36-303: Sampling, Surveys and Society
Notes on Team Working Assignments
Mon Feb 27 , 2012

Here is an updated schedule of Team Project Assignments, up through Spring Break (and just beyond). I will make "turnitin" links on blackboard for all assignments (each assignment should be a single file), unless otherwise noted below.

So far...

I.0 Teams Formed...

I.1 Propose Two Topics...

I.2 Revise proposals...

I.3 Choose Topic (Thu Feb 16). Revised items A.–G.

Team Working Agreements (Thur Feb 23) [see separate handout – online at `http://www.stat.cmu.edu/~brian/303`]

Upcoming...

The remaining Team Project Assignments will more or less follow the "designing a sample survey" outline from the beginning of the semester. *DATES AND DETAILS HAVE CHANGED; PLEASE READ BELOW.*

II.4. Sampling Scheme & Question Design *(Fri Mar 2)*

K. SAMPLING SCHEME: Decide on a sampling scheme (e.g., SRS, Stratified random sample, etc.) and explain why you chose it.

Notes: Every team should decide whether (a) or (b) below fits them better and answer following the directions for that choice:

(a) **Any project with a clear sampling frame** (a physical list [on paper, in a book, in a computer file, etc.] of individual units—people, records, etc.—in the population) should choose either:

- *SRS without replacement:* take one sample from the whole frame; or
- *Stratified SRS without replacement:* divide up the population into a small number of groups or strata (e.g. Freshmen, Sophomores, Juniors, Seniors) and then take a separate SRS in each group (stratum).

If you are concerned that the responses to your survey questions may differ among different groups of the population, then a stratified sample makes sense, and can reduce your sample size. If all groups in the population are going to respond in the same way, then a stratified SRS would just be extra work that won't reduce your sample size (so choose a plain SRS without replacement). *(Write at least one paragraph justifying your choice.)*

(b) **If you do not have an actual, physical list** (on paper, in a book, in a computer file, etc.) of individual units in your population, then you do not have the means to do either kind of SRS above. This typically happens if your units are physical objects like houses, buses, locations, etc. Often the observations you take will depend on time of day and/or day of week as well. In this case you should write out a careful plan for sampling units from your population. This may involve random or planned sampling of units in the population, days of the week, times of day, etc. *(A sufficient plan will take a page or more to write, and may include text, tables, etc., to make clear what you are planning, and to explain how you plan minimizes coverage error.)*

L. QUESTIONNAIRE OR OBSERVATIONAL PROTOCOL: Write a questionnaire with 20–30 questions. Up to approximately 1/3 of these can be background or demographic questions and the rest should be directly related to the research questions you will try to answer with your survey.

NOTE: If your survey involves observations on units (buses, cars, locations, etc.) instead of asking people questions, then instead you should carefully describe your *observation protocol*. That is, list 20–30 things you will always look for when observing each unit in your survey.

(This should take a page or more to do well.)

M. SAMPLE SIZE: Give some idea of the sample size you will require and how you arrived at this number (talk about the margin of error for inferences you want to make):

- Choose one important question in from your questionnaire or observational protocol. It can be a yes/no question or a quantitative response like age, distance, an amount of money (a fee or a charge for example).
- Choose a margin of error (MOE) that makes sense for that question and calculate the size of an SRS without replacement needed to achieve that MOE. *NOTE: A part of your grade here will be making the MOE as small as possible without making your sample size unreasonably large, so you will want to try several different MOEs.*

  I want every team to do this calculation for a plain SRS without replacement—even if you will not be using this exact method in your survey. We will discuss how to modify your sample size calculation to fit your your sampling scheme in part K. above later in the course.

(Part M. will take 1/2 page or more depending on how many MOE's you show, to justify that you have chosen a small MOE that doesn't make your sample size unreasonably large.)

II.5. Pretest & Revise Questions *(Thu Mar 8)*

N. Pretest of a revised version of your questionnaire (or observation protocol) on a group of possible respondents/units.

O. Report on the specification of and results from the pretest, and any redesign of the questionnaire (or observation protocol) that may be required.

(Please include both your old and revise questionnaire/protocol, and write a couple of paragraphs describing how many respondents/units you used in the pretest, how similar they were to units in the population, and the changes you made in the survey based on this pretest.)

IRB form *(Thu Mar 8)*

If your project involves human respondents:

- Turn in a draft informed consent form. This should be about one paragraph long, and should cover all the informed consent issues raised in Groves, Table 11.4 (see lectures, week 04 of class).
- If you have not already done so, fill out the IRB form posted online at `http://www.stat.cmu.edu/~brian/303`. You do not need to include any of the attachments.

If your project does not involve human respondents you do not have to do this.

Peer Evaluation *(Thu Mar 8)*

Please fill out and submit, in email, peer evaluations for your group. For example, if you have a five-person group, each person should submit 4 evaluation sheets: one for each other person in your group (for a total of 20 sheets from your group!). Peer evaluation sheets are available on-line at `http://www.stat.cmu.edu/~brian/303`.

You will be graded *both* on submitting a full set of peer evaluations for your group *and* what other members of your group say about you in their peer evaluations of you.

Attach all your evaluations to one email, and send to brian@stat.cmu.edu, with 36303 in the subject line. Each student should submit only one email to me.

II.6 Project Plan *(Tue Mar 20)*

- Final, full project proposal (items A-M on the "designing a sample survey" handout, except don't include the IRB form [item I]).
  - This should be easy: copy and update the latest thing you have done for each of the items A-M up to now into a single electronic file to submit on blackboard. for each team.
  - From this proposal, anyone outside our class should be able to read and understand completely what you are proposing to do.