National Centre for Research Methods

Producing Automated Outputs

Video Transcript

Slide 1	Producing Automated Outputs. Presenting statistical results is a key part of undertaking quantitative social science research. You will want to think carefully about how you present the findings of your study in order to answer your research question, this will generally involve making tables and graphs to effectively summarise your statistical results.
Slide 2	A naïve approach to producing tables will be to cut and paste results from your statistical software into a word processor and then attempt to reorganise or format them into tables. This practice is perilous. There is a high probably that at some point you will copy the wrong number, paste the wrong number, accidently round up incorrectly or place the number in the incorrect cell. Even the most assiduous researcher is likely to make an error when working in this way. Statistical software such as Stata or R provide you with the ability to automatically produce tables which can be exported in your chosen format, such as Word or Latex. Automating the production of statistical outputs reduces the opportunity for human error. You can also easily update tables as you develop your work. Automation also promotes reproducibility as you can provide an unbroken paper trail between producing a statistical results and presenting these results. If those are not already good enough reasons, automation will also save you a lot of time. It is true that getting to grips with commands to automatically output results does take a little time and effort, however after this investment is made you will save a great deal of time throughout your career by producing tables efficiently.
Slide 3	Automation is a key element of developing an effective data analysis workflow. The data analysis workflow describes the entire process of data analysis from planning your analysis, undertaking statistical analysis and outputting your results. In addition to developing skills in producing automated outputs, your time would also be well spend in thinking about how you plan, organise and conduct your entire workflow. The key text introducing the workflow is J. Scott Long's Workflow of data analysis using Stata. This is a must read for Masters and PhD students who want to develop specialist skills in quantitative data analysis. Even though this book is focussed on

	Stata, I would still recommend it to students using other software as the principles are universal.
Slide 4	Commands to produce automated outputs will allow you to specify the format and appearance of your tables. As well as thinking about what information you need to present to answer your research question, it is also important to carefully consider how you present statistical information in tables. A general piece of guidance is to consider your table from the reader's perspective. Whilst you will be very familiar with what it is you are showing, a reader is less engaged in your work. You need to make clear what each element in the table is. All elements of the table should be clearly labelled, you should not leave anything to guess work. Tables should have titles and often notes are useful to provide any necessary additional information. Don't use variable names in your tables, use easily readable descriptors. Consider the degree of precision that is required in your results, usually two degrees of freedom is fine. You should also take the time to reflect on whether you have given the reader all the information required to understand the results. And at the same time you should ensure you are not presenting superfluous information.
Slide 5	Overall presenting our research findings is a key part of the research process. Making tables doesn't have to be time consuming, stressful or error prone. A little outlay of time to develop the skills to produce automated outputs of statistical results will pay great dividends.