



Getting Started With SPSS for Windows

*An introduction to the SPSS
for Windows statistical
analysis program.*

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Format Conventions

In this document the following format conventions are used:

Commands that you must type in are shown in bold Courier font.	WIN31
Menu items are given in a Bold, Arial font.	Windows Applications
Keys that you press are enclosed in angle brackets.	<Enter>

Feedback

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1 Introduction

Computers were originally designed for numerical computational tasks and despite current popular usage in text processing, that is still what they are best at. They are particularly good at boring, repetitive and laborious calculations, and that is what much statistical work consists of. For many years people have produced programs for PCs and mainframes that perform these long and complicated statistics calculations on sets of data. Most of these programs have required you to learn a command language in order to perform the calculations. In addition, these statistics packages required you to flip between at least three files in turn – your data file, your command file and your output file. This has felt very clumsy.

SPSS for Windows is one of a new breed of statistical software which takes advantage of the Microsoft Windows (MS Windows) graphical environment. The aim of the product is to make statistics as straightforward and easy a task to accomplish on computer as possible. The MS Windows environment enables you to see multiple files open at once. The menu system enables you to build up complex statistical commands quickly and easily using a 'point and shoot' method, without necessarily involving detailed knowledge of the command language.

Aim of this Document

This document is designed to introduce you to the SPSS for Windows interface. From the information in this document you should be able to open SPSS for Windows, find your way around the interface and use the Help system. You should also be able to enter data, save files, print files and learn the basics of performing statistical analyses.

The document is intended for anyone wanting to use SPSS in the MS Windows environment. It is assumed that you already know how to login to the Novell network, start MS Windows and perform basic MS Windows operations with the mouse. No prior knowledge of SPSS is assumed. The example sheet used for the illustrations in Section 6 is called **BANK.SAV** and can be found in the directory **L:\WINAPPS\SPSWIN61** on all Novell servers.

If you are using, or intending to use, SPSS for Windows on your own PC you will also find this document useful. If you want to obtain a copy of the software to run on your own PC you should contact the Help Desk in the ISS. The Help Desk sell copies of the software, and provide details on how to install the software and the terms of the SPSS site licence.

2 What is SPSS for Windows?

Before the Windows version was written, SPSS was used on a variety of computer systems including CMS, UNIX and the MS DOS operating system. This document is designed for use with versions 8.0 and 9.0 of SPSS for Windows.

The History of SPSS

SPSS has long been one of the most popular statistical analysis packages amongst academics in Britain. Originally it was designed for the analysis of Social Science data, but it has developed into a general statistical analysis system for all types of data. Leeds first purchased SPSS for the ICL 1906A in the early 1970s, then obtained it for the Amdahl computer and it appeared on the PC as SPSS/PC+ in about 1986. Now with the trend in the computing world towards windows environments, SPSS has been one of the first companies to release an MS Windows version of a statistics package.

The advantages of running SPSS under MS Windows are enormous. Firstly, the ability to have more than one file open at once means that SPSS users can see their data file alongside their command file and their output file. This greatly facilitates error correcting when writing long and sometimes complex command files. It also helps analysis where you can check the results of an analysis against the raw data.

Secondly, the system of menus and dialog boxes which drives all MS Windows applications enables statistical analysis to be done, not by learning a command language and typing it in, but by selecting your analysis from a list of options. In this way you are freed from the mechanics of how to perform the analysis and are left to think about the analysis you want to perform and what it means.

Thirdly, the graphical nature of MS Windows means that SPSS have now included an excellent graphics module, enabling users to view the results of analyses with pie charts, column charts, histograms and scatter plots. With the ability to plot graphs in 3 dimensions you can even perform a cluster analysis by rotating data on one of the three axes and lining the points up by eye.

Finally, statistics are never produced in a vacuum, but are always for presentation to others. The MS Windows environment facilitates the easy transfer of data, results and graphs from SPSS into other applications, especially word-processing applications. SPSS supports many types of data transfer from basic cut, copy and paste to full DDE ¹ and OLE ² compliance. SPSS is also able to save data in a variety of file formats in case you want to use another package to present or analyse it. Particularly, SPSS will read and write Excel v4 and Lotus v2 spreadsheet files.

¹ DDE - Dynamic Data Exchange. A method of automatically accessing data from other computer packages.

² OLE - Object Linking and Embedding. A method whereby other applications are called automatically to edit pasted objects.

3 Starting SPSS for Windows

To start SPSS you need to be logged on to the Novell network and running MS Windows NT (at least version 4.0 of NT is needed for SPSS version 9.0).

Memory Limitation

Before you start to run SPSS you will need to make sure that the machine you are using has enough memory to run it. SPSS is a large program, and the latest version requires a minimum of 8Mb RAM in order to run. If you are uncertain whether the machine you are currently sitting at has enough memory, go to the **Help** menu in Windows NT Explorer and select **About Windows NT** as shown in Figure 1. The box shown in Figure 2 is then displayed.

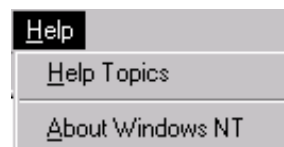


Figure 1 The Windows NT Explorer Help menu



Figure 2 The About Windows NT information box.

If the number to the right of **Memory Available to Windows NT:** (near the bottom of Figure 2) is less than 8,192 KB you will not be able to run SPSS. In this instance you will need to find a computer that does have the memory you require. There should be a notice on the cluster notice board informing you of which machines have 8Mb on them.

Running SPSS

To run the SPSS program, position the mouse cursor over the SPSS icon, and press the left hand mouse button twice quickly.³



³ On Novell systems the SPSS icon will normally be in the Statistics group.

4 The Opening Display

SPSS may take a minute or so to load, but once it has done so your screen should look the one below. If this window does not appear you should go straight into the Data Editor window shown in Figure 4 instead.



Figure 3 The opening SPSS Screen for versions 8.0 and 9.0

Select the appropriate radio button, for now select **Type in data**, and click <OK>. You should now be able to see the Data Editor window.

The Data Editor Window

The SPSS interface follows many MS Windows conventions that users of other MS Windows programs will be familiar with. The Data Editor contains a *title bar*, a collection of *menus*, a *toolbar* and a *status bar*. Figure 4 shows the Data Editor in version 8.0 of SPSS (version 9.0 is only slightly different).

In structure it looks very like a spreadsheet, such as Excel, but in practice it operates in a very different way. This window is where you enter, edit, view, transform and label the data that you want to analyse. Each column of the grid represents a single *variable*, and each row in the grid represents a single *observation* or *case*. The data window is unique among all the SPSS windows in that it is the only window which you can only have one of open at any one time.

It is important that you realise the differences between the SPSS data sheet and an Excel spreadsheet. In the SPSS data sheet the structure of the rows and columns is important and rigid. Columns are always variables, rows are always observations. In a spreadsheet you have the flexibility to change this around. Also, calculations are set up in different ways. With SPSS you use one or more variables in a calculation to produce another variable, so

calculations are done literally column by column. In Excel you can use two individual cells for calculations, and then cascade the calculations into other cells or groups of cells as you want. Also, in spreadsheets the cells can store the formula and recalculate the result if the original data changes. SPSS only stores values, so if the value of a source variable changes you will have to repeat the calculation.

SPSS data is stored in a data file. This is equivalent to what used to be called the *SPSS System File*. The default file extension for data sheet files is *.SAV*. You can read data in to the SPSS data sheet from a variety of sources, the most significant of which are SPSS portable files, Excel spreadsheets, Lotus 1-2-3 spreadsheets and text files.

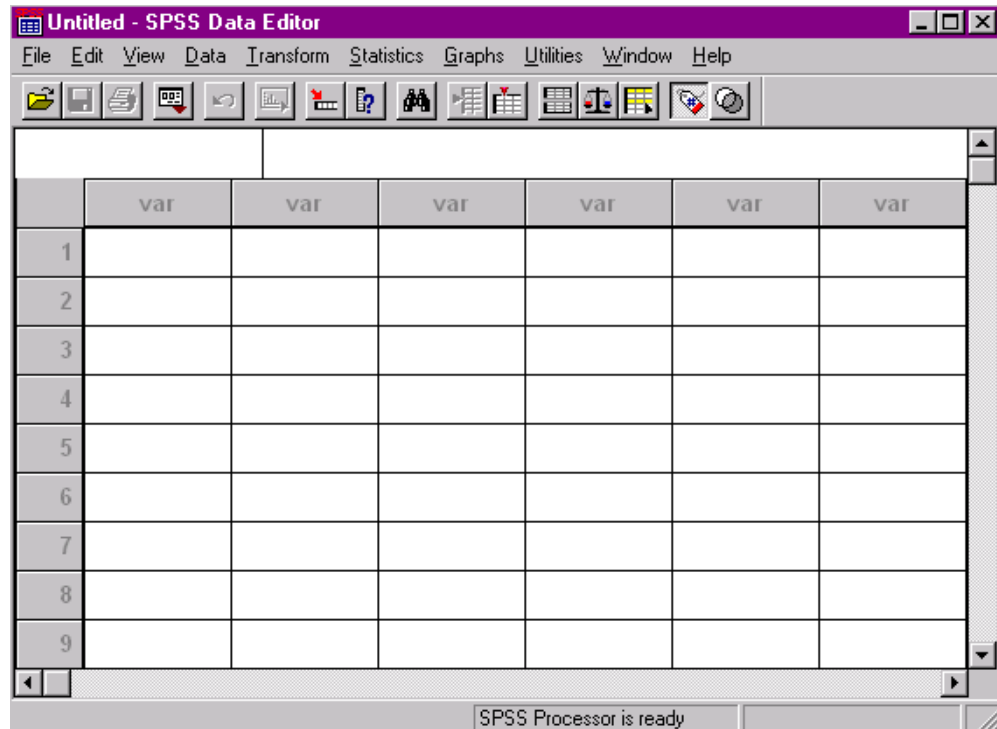


Figure 4 The Data Editor window for version 8.0

Menus

SPSS has ten main menus available when you are viewing the Data Editor window. Version 9.0 has a menu labelled **Analyze** instead of **Statistics**. The list of menu options changes when you are in different windows. The menus follow the standard Windows format of having the **File** and **Edit** menus to the left hand side of the screen, and the **Window** and **Help** menus on the right. The menus found in the Data Editor window are described in more detail below:

File

The **File** menu deals with all the file-handling aspects of SPSS. If you want to open an existing file, open a new file, save a file or print a file, the commands are all here. Version 9.0 has a **Read Text Data** option to replace **Read ASCII Data**.

Also included is an **Apply Data Dictionary** command that stores information about your data. This is especially useful if you have received data from elsewhere and you need to know what it is about and how it is organised.

Finally the command to exit from SPSS when you have finished is here.

Edit

The **Edit** menu also shares much in common with other Microsoft Windows applications. This menu contains commands for undoing the last action, cut, copy and paste actions, and the command for find. Also in this menu is the **Options** command so that you can alter your own SPSS set up.

View

The **View** menu alters some of the display attributes, such as whether grid lines are displayed and whether value labels are displayed instead of the codes. The chosen commands are marked with a tick.

Data

The **Data** menu is used to make global changes to SPSS data files, such as merging files, transposing variables and cases, or creating subsets of cases for analysis. You can insert new variables and new cases, or you can sort your cases according to a particular variable, transpose the cases or weight the cases. These changes are temporary unless you specifically save the file with the changes. The **Orthogonal Design** option is no longer in the **Data** menu in version 9.0.

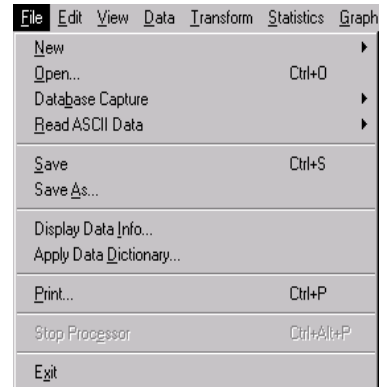


Figure 5 The File Menu in the Data Editor window



Figure 6 The Edit Menu in the Data Editor window

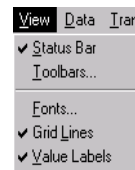


Figure 7 The View Menu in the Data Editor window

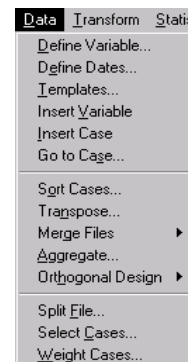


Figure 8 The Data Menu in the Data Editor window

Transform

The **Transform** menu is used to make changes to selected variables in the data file and to compute new variables based on the values of existing ones. Random numbers can be generated and ranking or recoding of data can also be done. Changes are only temporary unless you specifically save the data file. Version 9.0 has the extra choice of categorising variables from discrete values to categories, this is done using **Recode** in version 8.0.

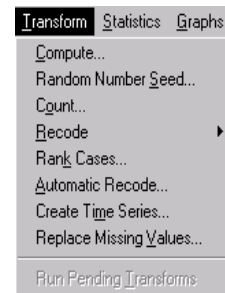


Figure 9 The Transform Menu in the Data Editor window

Statistics

The **Statistics** menu (**Analyze** in version 9.0) contains the 'meat' of the package. It contains all the categories of statistics that SPSS is capable of performing. The little arrows to the right of all the menu options indicate that there is a submenu of more specific tests or groups of tests. The submenus are too detailed to go into here. This menu is slightly different in version 9.0. The **Summarize** option is split into **Reports** and **Descriptive Statistics** but the total content remains almost the same.

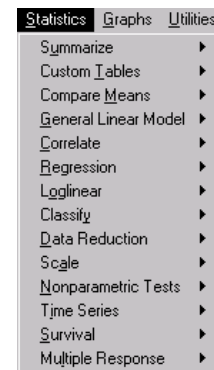


Figure 10 The Statistics Menu in the Data Editor window

Graphs

The **Graph** menu enables you to plot graphs from the data. Some of these graphs can also be plotted as part of a wider analysis. SPSS supports the five main chart types – Bar (or Column), Line, Area, Pie and High-Low. It can also produce real histograms, quality control graphs, scatter plots in up to 3 dimensions, and several other specialist graph types (version 9.0 can also produce an ROC curve). One extra graph SPSS supports is the Boxplot, used mainly in non-parametric analysis, or when you want to get a feel for the shape of a small quantity of data.



Figure 11 The Graph Menu in the Data Editor window

Utilities

The word 'Utilities' in menus often means 'Miscellaneous' – which means that this menu collects all the commands that did not fit comfortably anywhere else. The **Utilities** menu houses a list of variables currently available from the data sheet, it allows you to define sets of variables which need to be analysed together. Finally the **Utilities** menu allows you to run a script or change the menus using the menu editor.

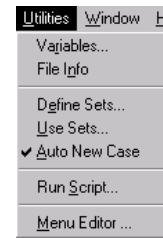


Figure 12 The Utilities Menu in the Data Editor window

Window

The **Window** menu is found in many MS Windows programs, and it is simply a series of commands to let you select and resize the other windows used in SPSS. Most of the commands here can be done with the mouse.

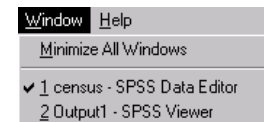


Figure 13 The Window Menu in the Data Editor window

Help

This menu contains the commands for the SPSS Help system. The Help system is described in more detail later.

Other SPSS Windows

The total number of other windows you can have open is limited only by your computer's system resources (except for the *Data Editor* window where only one is allowed to be open at any one time), but their types fall into five categories. When you first open SPSS, two of the windows are usually opened automatically for you – the *Data Editor* window and the *Output* window. If the *Output* window does not open immediately it will do so when an analysis or chart is requested. The other windows you will have to request specifically, either by double clicking on a chart in the *Output* window (this produces the *Chart Editor* window) or by opening a new or existing command file (producing the *Syntax* window or the *Script* window).

Output Window

The *Output* window is where SPSS stores the results and charts from all of the analyses you have performed. This window can be saved with the extension *.SPO*. You are not expected to enter information into this window manually, but you can edit the contents if you want.

Syntax Window

The *Syntax* window is a straightforward text window, the purpose of which is for you to type in SPSS commands to analyse the data set. Many users will not want to learn SPSS commands, and some may not need to, but there are certain analyses which SPSS will only do through the command language.

The Toolbars

Underneath the menu bar is a toolbar that contains shortcut buttons to the most common commands. The buttons available on the toolbar depend on which window you have active at the time.



Figure 14 The Data Editor toolbar

If you move the mouse cursor over the buttons in the toolbar then their functions will appear in the status bar at the bottom. The main button functions are described below.



File Buttons

The first three buttons give the three most common commands from the **File** menu – **Open an Existing File**, **Save the Current File** and **Print the Current File** respectively.



Dialog Recall

This button gives you immediate access to the last 12 dialog boxes you were working with. This is extremely useful if you are building up an analysis and constantly going back to the same box to change or modify an option.



Goto Chart

This button allows you to go to an open *Chart Editor*.



Goto Data

When in a window other than the *Data Editor window* this button will return you to the Data Editor.



Goto Case

This button allows you to go directly to a specific case in the data editor. It is useful if you need to edit your data, or if something unusual has cropped up in your analysis and you want to check out the source data.



Variables

Clicking on this button produces a dialog box containing a list of all the variables defined in the data file. Selecting a variable from this list displays the variables properties - its name, label, type, information about missing values and the value labels. This box can be kept open whilst you work with the data file so that you can examine a variable's information as you examine the results of an analysis.



Find

This button allows you to perform a simple search to find a value.



Insert Case / Insert Variable

Data entry, being the tedious exercise that it is, is fraught with errors. Consequently it is not unusual to find yourself wanting to add a case or a variable in the middle of ones already created. These two buttons will add a blank row or column in your dataset to allow you to do that.



Split File/Weight Cases/Select Cases

These buttons allow you to do three of the **Data** menu commands with ease.



Value Labels

In SPSS you can create meaningful labels for non-meaningful numerical data. This button allows you to display the labels in the data editor so that you don't have to remember what the numbers meant.



Use Sets

In SPSS you can group variables together into sets so that the variables can be analysed together. This button allows you to specify what sets of the ones you have defined you want to use.



Designate Window Button

SPSS allows you to have more than one Output or Syntax window open at any one time so that the results you create can be shuffled into different files. This begs the question of how SPSS knows which file you want the results to go to. The answer is that, for example, one of the Output windows has to be the *Designated Window*. This is indicated by an exclamation mark (!) in the title bar of the window. If you want an Output or Syntax window to become the designated window, make it the active window and click this button on the toolbar.

Note The *Designated Window* is not the same as the *Active Window*. The Active Window is the window at the forefront of your screen. Anything you type, or any menus you use should happen in the Active window. Of all the windows you have open on your desktop, only one will be the Active Window. The term *Designated Window* only applies to Output and Syntax windows which act as a destination for SPSS produced text. There is one designated Output window at any one point in time plus one designated Syntax window.



Run Commands

This button allows you to run commands from the Syntax window. SPSS will begin from the start of the command where the insertion point currently is, and go through the commands until it finishes.

Chart Editor Window

If you want to edit a chart, double-click on it twice and it will open up in the Chart Editor window.

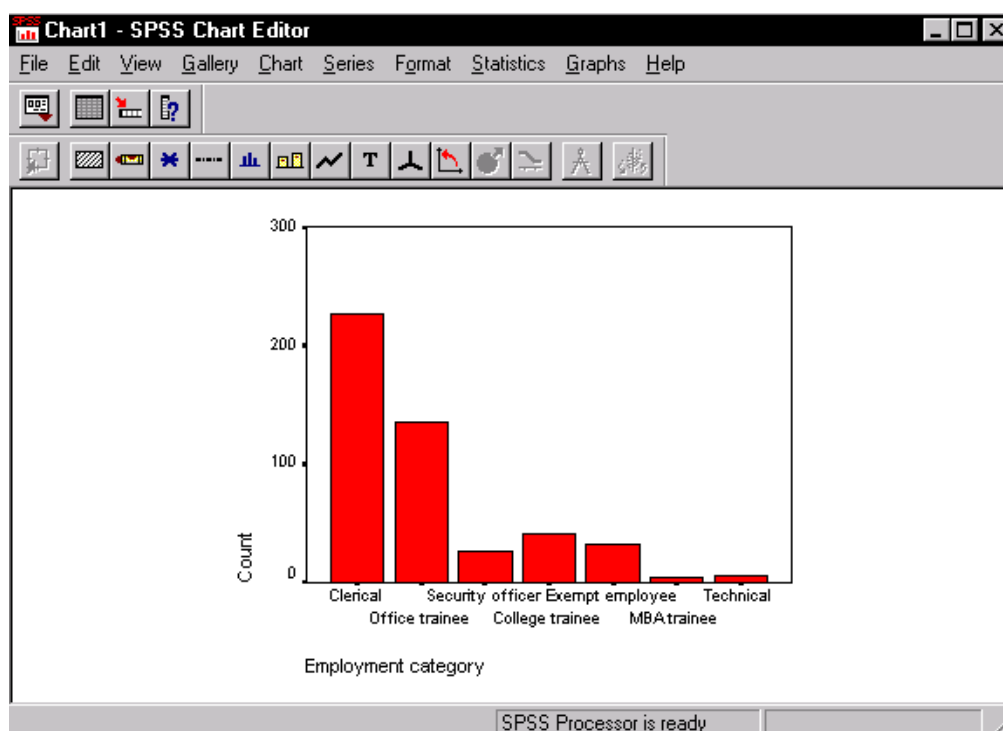


Figure 15 SPSS with The Chart Editor window

Notice that the menus have changed again, and so has the toolbar. In the *Chart Editor* you can tailor your charts to suit your needs. The main menus – **File, Edit, View, Statistics/Analyze, Graphs** and **Help** – have stayed exactly the same, but now there are new menus of **Gallery, Chart, Series** and **Format**. The new menus are briefly described here.

Gallery

This menu lets you choose the sort of chart to display. The menu is a cut-down version of the Graph menu described earlier.

Chart

This menu allows you to add and alter the peripheral bits of a chart, such as the title, legend and other sorts of annotation.

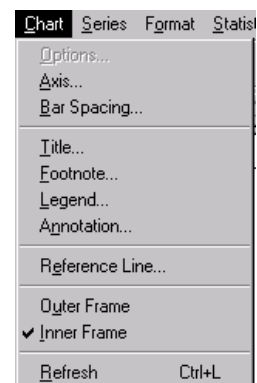


Figure 16 The Chart menu

Series

This menu lets you alter the way the series is displayed, including the omission of certain values, and lets you transpose data directly on the graph.















Format

This menu alters just about everything else on the graph itself – the colours, the font types and sizes, the style of graph and the perspective. It also allows you to add in an interpolation or regression line through a set of points.

The toolbar has also changed so that it contains the base tools already described plus tools specific to working with charts. These tools are actually button shortcuts for commands in the **Attribute** menu. They are:



Figure 17 The Format menu

	Fill pattern		
	Colour palette		Explode slice (of a pie chart)
	Marker style		Break line for missing values
	Line style		Chart options
	Bar style		Spin mode. Using this mode you can rotate a 3-D scattergram on any of its three axes. Clicking this button will in itself produce another toolbar, but that is beyond the scope of this document.
	Bar labels		
	Interpolation		
	Font type and size		
	Swap axes		
	3D rotation		

5 The Help System

Usually it is not necessary to describe a program's Help system. If the Help system needs to be described so that people can use it then it indicates that it isn't very good. The Help System for SPSS does not *need* describing, but it is so good that an overview of what's available should be informative.

SPSS has an extremely thorough Help system. The **Topics** section allows you to choose from a contents list or an index, or run a search for a topic. The **Tutorial** section is good for the first-time user for a general overview (see later). Option **SPSS Home Page** will open a web browser at the manufacturer's home page. The **Statistics Coach** is designed to help you find the best way of achieving the analysis you want. The **About** command simply displays information about the release date and version of SPSS.

Context-sensitive help is also always available either from the Toolbar or from a Help button in dialog boxes.

Version 9.0 also has a useful **Syntax Guide** in the Help menu.

The Tutorial

SPSS have written a simple introductory tutorial that will take you through the basics of using SPSS for Windows and introduce you to the major concepts involved. It is strongly recommended that if you are new to SPSS you go through the Tutorial before you attempt to do anything else with the program – it could save you a lot of time later!

Selecting the **Tutorial** option from the **Help** menu brings up the following window:

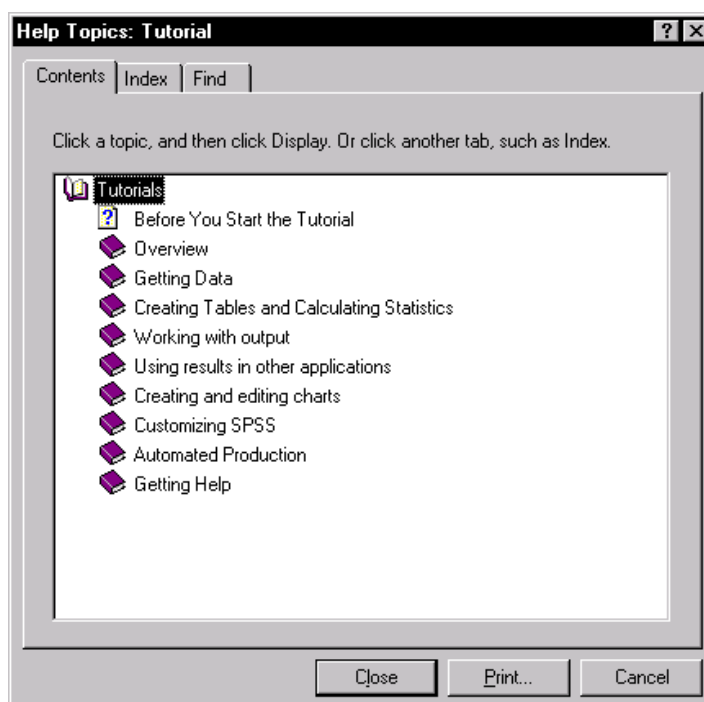


Figure 18 Tutorial screen

There are many sections to the Tutorial that go through different aspects of using SPSS, including entering and editing data, performing an analysis, creating and editing charts, and getting help whilst you work.

The Index

For the experienced and the novice user the **Index** section provides explanations of a wide range of terms, including what all the statistical tests are, when they are used and what the results mean. For people who are uncertain on their statistical knowledge this section could be very useful.

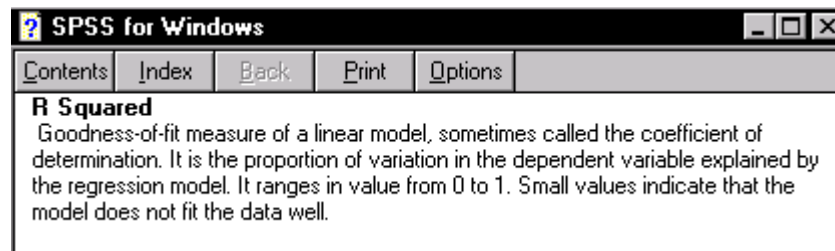


Figure 19 An example of the Index Help system

Syntax Diagrams

The experienced user who starts to write their own SPSS language commands directly into a Syntax window will benefit from the using the Help Index to find syntax commands. The resulting information gives a description of what the command does and a syntax diagram explaining how to write the command correctly. Having this help screen open alongside your Syntax window will prove invaluable for many people.

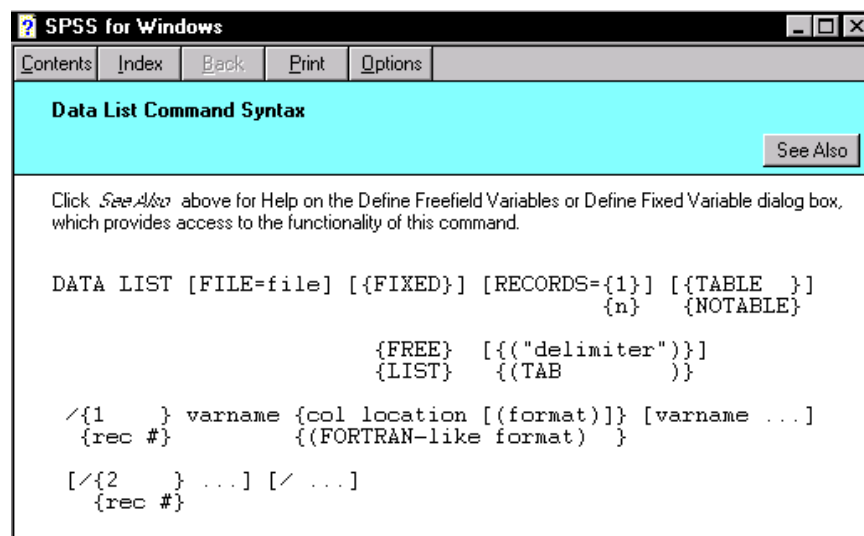


Figure 20 An example of the Syntax window

The fact that the Help System is so comprehensive means that it is possible to get started on SPSS without using a manual, although serious users are strongly recommended to obtain a manual if they can. If you cannot, or would rather not, purchase a manual then you can print out Topics in the Help system for reference and bed-time reading.

6 Using SPSS for Windows

Aim

This section goes through some of the common actions you might want to do in your first session with SPSS. It is not designed as a step-by-step tutorial, but merely as a pointer on how to accomplish certain tasks. For the examples, a data sheet called **BANK.SAV** is used, which is located in the `\WINAPPS\SPSWIN61` directory on the **L:** drive on the Novell network.

Entering Data into a Blank Datasheet

In a blank data sheet, along the top all the columns are labelled `var` in light grey, and down the left-hand side all the rows are labelled 1, 2, 3, ... in light grey. The light grey indicates that there is nothing in the rows or columns yet. There should be a dark border around the cell in the top left hand corner. This dark border is called the *cell highlight* and it highlights the *active cell*. The active cell is where any numbers or text that you type will appear.

Type the number 1. The number 1 appears in a line above the grid of cells, called the *data line*. Now press **<Enter>**. The number appears in the cell. Also the number 1 on the left changes from light grey to black, and the word `var` at the top of the first column changes to `var00001` in black. This indicates that row one (the first observation) has some data, and that column one (the first variable) has some data. Also, the cell highlight is now on the cell below the one containing the number 1. Continue entering numbers, following each number by pressing the **<Enter>** key.

2 **<Enter>**, 3 **<Enter>**, 4 **<Enter>**, 5 **<Enter>**

Using either the arrow keys on the keyboard, or clicking with the mouse, select the first cell at the top of the second column. Now type the number 1 again and press **<Enter>**. Once again the greyed-out word `var` at the top of the column changes to black and becomes `var00002`, indicating that a second variable has now been created. However, if you look carefully in the cells 2-5 in the second column you will see that they contain full stops. In SPSS the full stop, or period, represents a 'missing value'. There is no such thing as an empty cell in SPSS. Values either exist for each variable and case, or else they are missing. Fill in the rest of the numbers as before:

4 **<Enter>**, 9 **<Enter>**, 16 **<Enter>**, 25 **<Enter>**

Naming Variables

The names that SPSS automatically gives to your variables are not terribly informative, so it makes sense to rename them. To do this, move the cursor over the variable name you want to alter at the top of its column, and double click the mouse button. Alternatively select the **Define Variable** command from the **Data** menu. A dialog box appears in which you can type your new variable name. The box also has a number of options for labelling your variable, and formatting the way the numbers will appear in the data sheet. Fill in the boxes as you want them and then click the **<OK>** button.

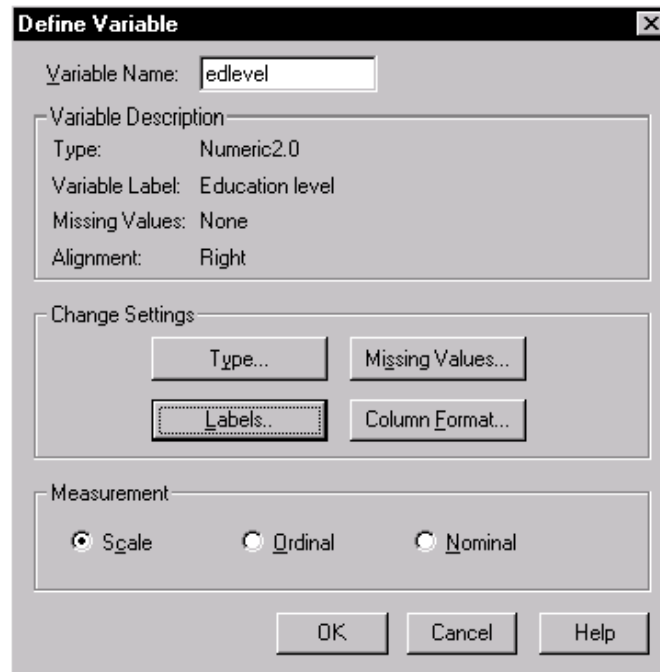


Figure 21 The Define Variables dialog box

Saving an SPSS File

To save the data sheet to a file, select the command **File Save As....** A dialog box appears in which you select the drive and directory you want to save the file to, the name of the file you want to create, and also the file format of the file you want to create. This is especially useful if you want to transfer your data to other applications.

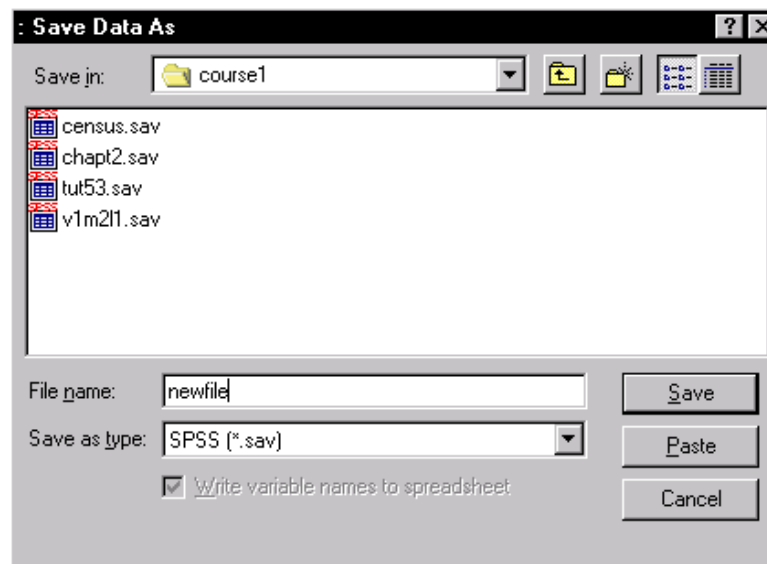


Figure 22 The Save As dialog box

Opening an Existing File

From the **File** menu select the command **Open**. Different file types have different formats and extension names, so it is important for SPSS to know what file type it is opening. Select the file type you want using the mouse (**.sav**, **.spo**, **.sys**, **.sbs**). A dialog box appears listing all the files of that type in the current directory. Change directory using the drop down box **Look in:** Once you have found the file, select it and click on **<Open>**. The file opens, but any data file you were previously working on is closed.

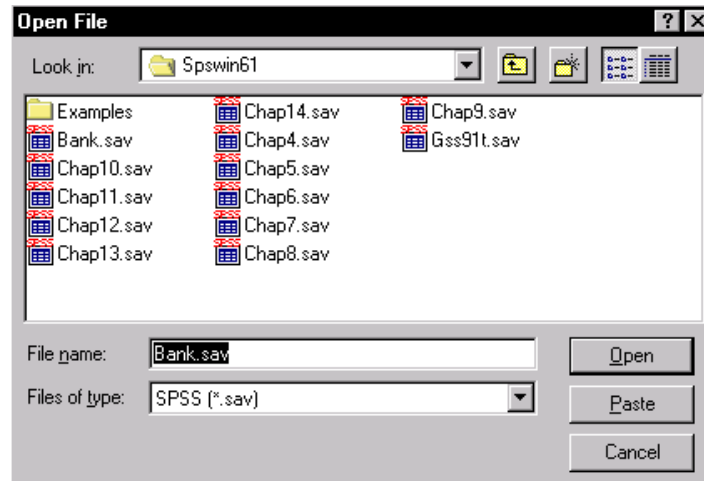


Figure 23 The Open File dialog box

Performing a Simple Analysis

With a loaded file in the data sheet, select the **Statistics** menu (or **Analyze** in version 9.0 of SPSS). This gives you the list of options of statistical analysis that you can perform. Select the **Summarize.. statistics** (or **Descriptive Statistics** in version 9.0 of SPSS). A submenu appears with a list of the summary statistics you can perform with SPSS. If you select **Frequencies**, a dialog box appears giving you options for your frequency statistics.

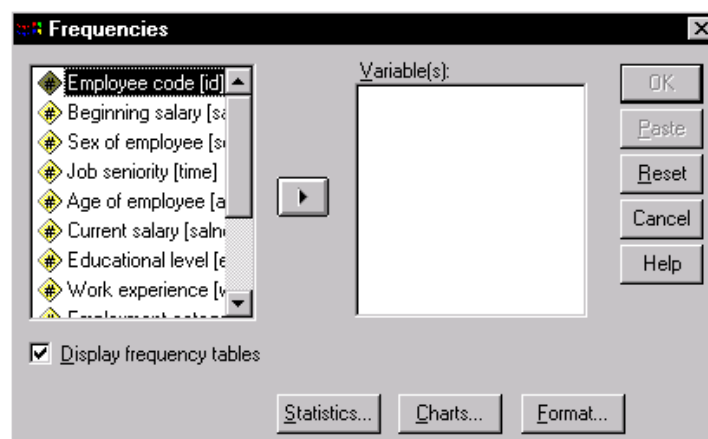


Figure 24 The Frequencies dialog box

The first job is to select the variables you want to work with. This is done by selecting them from the column on the left-hand side, and pressing the arrow button to 'transfer them across' to the list of variables to be analysed. Once this has been done you could just click **<OK>** and the default frequency analysis would go ahead. Alternatively, click on one of the buttons at the

bottom of the dialog box. These each bring up another dialog box in which you can add to the statistics which are calculated. You can also ask SPSS to plot graphs here.

When you have tailored the analysis to your needs, click the **<OK>** buttons. The analysis starts off, and the progress of what commands are being run is shown on the status bar at the bottom left hand corner of the main window. The **Output** window is moved to the front and the results of the analyses are placed there for you to view.

Plotting Graphs

Start with the Data Sheet being the active window at the front of the screen. Select the **Graph** command. From the list of graph types available you select the one you want – try a bar chart. Do not worry about being too precise at this point because you can always change the format of the graph at a later stage.

A dialog box appears asking you what sort of graph within the type you have chosen you want (see Figure 25). Choose one and click on **<Define>**.

A second dialog box appears for you to choose the variables you want plotted.

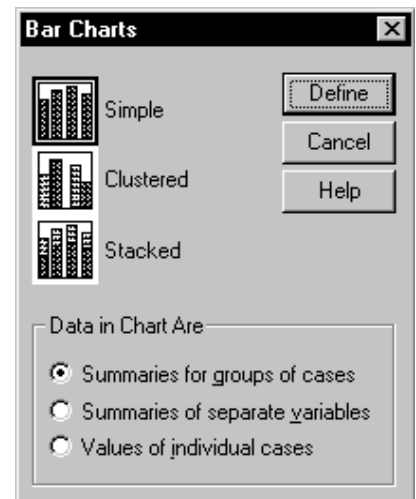


Figure 25 The Define dialog box

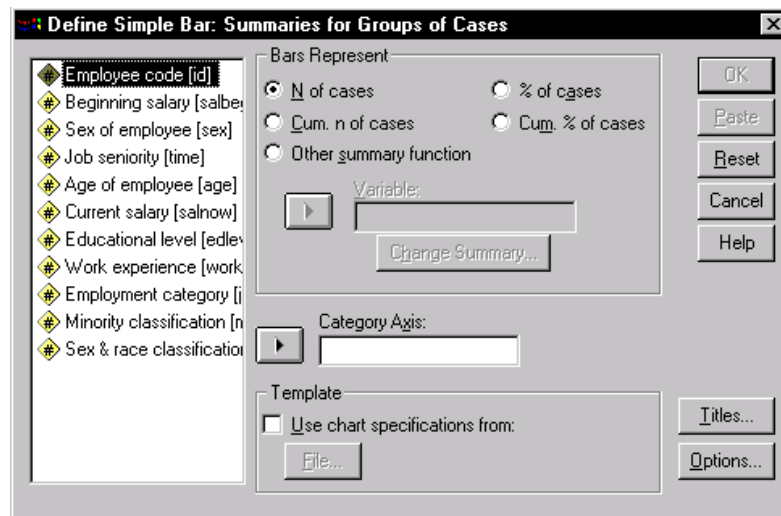


Figure 26 Bar Chart dialog box

Select the variables you want to plot in the same way as you select the variables you want to analyse by clicking on the variable and then clicking on the button next to the box labelled **Category Axis:** At this stage you can also add a title to your graph and alter other plotting options. When you are ready, click the **<OK>** button. The graph is plotted and placed in the Output window.

If after preparing your analysis dialog box, or your graph box, you click the **<Paste>** button instead of the **<OK>** button, an SPSS command performing exactly the same action is pasted into the designated Syntax window. If no Syntax window is open a new one is created. The command is not run but is

left in the Syntax window for you to edit and run later. In this way you can build up your own command files by creating them via the menus and dialog boxes.

Printing Files

Have the window of the data you want to print as the active window, and the data highlighted, and choose **Print** from the **File** menu. If you have set up a printer in the control panel correctly your file should print without problem. You should consult the document *Getting Started on Microsoft Windows on the PC (BEG 2)* for more details.

7 General Comments

The Command Language

It is recommended that everyone who uses SPSS, except on a casual or occasional basis, should be familiar with the basics of the SPSS command language. Not only will this give you a greater understanding of how the SPSS system works, and therefore how best to use it to suit your needs, but it will enable you to do more precise and complicated analyses than are possible by just using the menus and dialog boxes. For certain analyses it may also be quicker.

The command language in SPSS is notorious in that no two versions of it are exactly the same. The essential commands and syntax are the same, but there are minor differences that you will have to watch out for. It is always worth transferring your command files to see if they work, but if they do not it may be better to rebuild them from scratch using the menus and dialog boxes, and then pasting the commands into the Syntax window.

The two main things to watch out for when transferring command files to SPSS for Windows from other versions is to make sure there is a full stop at the end of every command and that a batch of commands has an **EXECUTE** statement as its last command.

Transporting Data Between Different Versions of SPSS

Users wanting to move their SPSS work between SPSS for Windows and other versions of SPSS (such as SPSS/PC+ or SPSS on the Sun GPS system) are strongly advised to transfer their data either as an ordinary text file or as an SPSS portable file. If you already have a permanent SPSS system file, the latter option is probably the best one. The fact that the command language in SPSS for Windows is subtly different from the command language in other versions means you should not necessarily expect command files written in other versions to run without problems.

Using SPSS with Spreadsheet Files

SPSS can read and write spreadsheet files in Excel or Lotus format. People who already have data in a spreadsheet file can easily transfer it to SPSS for detailed statistical analysis. However, if you are intending to transfer your data from Excel or As-Easy-As to SPSS there are some points to watch:

- Your data should be organised into columns for the variables and rows for the observations. If they are not, transform them in the spreadsheet first.
- The main table of data should be in the top left-hand corner of the spreadsheet. If it is not, you will probably have to delete a number of columns and/or rows in the SPSS datasheet to remove unwanted blank space.
- If you have put titles at the top of your data, SPSS will assume that these are the variable names, and will make them so. SPSS may have trouble if you have more than one row of titles.

8 Documentation

The SPSS Incorporation produce their own manuals for SPSS for Windows which can be purchased through the Help Desk. The manuals available are:

SPSS Base Users' Guide

Essential for anyone using SPSS on a regular basis. Covers the use of the interface, charts and basic statistics.

SPSS Base System Syntax Reference Guide

Required if you are going to be writing SPSS command files.

SPSS Regression Models (Professional Statistics for version 8.0 and below)

Covers Discriminant Analysis, Factor Analysis, Cluster Analysis, Reliability Analysis and Multidimensional Scaling. The manual covers the use of both the Menus/Dialog boxes method, and the command language syntax for these type of analysis.

SPSS Advanced Models (Advanced Statistics for version 8.0 and below)

Covers more advanced Regression and Analysis of Variance procedures. Includes Logistic Regression, Loglinear Models, Nonlinear Regression, Cox Regression, Factorial Analysis of Variance, Multivariate Analysis of Variance, Repeated Measures Analysis of Variance, Probit Analysis, Life Tables and Kaplan-Meier Survival Analysis.

SPSS Tables

Covers procedures for calculating and presenting tables of data and the results of analysis.

SPSS Trends

Covers Time Series Analysis, Exponential Smoothing, Regression Forecasting and ARIMA Models.

SPSS Categories

Covers Optimal Scaling.

SPSS Conjoint Analysis

Covers Conjoint Analysis (Conjoint is part of the Categories manual for version 8.0 and below).

More SPSS manuals will become available as extra modules to the SPSS system are released.