

Math 5060: Exploratory Data Analysis

Guidelines for writing and delivering reports

An essential element of being a good statistician -- or any professional -- is the ability to communicate effectively, both orally and in writing. The right solution is useless if it cannot be communicated to the client!

Oral presentations are useful for generating discussion and feedback, particularly for interim results. Written reports often are required in a business environment to finalize a project and to communicate results and action items. Personally, I find it easier to prepare my oral presentation from my written report. Guidelines for preparing both follow.

In this class you will present the results from analyzing a data set using tools you have learned, both orally and with a written report.

Guidelines for written report

A. Prepare an outline.

1. Executive summary (1 paragraph) (or abstract, if technical paper)
2. Introduction: Objectives and general background (not a book!)
3. Approach to project
4. Results
5. Conclusions, further work, action items, recommendations
6. Bibliography (if necessary)

Note: Executive summary, introduction, and conclusions should be able to stand on their own. Some people will read only these sections, so they need to be especially clear.

B. Write the report.

1. Start with your name, position, and project title.
2. Use clear, simple English, and avoid long (20-25 words) sentences.
3. To get started with your draft, write as if you are talking to someone directly from your outline.
4. Plan to revise your draft -- sometimes several versions are necessary.
5. Be careful not to offend anyone.
6. Leave technical details to an appendix.

C. Revise.

1. To find the right words, consult a thesaurus.
2. *Check spelling!*
3. Ask someone to read it over, for content, spelling, and (especially) grammar.
4. Consider judicious, not unnecessary, use of special fonts and punctuation.
5. Set aside your draft for 24 hours. Upon re-reading it, ask yourself:
 - Is it clear?
 - Does it read smoothly?
 - Is it unnecessarily wordy or too succinct?
 - Have you confirmed your numerical results? (It is embarrassing when clients find mistakes!)

D. Check graphs, tables, displays.

1. Color is nice --- if it can be reproduced easily.

2. Make clear, self-explanatory title, legends, axis labels.
3. Number sequentially for reference in text (Table 1, Table 2, ..., Figure 1, Figure 2, ...)
4. State all units of measurement.
5. Use only as many significant digits as can be believed.
6. Consult some good sources on visual displays (e.g., Wainer, Tufte).

Guidelines for oral presentations

See "Preparing Statistical Papers" (The American Statistician, May 1983, Vol. 37, No. 2, pp.106-110). This article was prepared specifically for presenting 15-minute contributed papers but many of the suggestions apply to presentations of all types, including those you will make for this class.

- A. Organize the material to be presented.
 1. Prepare an outline!
 2. General sections:
 - Introduction (statement of problem)
 - Background (sources of data, etc. Keep it brief.)
 - Approaches to problem
 - Results (key points you want them to remember)
 - Conclusions/summary, further work.
 3. Be aware of your time limit when preparing material.
- B. Prepare presentation.
 1. Write or type legibly --- and check spelling
 2. Use simple fonts and avoid extraneous icons (can be distracting).
 3. Offer no more than 4-5 key points on a page (subpoints OK).
 4. Size of font: Put page on the floor; you should be able to read it from a standing position.
 5. Avoid complicated tables! Use graphical displays wherever possible.
- C. Prepare handouts (optional but often useful)
 1. Include your name, title of presentation, statement of problem, summary of results, key figures
 2. Length: KK's rule of thumb: no more than 1 sheet of paper (unless the talk is long)
- D. Oral presentation.
 1. Rehearse!
 - Rehearse at least once, more often if possible
 - Ideally, rehearse with a colleague -- but anyone will do
 - Ask for constructive criticism and check timing
 2. Check the screen to be sure your visual displays are clear, focused, and centered properly.
 3. Use a pen, rather than a finger, as a pointer. (Your hand will shake visibly if you are nervous.)
 4. Don't be nervous; rehearsing will give you confidence.
 5. Allow time for questions. Listen carefully to each one; try to answer, or explain why you cannot answer at this time.