

How to Write an Empirical Social Science Paper

POL573 Quantitative Analysis III

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The final project is the most important requirement of this course. The goal is to conduct a project that can be *eventually* developed into a high-quality publishable paper. During this process, you should always have the following question in mind: *Whose mind are you trying to impact in what way?* Your contribution is judged solely based on the new knowledge you bring to the scientific community. Why should one care about your paper? What makes your paper different from the existing research? You write a paper in order to convince your (skeptical) colleagues why they should change their way of thinking after reading your paper.

I encourage you to keep working on your project after this course, and I am happy to continue to provide guidance along the way. In the past, some papers based on final projects for this course appeared in refereed journals. Here are two very recent examples:

- Bashir, Omar S. and Lim, Darren J. (2013). “Misplaced Blame: Foreign Aid and the Consequences of UN Security Council Membership.” *Journal of Conflict Resolution*, Vol. 57, No. 3, pp. 509–523.
- Becher, Michael and Donnelly, Michael. (2013). “Economic Performance, Individual Evaluations, and the Vote: Investigating the Causal Mechanism.” *Journal of Politics*, Forthcoming.

To give you a sense about how final papers for this course can eventually evolve into peer-reviewed publication, the seminar paper and poster versions of these published articles are made available at Blackboard.

Stylistic Requirements

Your final paper will be graded based on both methodological and substantive contributions to the relevant literature. In addition, the paper will be graded using the following stylistic guidelines.

- **Word processing:** The paper must be written in L^AT_EX and the bibliography should be compiled with B_IB_TE_X. If you do not know these word processing programs, consult the workshop materials that are available at <http://goo.gl/A2b1qF>
- **Abstract:** There should be an abstract of no more than 150 words.
- **Section formatting:** Each section and subsection should be numbered appropriately.
- **Tables and figures:** Tables and graphs are important tools for communicating your empirical results. Here are a few ground rules.

1. Carefully choose which results are central to your study and only use tables and figures to present these results. Once you know what results to present, then choose most effective graphical methods and table formats.
2. Tables and figures should be numbered.
3. Tables and figures should come with detailed captions so that they speak for themselves. Readers should be able to understand them without referring to the main text.
4. Create figures and tables such that readers who are unfamiliar with your research can immediately understand the results. Too many numbers and digits in a table and too many lines in a figure, for example, can confuse readers. For figures, each axis should be labeled clearly and the legends should be avoided whenever possible. For tables, do not simply copy and paste outputs from statistical software. Think carefully what are the quantities of interest and present them in an intuitive manner. Often, figures are more effective means of conveying the empirical results than tables. See the following paper for some good examples.

Johnathan P. Kastellec and Eduardo Leoni. Using graphs instead of tables to improve the presentation of empirical results in political science. *Perspectives on Politics*, 5 (4):755–771, 2007.

Writing a Scientific Paper

Good writing skill is an essential requirement for becoming a successful researcher in the social sciences. Here are the guidelines you should follow when writing an empirical research paper.

1. Do not start writing a paper until you finish all of your empirical analyses and finalize *tables and figures*. Scientific writing is different from writing a novel. You need to know the exact contents of the paper before writing it. It is also most efficient way of writing a paper because you do not need to revise it.
2. Once figures and tables are done, determine the *title* of the paper. The title should be informative and you should not choose a title that is (or is meant to be) funny and yet does not tell readers what the paper is about.
3. Next, draft an *abstract* which should concisely describe the problem and your solution to it (or the question and your answer to it) and explain why this is a novel contribution. Carefully draft each sentence in the abstract to efficiently convey all the important information about your paper. With the 150 word limit, you do not have any sentences to waste. The abstract is typically the most difficult part of paper writing. Spend a lot of time before proceeding to the main text.
4. Now, the *introduction section* of the paper can be written by simply elaborating each sentence of the abstract. Use a couple of paragraphs to expand what you wrote with one or two sentences in the abstract. The introduction should start with a brief discussion of the motivation of your paper immediately followed by a concise summary of the main contributions. After that, you can further discuss the ways in which your methods or empirical findings contribute to the relevant literature. Do not reverse the order. The description of your findings and contributions should come before explaining the existing research.

5. Do not write a “*literature review*” by simply summarizing the existing work. Instead, describe the literature by explaining how your new methods or empirical results differ from what have been already done. The literature review should therefore be another way to demonstrate your contributions. Do not ignore prior work. Your contributions can only be understood if you tell readers how your research differs from those done by others.
6. Once the introduction is written, the rest of the paper should follow naturally. Each paragraph in the introduction becomes a section of the paper where you give further details about your methods and empirical results. Use subsections to effectively navigate readers so that they do not lose the big picture. Importantly, the paper should be written in a *top-down* manner: the beginning of a section (a subsection or even a paragraph) should give the main message and the rest should elaborate it. Try to be direct and explicit while avoiding unclear and vague sentences. Be as concise as possible.
7. During the entire process, put yourself in the position of a reader who is skeptical of your results and anticipate potential criticisms of your paper. A good scientific paper is convincing. You must justify all the major decisions you made (e.g., sample selection, choice of methods, variables and their measurements, interpretation of results) and explain why your approach is superior to other alternatives or at least reasonable. It is also important to acknowledge the limitations of your approach. Finally, the paper should give all the information necessary for replication and all data and code should be posted online upon publication.

Finally, there are many books and articles explaining how to write a good scientific paper, but here is one written by a political scientist that is perhaps most relevant for this class.

Gary King. Publication, publication. *PS: Political Science and Politics*, XXXIX(1):119–125, January 2006.