

Final Project Assignment
17.871
Spring 2002

Assignment summary

You will make two oral presentations, of 15 minutes in length, and turn in a final research paper, 15–20 pages long.

Presentations

General considerations. Both presentations will be limited to fifteen minutes, followed by five minutes of response from me and others in the class. We will therefore start on time (at 5 minutes past the hour) and I will cut you off when 15 minutes have elapsed, *precisely*. Fifteen minutes go faster than you imagine. The best presentations will be those that have been practiced beforehand. Remember: you will be graded on the quality of your presentations. (Indeed, you will be graded more on the presentation itself than on whether you actually found anything interesting in your research.) To improve presentation quality and to save time, you should have handouts ready to distribute and/or have overheads ready to project. ***Make sure you have taken care of the technical aspects of the presentation before the class time begins.***

When you are not presenting, you are participating by listening and giving feedback. You must be present for all the presentation sessions.

First presentation. The first presentation should inform us of your subject, how you intend to pursue it, the data you plan to use, and any special problems you think you will encounter.

Inform us of your subject: What is the substantive issue you intend to pursue? To whom would the issue be of interest? Have others researched this area before? If so, what have they found?

How do you intend to pursue the subject: What “unit of analysis” will you be studying? (That is, will you be studying individuals, counties, countries, etc.?) Will this be a time series analysis? Cross-sectional? A combination?

Your data: What would the ideal data be to do this project? If you can’t get your ideal data, what data *can* you get your hands on? Tell us actual sources. It would also be good at this point to report descriptive statistics of your data set, graphs that show simple, basic relationships, etc.

Special problems. Perhaps there’s a crucial variable that will be difficult or impossible to measure directly, or some regression assumption will be violated. Quantitative analysis is rarely straightforward, so tell us any wrinkles you’ve encountered thus far, or anticipate encountering over the next month.

Second presentation. The second presentation should summarize the basics of your first presentation and then report your findings. The summary of the first presentation should be very brief, focusing on reminding us of the subject you are pursuing, your basic approach, and the source(s) of your data. Your findings should be reported in much the way we learned data analysis in this subject. First, present your data. Identify the variables in your analysis: how are they measured, what are their means and dispersions? Second, present the most important bivariate relationships. This may be done either with a correlation matrix or with a series of well thought-out graphs. Third, present your multivariate analysis. Draw to our attention the core results and whether they confirm or disconfirm your original conjectures. Discuss any cases that appear to be poorly described by your analysis and what might be done to correct this. Fourth, tell us what you conclude about your subject from the analysis you've done.

Research paper

The logic of exposition in your research paper should roughly parallel the second presentation. The one section you should add at the beginning of the paper that you won't want to talk too much about in the second presentation is a discussion of previous research. While you don't have to do a comprehensive search of the literature, you need to do a little library work to see if anyone has written about your topic before and (if they did) what they found. Don't worry if you've found that someone has previously done something identical to your project. Replication of others' results is an important part of normal science.

Journal articles in political science (which is the model your write-up should follow) often follow this outline:

- I. Introduction
Summarize your paper, providing the reader with a roadmap. Do not hide your conclusions. Rather, state what your question is, why it's important, the general strategy you used to answer your question, what you found, and what the implications of your findings are. Usually 2–3 pages.
- II. Literature review
Summarize past research on the topic. Sometimes this will be research on precisely topic you're writing on. Other times it will be research on a related topic. The point is to place the current research into the context of past research and the larger set of questions that research in this field has been pursuing. Usually 2–3 pages
- III. Overview of the empirical research
How do *you* propose to address the broad question that you introduce in the introduction? Usually this amounts to stating something to the effect that "in order to understand X, we need to gather data Y and test to see if Z is true." Related to this, you should identify the basic moving parts of your empirical

analysis, including the unit of analysis and the independent and dependent variables. This can usually be done in 2–3 pages.

IV. Data

Where did you get your data and how did you measure your variables? This usually takes 1–2 pages. It is also usually helpful at this point to include a table that summarizes all your variables. Usually there are three (or four) columns: (1) concept, (2) indicator, (3) coding, and (4) actual data source. (The actual number of columns may be less if, for instance, all the data come from the same data source or if there's a particularly close correspondence between concepts and indicators [i.e., measurement ambiguity isn't really a problem].)

VI. Results

A. Preliminary results (simple relationships and a first cut at multivariate analysis)

Start with the simple, straightforward analysis that is implied in Section III. Sometimes one or two simple bivariate graphs are useful to illustrate the more sophisticated multivariate analysis.

B. Sensitivity analysis and other searches for anomalies

Check to make sure that your results aren't driven by problems with data or measurement. For instance, if you believe that the result may be mostly a consequence of a single outlying observation (e.g., you've included the District of Columbia in a study of American states and you worry that DC is such an outlier that it alone is determining the results), report in the text the consequence of removing the outlying observation and re-running the analysis. Likewise, check to see if the fit is improved when you allow for non-linearities in relationships.

C. Re-estimation; further analysis

Depending on what happens in the previous step, you may iterate to a more refined analysis. Run that analysis and report those results.

The Results portion of the paper should be around 4–8 pages long.

VII. Discussion of results from a substantive perspective

In some ways, this is just a continuation of the "Results" section and can often be profitably integrated with that section. The point here is to make sure you think about your results in substantive terms. For instance, don't just report that "the coefficient of the regression of Gore thermometer on Clinton thermometer is 0.67." Rather try to see if you can gauge whether that number is "big" or "small" in substantive terms. (In the group project on this topic, the group eventually concluded that this number, when applied in a certain way, implied that Gore would have won had Clinton been as well-liked in 2000 as he had been in 1996. That's what I mean by discussing your results from a substantive perspective.) This section can add another page or two, depending if it's integrated with the previous section.

VIII. Conclusion

Summarize what you've done. In this section you can be more speculative. It is frequently the case that in the conclusion you make statements to like "based on the results in this paper, X's claims about Y are supported" or "based on the results in this paper, Z needs to be further understood." Another 1–2 pages.

The first page (after the title page) must have an abstract of no more than 250 words that summarizes your project and findings. The abstract page must contain your name and the title of your paper.

The paper should be about 20 pages long, *including text, graphs, figures, appendices, and bibliography*. There is no hard and fast page limit for the final page. Write succinctly. Edit. Hone. Eschew verbiage. Make the text flow. If there's a particularly long, involved methodological problem that you attend to, consider moving it to an appendix and only make reference to it in the body of the paper.

Read Kate Turabian's style book (*A Manual for Writers of Term Papers, Theses, and Dissertations*) before you write your final draft. In addition, look at recent editions of the *American Political Science Review* or the *American Journal of Political Science* for ideas about how tables that report regression results should be formatted. Follow this style book. In addition, there are some mechanical issues that you must attend to in writing this paper. (Indeed, you should always attend to these issues when writing for the social sciences.) If you do not follow these strictures, your paper will be returned to you for rewriting, possibly resulting in your receiving an *I* for the subject. When you turn in your final paper, you will need to include a check-list indicating that you have made sure it meets these criteria.

Double-space everything, except footnotes and tables.

Use footnotes, not endnotes.

Use the author-date form of citation. (Use footnotes only for brief asides that would interrupt the flow of the text and for complicated citations that defy the author-date form.) For instance, in the text: "Stewart (1993) discovered that members of Congress who were the most loyal to their party got the best committee assignments." Then include the full citation of Stewart (1993) in the citation list at the end of the paper.

Properly number the pages.

Don't use fancy fonts. Make sure the font size is no smaller than 10pt and no larger than 12pt. **Never** use bold face.

Use a constant 1" margin on each page.

Tables and figures should be self-explanatory. If you cannot figure out how to embed tables and figures in your paper such that they stay with the text that describes them and do not get cut in half by page breaks, put the tables and figures at the end of the paper.¹

Staple the paper in the upper left-hand corner. Don't use a report cover.

Also, please adhere to the following conventions of writing in political science:

Write in the active voice.

Make sure all your tables and figures are numbered and titled. Make sure that all of your display text is self-explanatory, but also make sure that the main text of the paper explains the most important elements of the tables and figures.

What you will hand in

According to the regulations of the faculty, all final papers are due on the last day of this class. That means by 5pm. Any extensions must be approved beforehand. Unlike previous years, you may e-mail the papers to me, so long as they are in the following formats: Word [sigh], WordPerfect, pdf.

To receive a grade in this class you must produce the following:

An electronic version of the paper, e-mailed to me by 5:00pm on the last day of this class or *two* copies of your paper, handed in at my office by 5pm on the last day of this class. I will grade one of the papers and return it to you, if you wish. I will keep the second copy (if you turn in a physical copy), as an example to people who take the class in the future. Make sure you have another copy for yourself.

Completed checklist form.

¹Most of you will write your paper using Microsoft Word. Keep in mind that MS Word was developed to produce very simple, unsophisticated papers. It was not developed to write academic papers and, in fact, is terrible for writing academic papers. If you are serious about an academic career, I'd recommend you get a serious writing program (like WordPerfect or even LaTeX) and learn how to use it. The main problems with Word include the difficulty in making formatting changes, the fact that many of the defaults (like with spacing, justification, and margins) are non-standard, and that footnotes are regularly not printed on the proper page. Other problems abound. In any event, failure to abide by the formatting instructions because you can't figure out how to do something in Word (or any other word processing package) is an insufficient excuse.

If you ever want to see your paper alive again, bring by my office a self-addressed envelope capable of holding our paper. (If the envelope is addressed to go off campus, I will happily supply the postage.) I will discard all graded papers that are not accompanied by a self-addressed envelope.

An extra copy of your abstract, which I will keep. (Again, only if you hand in a physical paper.)

Your data and the STATA code capable of reproducing the results you report. See below for further instructions about this.

If any of these elements is missing, you will receive an *I*.

How to turn in your data

For the benefit of future students in 17.871, to assist me in giving you feedback, and in the interest of scientific replication, you are required to turn in the data you use to produce the results in your paper, plus the computer code used to generate the results. Here's what you have to produce.

Data. *If you gather the data yourself*, you must make available to me the computer file of that data. You must also make available a "codebook" that identifies the variables: (1) variable name, (2) data source, (3) column location of the variable in the file, and (4) any coding rules you used to create the variable. *If you used a data set produced by someone else*, such as an ICPSR data set, you must tell me the full citation of the data set. If it is not an ICPSR data set, and it is not available through the MIT-Harvard Data Center, we will treat it like you gathered the data yourself.

STATA code. You must save the STATA code from the ".do files" that produced the results you report in your paper. Give the code a file name that corresponds with the results reported in your paper (e.g., table1.do, figure2.do).

You will then copy the data and the STATA code into your Athena ~/Public directory for me and Steve to retrieve. Also, send Steve and me e-mail (millman@mit.edu, cstewart@mit.edu) describing which files correspond with your project, along with a little description of each.

17.871 Final Paper Checklist

This check-list must accompany your paper if you turn in a physical copy. If you e-mail your paper to me, you must include a declaration in the e-mail message that you have followed all of these guidelines, point-by-point.

- Double-spaced, except footnotes and tables.
- Footnotes used, not endnotes
- Author-date citation form used
- Page numbers properly used
- Proper font.
 - Either 10pt or 12pt.
 - Italics* or underline used for emphasis.
 - Bold is never used.**
 - Courier or Times/Times New Roman typeface.
- Constant 1" margin on each page
- Paper stapled in the upper left-hand corner. No report covers.
- Coefficients and other statistics in tables (like regression coefficients and standard errors) have no more than 3 significant digits.
 - No STATA output dumped into the text of the paper.