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Guide to SPSS tutorials for Survey Analysis Workshop

I am no longer uploading SPSS tutorials to, or maintaining them on, the Academia.edu site. All following hyperlinks links are to materials on my own site **Journeys in Survey Research**.

The SPSS tutorials are all in my **Survey Analysis Workshop (SPSS)** course.

The tutorials and exercises are arranged in four main blocks, following the usual research sequence of data capture, data processing and data analysis, with occasional (cynical, wise and experienced) comments thrown in from time to time on problem formulation, research design and survey practice as well as on how SPSS works (or sometimes not!).

All exercises and examples relate to SPSS/PASW 18 or (if written after June 2011) SPSS 19, but they all work with SPSS 15 (and probably also SPSS 11).   Some earlier material (eg my 2006 Old Dog, Old Tricks paper and slide-shows) uses SPSS 11. Apart from minor differences in syntax, only the screenshots are different.

There's a pencil and paper exercise for you to complete at the beginning, but after that, all tutorials and exercises use actual data from real (major) surveys.

Files in *.doc format were set in 11-point Arial and optimised for printing on European A4 sheet size (297 x 210 mm). Most of them have now been converted to pdf format. They are legible even if printed two pages to a sheet. As of June 2011 I am using Word 2007 which can save files in genuine *.pdf format with fully functioning hyperlinks. These retain all original page formatting and are much quicker to display. They will gradually replace files in *.doc format.

See following pages for:

Summary Guide to SPSS Tutorials displays contents of and links to the four main sections of the course and two groups of support materials.

Detailed guide to SPSS tutorials lists the full contents (with hyperlinks) of all the main menus. There are more than 450 pages of downloadable tutorials and supporting materials.

John Hall   31 March 2013

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Guide to SPSS tutorials

Summary Guide to SPSS Tutorials

Data sets and files used in tutorials and exercises

This a collection of raw data, SPSS syntax and SPSS saved files for you to download as and when needed and store on your own computer or on a CD. Facsimile questionnaires are not included here, but extracts and links are provided in tutorials as and when necessary.

Statistics notes to accompany course

These notes were originally written by Jim Ring, expressly for students (mainly, but not exclusively, in the social sciences) who found computers and statistics daunting: they will also be helpful for those teaching or advising such students. They are not intended to replace recommended textbooks, and should be used in conjunction with the explanations included in SPSS **help**. They were written long before the appearance of the original and much sought-after **SPSS Guide to Data Analysis** (Norusis, 1987 -1990, for SPSS-X 3 and 4). Later editions relating to SPSS13 onwards for Windows make heavy use of the GUI and are less helpful for beginners using syntax.

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Detailed guide to SPSS tutorials

Block 1: From questionnaire to SPSS saved file

All tutorials and exercises on this page are now in **pdf** format and will display more or less immediately. All raw data, SPSS saved files and key syntax files can be found on data sets and documents, but you'll learn a lot more if you do all the exercises yourself instead of copying them.

1.1: The language of survey analysis

1.2: How do data relate to questionnaires?

These days, few users are familiar with ASCII files (the card-image format of many older survey data sets) but they are familiar with spreadsheets.. For the early part of the course I am therefore working on tutorials and exercises using Excel spreadsheets as an alternative to ASCII files for raw data.input to SPSS. from the pre-course questionnaire. The following (draft only) tutorials replicate exercises 1.2.1 and 1.2.2 above, and contain hyperlinks to sample Excel files on the data sets and documents page.

1.3: Reading raw data into SPSS

1.4: Completing your data dictionary

1.5: Utilities

There are various ways of using SPSS to check the content and structure of your data files and the properties of variables. Some are available in both the GUI and syntax, some in syntax only, some in GUI only. Some produce output, some don't. I'll be looking at GUI facilities such as: Utilities > Variables and Data > Define Variable Properties[1]

1.5.1 Tutorial: Checking SPSS (saved) data files (in preparation, March 2013)
1.5.2 Exercise: Checking SPSS (saved) data files (in preparation, March 2013)

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[1]   Full explanation on: [Help](#) > [Core System](#) > [Data preparation](#) > [Defining Variable Properties](#)

Block 2: Analysing one variable

2.1   Nominal and ordinal variables

These tutorials and exercises use data from the pre-course questionnaire

These tutorials and exercises use data from the British Social Attitudes surveys

2.2   Interval scale variables

This tutorial and exericise uses data from the precourse questionnaire

The following tutorials and exercises use data from the British Social Attitudes surveys

2.3   Data transformations

Selecting **variables** for analysis, changing the **names** of variables, changing the **values** of variables. Creating **new variables** from existing ones. Selecting **cases** for analysis as a transition from analysing one variable to analysing two or more variables. All links below are to files which are still drafts.

details of coverage and contents of each of the entries below.

2.3.1.1 Data transformations (Tutorial introduction)

2.3.1.2 Exercise to rename variables (this is for the 1989 BSA data: a new one is being prepared for 1986)

2.3.1.3 Conditional frequencies exercise

2.3.1.4 Specimen answers for exercise 2.3.1.3 (Conditional frequencies)
This is the final draft of a very extended and detailed exercise: it's quite long (26 pp) but manageable. It uses data from the 1986 British Social Attitudes survey as an exemplar in preparation for moving from
analysing one variable to analysing two or more variables.

The following are in preparation

2.3.1.5 Conditional frequencies homework
repeating exercise 2.3.1.3 on the same variables from the 1989 British Social Attitudes survey.

2.3.1.6. Specimen answers for conditional frequencies homework
Temporarily withdrawn for major revision and resequencing:

2.3.1.2 Exercise for data transformations
2.3.1.3 Specimen answer for data transformation exercise
2.3.1.4 Conditional frequencies tutorial
2.3.1.6 Specimen answer for conditional frequencies exercise

Block 3: Analysing two variables (and sometimes three)

A number of files for Block 3 are still in their original 1990 or 1991 format (ie WordStar 4, VMS, EDT and with syntax for interactive SPSS-X 4 on a Vax cluster: all the output is in lineprinter format) It's interesting to see how the syntax and output formats have changed. Some sample output is from SPSS -X 4 on the Vax mainframe and all jobs need re-running with SPSS 18. This is very time-consuming, but I'll get them converted and uploaded as quickly as I can. The numbering system for the files below is subject to change, but the numbers in the downloaded document titles may be different. Don't worry: the links are to the correct files.

3.1:   Two variables (CROSSTABS)

Joint frequency distributions of two variables displayed in contingency tables. Dependent and independent variables. Rules for percentaging. (**CROSSTABS** var1 **BY** var2)

3.1.1 Introduction to tabulation
        Recommended reading

3.1.2 Analysing two variables
        Preliminary reading: progression from frequency counts via
        conditional frequency counts to joint frequency counts [contingency tables]

3.1.3 Tutorial - Contingency tables from SPSS
        Tabulation of two variables.
         Introduction to the **CROSSTABS** command. The SPSS command **CROSSTABS**
        creates 2-way contingency tables for two variables, and nested sub-tables when
        controlling for one or more test variables. It also provides percentages based on row,
        column and global totals, a range of measuresof statistical (non-) association and various
        controls over table content and format.

The following materials are in preparation.

3.1.4 Exercise for contingency tables
3.1.5 Specimen answer for contingency tables exercise

3.2   Three variables

Introducing a third variable. Controlling for test variables. Elaboration.
(**CROSSTABS** var1 **BY** var2 **BY** var3)

The following materials are in preparation.

3.2.1 Tutorial - Elaboration
3.2.2 Exercise for elaboration
3.2.3 Specimen answer for elaboration exercise

3.3:   Multiple response

3.3 Multiple response [Header page]
3.3.1 Analysing multiple response with SPSS - an introduction

Many questions permit more than one answer.(eg tick as many as apply). This document explains different practices in coding such questions and how the data can be analysed using SPSS command **MULT RESPONSE** to analyse the data.

3.3.2a First exercise in multiple response [SPSS 15]
3.3.2b First exercise in multiple response [SPSS 19]   [in preparation]

Worked example from the pre-course self-completion questionnaire analysing the multiple response question on previous training in, or experience of ,typing, word-processing, social statistics or other computing.   Follows on from previous exercises in Block 1 sections 1.3 and 1.4 (checking and coding data to a transfer sheet, typing data into a raw data file, reading the data into SPSS and completing the data dictionary. The cumulative data set is contained in the SPSS saved file class.sav).

3.3.3 Multiple response questions in the 1986 British Social Attitudes survey

Note giving examples of multiple response questions in the 1986 British Social Attitudes survey and the different ways in which they have been coded and entered in the raw data. See also the sample data to get an idea of the content and layout (5 cases extracted).

Beta versions [pdf] of the following fully worked through tutorials are now available.

3.3.3.1 Analysing multiple response exercise 1 - One field per code
Deals with a question on qualifications obtained by education and/or training. There is a list of 15 qualifications (coded from 01 to 15) each of which has been allocated its own fixed 2-column field: the tutorial demonstrates how to read in the raw data, specify a group variable for qualifications obtained and produce a grouped frequency table.

3.3.3.2   Analysing multiple response exercise 2 - More values than fields
Deals with a question on whether the respondent is prejudiced against people of other races and, if so, which races. There are 13 possible code values, but only 3 fields allocated.

The following are in preparation:

3.3.3.3 Analysing multiple response exercise 3 - More replies than values
Using a question about welfare benefits received, this exercise demonstrates how to handle a question in which the same code values 1 - 6 are repeated within a set of 12 responses to the same question (but in different fields). This involves recoding the second set of values, but needs great care whn dealing with missing values.

3.3.3.4 Analysing multiple response 4 - Dichotomous mode
Sets of questions with only two response categories (Yes, No) can be analysed as a block by treating them as multiple response questions. Indeed, any variable can be dichotomised and thus treated. The example asks whether the respondent has ever done any of a list actions involving a trade union (each item "Yes" or "No") and the exercise demonstrates how to define a dichotomous group variable and then tabulate it.

Explanation of multiple response questions, examples from real surveys, and exercises in analysis using SPSS.

3.3   Multiple response [Header page]
3.3.1 Multiple response and SPSS: an introduction
3.3.2 Multiple response: British Social Attitudes 1986
3.3.3 First exercise in multiple response

3.4:   Conditional data transformations (**IF** and **DO IF**)

3.4.1 Tutorial - Conditional transformations

[No exercises yet]

3.5:   Derived variables (**COUNT** and **COMPUTE**)

Set of tutorials (with fully worked examples using data from a real survey of 15 year-olds) on the use of **COUNT** and **COMPUTE** to construct scores from simple attitude scales designed to measure "attachment to the status quo" and "sexism".

3.5.1 An introduction to COUNT and COMPUTE   **[Page on this site]**
3.5.2 Teenage Attitudes (Tutorials)   **[Page on this site]**

[NB: As of 24 August 2011 the following tutorials have now been converted to pdf format for quicker display The screenshots are from SPSS 15 as updating them for 19 would be prohibitively time-consuming, but the syntax will work with any version from 11 onwards. The links will open the tutorials, but I had a few problems with reciprocal links I have now hopefully sorted out]

3.5.2.1 COUNT and COMPUTE - Preliminary notes
3.5.2.2 Data checks 1 - Status quo
3.5.2.3 The COUNT command 1 - Attachment to status quo
3.5.2.4 The COMPUTE command 1 - Attachment to status quo
3.5.2.5 Data checks 2 - Sexism
3.5.2.6 The COUNT command 2 - Sexism
3.5.2.7 The COMPUTE command 2 - Sexism

[There's a Florida International University tutorial using COUNT to create an index of attitudes to abortion from the GSS 2000, but it uses the GUI, not syntax, and there are no screenshots except for a final frequency count and barchart of the index. Also almost 45% of the cases are missing at the end. However the bi-modal distribution prompts one to analyse the data by test variables to explain this.]Set of tutorials with fully worked examples on the use of COUNT and COMPUTE to construct scores on simple attitude scales using data from a real survey of 15 year-olds.
[NB: Numbering system within the documents is retained from previous tutorials for SPSS 15 until I get time to change them and re-upload]

Block 4: Hypothesis testing

 [Provisional contents, not necessarily in this order]

4.1 Hypothesis testing
4.2 Two means (t-test)
4.3 Three means (one way anova)
4.4 Chi-square (for contingency tables)
4.5 Regression and correlation
4.6 Association, structure and cause (modelling)