Statistical Models: Theory and Practice

by DA Freedman

Instructions for the Project 25 September 2007

Students in the course do a project. This involves choosing a target paper in one of several journals, and then writing an analysis of the target paper. The project is a lot of work, and it goes better as a group effort. Students should divide themselves up into groups (e.g., 3 to 6 members) and work cooperatively. The possible journals are

APSR	American Political Science Review
AJPS	American Journal of Political Science
AJS	American Journal of Sociology
ASR	American Sociological Review
QJE	Quarterly Journal of Economics

These are among the leading empirical journals in the social sciences today. The idea is to browse through a year or two of a journal, and pick the best—clearest, most interesting, most convincing—paper. The paper must use data to make its point: this is a statistics course. You are looking for good papers. You are not looking for bad papers. Bad papers are easy to find. Good papers are hard to find. You are not looking for papers that use "sophisticated" techniques: sophistication of technique is not well correlated with scientific quality. You are looking for the latter, not the former. It may be OK to use a journal that's not on the list, but you need to ask. If you don't ask, you will probably have start over with another paper.

Choosing the paper is hard work. That you can read the title and the abstract is no guarantee of being able to read the paper itself. It is your responsibility to read and understand the paper, and explain it to me. If, e.g., the paper uses lots of unfamiliar statistical technique or econometric jargon, that's going to be a problem. If you don't know whether you understand—not an uncommon situation in math classes—that could be a problem too.

The political science journals are the safest, QJE the most dangerous. On the other hand, QJE has genuinely interesting papers. Ordinary least squares, generalized least squares, and instrumental variables are all within scope. So are probit, logit, and linear probability models. (Instrumental variables are covered in chapter 8; if the target paper uses that technique, you may have to read parts of chapter 8 on your own.)

Step 1. Form groups and choose your journal. Deliverables: Names of group members and name of journal. Date range that will be browsed. Name and e-mail address for contact person. Time: one week.

Step 2. Browse the journal and choose your paper. Deliverable: a high-quality copy of the chosen paper—single-sided, full-size. (I have to read it and my eyes are bad.) Choosing the paper is a critical step. Do not leave it for the last minute. Do not choose a paper on the basis of the title or abstract. Do not choose a paper because you can skim it and it looks interesting. Do not choose a paper because you hope I will explain the technique to you: your job is to explain the paper to me. The best way to go is to get a short list of half a dozen papers, read them over, and then make the final cut. Time: two weeks.

Step 3. Summarize your paper and outline your thoughts about it. Deliverable: a two-page summary. All papers must be typeset in 12 point type, single-sided, double-spaced. Time: one week.

What question is the paper asking? What data does it use to answer the question? What assumptions does it make to get from the data to the answer? What do you think of the assumptions? of the statistical procedures used? In your two-page summary, you probably won't answer all these questions in detail. By the end of the project, you are expected to address all of them.

I will try to comment on your work as it comes in. I will also decide whether you picked a paper that is readable, or that you have a fighting chance to read. If not, you may be asked to start over, using one of the papers chosen by another group. If you have picked a paper that is relatively weak, you may also be asked to start over with another paper.

Step 4. Write the first draft of your paper. Deliverable: the draft. The usual length is 10 to 20 pages, but there is no hard-and-fast limit. The draft should respond to comments on the summary (step 3). Time: two weeks. Reminder: single-side, double-spaced, 12-point type.

I will try to comment on the draft. There is a temptation to parrot little phrases and sentences, without understanding them, from the target paper or other papers. Resist the temptation. I am likely to notice. Tell your story in your own words. If you don't understand something, own up. Don't bluff. I will probably invite groups to come in for short discussions of their draft papers.

Step 5. Write the final draft of your paper. Deliverable: the paper. The final draft should respond to comments (step 4). Time: two weeks. Reminder: single-side, double-spaced, 12-point type.

Step 6. I may choose a few groups to present their work. This means a 45 minute talk, with transparencies or equivalent, and a handout. The handout should have the key points and tables or figures in the paper, and your key points: the recommended length is 2–4 pages. Transparencies need to be typeset. Minimum type size is 24 points. If you cover 20 transparencies in 45 minutes, you're going at a fast clip. Projecting from a laptop is fine, but have transparencies as a backup. The audience should have read the target paper before your talk, but it is unwise to depend on this.

Due Dates in Fall 2007

1)	Oct 2	Names of group members; email contact; journal and dates
2)	Oct 18	Copy of target paper
3)	Oct 25	Summary of your proposed paper
4)	Nov 8	Draft of your paper
5)	Nov 20	Final version of your paper

Reminder. All deliverables to be single-sided high-quality copy
Your papers to be single-sided, 12-point type, double-spaced