

How to write a statistical report

There are many different ways to write a good statistical report (and even more ways to write bad ones). However, here some things which may be good to think about when you write one, even if you don't necessarily follow all the advice.

Decide who you are writing for: It very seldom is for someone who already knows what the problem is about or everything about the area studied. To explain this well is crucial. In this course, don't write for the teacher, but for someone at the same level as yourself, who is interested but knows little about statistics or your problem.

Usually, *the shorter the better:* Only include what is really relevant, but still try to explain that clearly and fully. Only include indispensable graphs and tables. In tables, only enter numbers which are really informative. Don't use too many decimal digits.

Figures and tables should be self-contained: Figure and table captions should be as short as possible, but still make it possible to understand what is shown without reading the text. Usually figures and tables should be numbered. They should only be included if they are mentioned somewhere in the report.

In addition to formal abstracts and summaries it is usually good to have (very) short *informal summaries/introductions* at the start of chapters, sections and subsections.

Do not jump back and forth between different topics: once you have started on a subject, finish it off.

Now a list of sections which often are good to include in a report:

Abstract: A brief summary of the report and the conclusions. The aim is to make the reader understand what the report is all about. Use ordinary, nonstatistical language.

List of contents: Only if needed.

Introduction: What is the problem? What is the structure of the report? Use ordinary, nonstatistical language.

Aim: A short and precise description of the goal of the report.

Data: What are the data? How were they obtained?

Methods: A systematic account of which methods you have used and why they were chosen. Don't include reviews of textbook material, it is enough to give precise references.

Results: What came out of the analysis.

Conclusions and discussion: A summary of the main things which have been learned in earlier parts of the report and what it all means. Don't include inessential things. Perhaps discuss to what extent results can be trusted. Perhaps also include a discussion of relevant results from other sources, of course with references. Perhaps discuss what could have been achieved if you had had more time. Use ordinary, nonstatistical language as much as possible.

List of references: Is important. Only include papers which are cited in the report. Give full information using a consistent format.

Abstract: Is sometimes useful. In this course it could be a place to write down things

which don't really belong to the report but which makes it easier for you yourself to remember what you have learnt during the work with the report.

Project reports for this course should always have *a first page with the title of the project, the name and number of the group, printed names and signatures of all authors, and the date the report was handed in.* The pages of the report should be numbered. Reports should be less than 8 pages long. By signing you attest that you yourself and all the other authors have made reasonable contributions to the report and that all have been through all parts of the report.

This is partially based on notes by L.J. Nielsen and M. W. Andersen, DTU-IMM.

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