	
Establish research puzzle and its importance	10	
Thesis about the <u>research</u> on that question is provided. Remember, the thesis isn't so much your answer to the question as how the literature has answered it so far.	5	
Quantitative analysis of the literature	64	For the best eight academic quantitative studies used (8 points each): the DV is established (1); the theory and how it answers the question is briefly described (1); statistical methods are specified and the most important table(s) are interpreted (4); at least one weakness of the author's approach (measurement, research design, choice of statistical method, etc) is identified (2); and the knowledge added to the field by the article is identified (1).
Source 1	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 2	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 3	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 4	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 5	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 6	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 7	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:
Source 8	(8)	DV: / Theory: / Statistics: / Weakness: / Knowledge:

Element	Points Possible	Points Received and Comments
A plausible theory, consistent with the flaws or gaps in the literature, is posited to explain the research puzzle	20	
At least two indented hypotheses are derived from the theory	10	
Basic parameters of hypothesis tests outlined: spatiotemporal domain, units of analysis, etc.	5	
The DV is conceptually defined and then operationalized into a specific measure	15	
The IVs are listed, conceptually defined, and then operationalized into specific measures. Explanatory variables are distinguished from control variables.	25	
A statistical methodology for conducting the hypothesis tests is selected and defended.	10	
The paper concludes with what you expect to find and how such findings would advance the state of knowledge about your research puzzle, as well as what value your paper would have even if it failed to falsify each null hypothesis.	10	
APSA-formatted Works Cited page	15	
Total	**200**	
Spelling/grammar/style (-1 point per mistake up to 40 maximum points lost):		

See paper for further comments.

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Research Presentation Rubric

Item	Comments	Points	Possible
Preparation and Time: Student has a presentation prepared that actually lasts 10-16 minutes. Presentation follows some logical order.			10
Quantitative Review: Student uses PowerPoint or a handout to effectively communicate the statistical information from at least one article/book.			30
Research Design: Student reviews major elements of research design (DVs, IVs, theory/hypotheses, measurement)			30
Effective communication: Student avoids reading directly from a paper or script, makes eye contact with audience, avoids nonfluencies, etc.			10
TOTAL			**80**

Other comments: