Introduction

This supplement assumes that you know the basics of using your computer, and also how to open and exit SPSS. It is based on SPSS 11.0. On opening SPSS, you will be presented with the Data Editor window, which has two 'views'. You switch between the Data View, which shows the data in a spreadsheet, and the Variable View, which shows details of each of the variables, by using the tabs on the bottom left of the window.

Entering data

Make sure you have the Data View of the Data Editor Window. Data can be entered manually, by typing into the cell and pressing the Enter Key. Alternatively, you can copy and paste from another spreadsheet — copy only the data, select just the top left cell of the rectangle you want it to go into in SPSS, and choose Paste. Thirdly, data may have been stored from a previous session in an SPSS 'sav' file. Using the menus, the worksheet could be re-opened by the commands:

File > Open > Data

then select the file in the usual manner. You can open Excel worksheets directly by choosing "Excel workbook" in the drop-down "Show" menu. SPSS may then give you a warning message in the output window, but this is just to say that it has assumed that all variables are numeric, so the message can be ignored.

Entering commands

We will use two different ways of entering commands. SPSS is very user friendly, in that analyses can be conducted by navigating your way through a set of menus. However, it can also be useful to use the equivalent set of commands, which are typed directly into the Syntax window. To obtain a new Syntax window, you select File > New > Syntax. After creating the new window, you can switch between windows by selecting them from the Windows menu.

Building up a knowledge of the basic commands will enable you to write programs in the SPSS language, which may prove useful when analysing similar datasets, for bootstrapping, and other simulations. To use the command line route, first type the commands into the Syntax window. Then you can execute the commands by choosing one of the items from the Run menu, or you can execute the statement in which the cursor lies by selecting the "Run current statement" button, which has a right pointing arrow like the Play button on CD players. If you wish to execute more than one statement at once, then select all statements before pressing the run button.

This supplement is designed to be read in conjunction with the main text. The section headings and Box numbers correspond to those in the original chapters (and so may not be contiguous).

Menu route instructions for in SPSS

Menus were designed to make life easier and more intuitive for the computer user. They do this superbly, except in one didactically crucial respect. Writing instructions for operating menus is fraught with problems. Some books show pictures of the dialog boxes and menus, but this takes up vast amounts of space, and can be tolerated only by real beginners to the whole world of modern computing. Another possibility is blow-by-blow accounts of the kind 'Now go to the Analyze menu, and choose the General Linear Model submenu, from which choose "Univariate…". A dialog box will appear, and in it, you should…' and so on. This is untidy to look at, easy to get lost in, and painful to read (not to mention to write!).

The solution adopted in this book is to provide a coded set of instructions for the menu route. Because menus are so user-friendly, and show the possibilities at every stage, only a few key-words need to be given as 'hints' to the user. The coded instructions are therefore virtually followable without any decoding, and you may wish to try this as an experiment! But for the sake of completeness, and to tidy up a few rough edges, here are the principles on which the code is based. It is remarkable how complicated it is to construct an apparently transparent coding system.

(1) ***The initial menu choice*** Instructions always begin with a selection from the pop-down menus found at the top of the screen (Macintosh) or window (Windows). This is coded by giving the names of the menu, submenu(s) and item to be selected, separated by ">". This invariably produces a dialog box. Within a dialog box, there are six kinds of actions. The internal actions, those that leave you still looking at the same primary dialog box, are Check Box, Radio Button, Pop-up menus, Selection and Direction, and Multiple Selection and Direction. There are often also buttons, whose effect is to bring up a sub-dialog box. Let us look at these in turn.

(2) ***Check box*** This will be indicated by a line stating simply "☑ *name of box*". When you see this instruction, look for a Check Box (they're square) and click in it. You should see a tick appear in the box to indicate that you have checked it. Occasionally, a box will be checked by default, and we wish to uncheck it. This will be indicated by "–☑ *name of box*".

(3) ***Radio button*** This will be indicated by a line stating simply "⊙ *name of button*". You may have noticed that Radio Buttons come in sets, and that only one of the set is active at one time, so that clicking on one makes it active, and renders inactive the previously active button. Just look for the radio button (they're round) with that name and click in it. The button should change to include a filled circle to indicate that it has become active.

(4) ***Pop-up menus*** This will be indicated by a line stating simply

Name of menu: | *item for selection* ▼ |

You should look for the pop-up menu with the name (some other item may be currently selected in the menu itself), click on ▼, and drag up or down to the item to be selected, then let go (in some cases you just need to select rather than drag and select). Your selection should now appear in the appropriate box.

(5) ***Selection and direction*** Lists of variables or other elements often appear in a *source pane* in a dialog box, and need to be moved to a *destination pane* for the analysis. First, click on the *destination pane*, indicating your intention to use it. Then you can either type the variable name directly into the *destination pane*, pick a variable in the *source pane* and double click on it, or select a variable and click on an arrow button. This will be indicated in various ways, depending on the situation. Often there is one source pane, and one destination pane. Then the action will be shown as *Variable* → *Destination pane*. You will see the variable name in the destination pane as confirmation of your action. If you need to select a variable and then click on an arrow to effect the transfer to the destination pane, then this will be indicated as follows:

Name of source pane → *Name of arrow button* → *Name of destination pane*
`VARIABLE` → `VARIABLE`

If you need to select a variable and then drag and drop it into a pane, this will be indicated as:

`VARIABLE` → (drag and drop) → Name of destination pane

In some cases numbers need to be transferred or typed into a pane. This will be indicated using the same notation; for example,

2 → standard deviations

indicates that the number 2 should be typed into the empty 'standard deviations' box.

(6) ***Multiple selection and direction*** Sometimes moving two variables together has a special meaning. The main examples in this book concern model formulae and interactions. The variable names need to be selected together by holding down the shift key while clicking on the variable names, and any additional symbols (usually *) will appear automatically as the variables arrive in the destination pane. So for example,

Factors & Covariates → *Build Terms* → *Model*
`WATER & SHADE` → `WATER*SHADE`

means the interaction term `WATER*SHADE` needs to be placed in the 'Model' pane, by selecting `WATER` and `SHADE` together, and clicking on the 'Build Terms' arrow. These instructions are easy to write, and easy to follow. They are simply confusing to describe!

(7) ***Button to sub-dialog*** Typically, a statistics package tries to keep life simple for beginners by designing a main dialog box that has few choices; but to allow sophisticated users to do complex things by having buttons on the main dialog box that lead on to sub-dialog boxes. In statistics packages, there is often a whole bank of such buttons. We will indicate their use by illustrating the button on a line of its own, and then indicating the actions in the subdialog box by indenting them. For example, often there is an options button which may lead to further choices. This will be illustrated as follows:

Options

Further subcommands

When the indentations finish, that means you need to click "OK" or "Continue" (but *not* "Cancel"!) to leave the subdialog box, and continue following instructions in the main dialog box. All of the internal actions described so far for the main dialog box can also appear in a subdialog box (though there are no cases of Buttons to sub-sub-dialog boxes in this book, unless you click for Help). The OK or Continue button will *not* be explicitly indicated in the instructions.

(8) ***Sub-panes*** Occasionally, it is not sufficient to simply state the name of the check box. For example, one dialog box gives you the option of saving predicted values or residuals either of which may be unstandardised. In this case, the name of the appropriate sub-pane will be given followed by a colon, with the name of its check box beneath. For example:

Predicted values:
☑ Unstandardised

Residuals:
☑ Studentized

So in these cases, two lines are required for one action. They are usually only a single line spacing apart.

(9) ***Tabs*** A dialog box occasionally has a number of possible sheets (or windows) stacked on top of each other. Each is accessed by clicking on a tab at the top of the box — rather like a card index file. If it is necessary to change to one of the alternative sheets via a tab, to execute further subcommands, this will be represented as follows:

Tab name

Further subcommands

These principles have been applied to provide a simple and easily comprehensible guide to using menus. The equivalent commands in SPSS syntax will also be provided wherever possible.