

Statistical Consultation Unit

Statistical Consultation Unit - Guidelines

A02-01

The Statistical Consultation Unit (SCU) in the Department of Mathematical Statistics and Actuarial Science offers a consultation service to researchers of the University of the Free State. The SCU can contribute throughout the research process, from the planning of the research project, through the analysis of research data, up to the publication of the findings.

Planning of studies

It is often important to discuss a research project with a statistician early in the planning of the project. This early involvement not only ensures that the data to be collected can be analysed, but the statistician can also give valuable inputs regarding research design and sampling.

Questionnaires

If questionnaires are used for data collection, we can give advice on the design of the questionnaires and the capturing of data. The final questionnaire should be submitted to us for review before the start of data collection. Best practice is to use a modern questionnaire tool (e.g. Microsoft Forms) to capture the data, even if the data is originally captured on paper, to ensure consistent data entry in the correct layout, and eliminating the need for any coding (an outdated practice).

Data collection and entry

Whenever possible, data should be provided electronically (e.g. Excel file). Please consult us on the format of data files. We accept any file format; it is the neatness of the data layout that has the most impact on turnaround time. Clean data arranged in long flat sheet format is ideal.

Note that we do not assist with data capture nor data cleaning. We can provide summary tables to assist with the cleaning process though, if needed.

Data Analysis

After data errors have been identified and, if possible, corrected, data analysis usually starts with descriptive statistics. When the research is done towards a post-graduate qualification, the student will normally be expected to provide descriptive statistics and graphical representations of the data, in consultation with staff of the SCU.

Advanced analyses, depending on the nature of the project, will often be done by staff of the SCU. A copy of the study protocol, as well as a written list of analysis requests will give the statistician a clear picture of the scope of the project. As the analysis proceeds, new questions can arise. Therefore, the analysis should be conducted with much interaction between the researcher and the statistician.

Prioritising of projects

Projects are handled as they come in. It is sometimes difficult to estimate the time needed for an analysis, since a seemingly simple data set can require complicated analyses. The researcher should discuss the time schedule with the statistician. Analyses should not be requested at the last minute (for example, shortly before the abstract deadline of a conference).

In particular, postgraduate students and their supervisor should keep in mind that requests for assistance should be made well before the deadlines for the examination of theses and dissertations.

Co-authorship

If the statistician has made a significant *intellectual* contribution to the planning, analysis, or publication of the research project, then co-authorship of a publication or presentation would be indicated. In this case, the statistician actively participates in the writing of the publication or presentation. A final manuscript should be submitted to all co-authors before the article is submitted for publication or the abstract is submitted for a conference.

If any publications (including theses and dissertations) emanate from the project, whether the statistician is co-author or not, the SCU would like to know about it so that we can add this information to the project file.

Research for study purposes

If research is done towards a qualification (e.g. Masters or PhD) the study leader should attend at least the initial discussion between the SCU and the student. In this way, clarity and agreement can be obtained between all parties about everyone's responsibilities and contribution to the project, and the research methodology can be discussed. The contribution of the SCU must receive the necessary recognition in the thesis or dissertation.