

Introduction to IBM SPSS®

1.1 WHAT IS IBM SPSS?

IBM SPSS is a computer statistical software package. This software can perform many types of data-oriented tasks such as recoding a variable (e.g., “flipping” the values of a reverse-worded survey item). It will perform these tasks for each case in the data set, even if there are tens of thousands of cases (a daunting job to perform by hand). IBM SPSS can also perform a huge range of statistical procedures, ranging from computing simple descriptive statistics such as the mean, standard deviation, and standard error of the mean, through some fundamental procedures such as correlation and linear regression, to a variety of multivariate procedures such as factor analysis, discriminant function analysis, and multidimensional scaling.

SPSS at one time was an acronym for *Statistical Package for the Social Sciences* but it is now treated as just a familiar array of letters. This is just as well, as researchers from a wide array of disciplines, not just those in the social sciences, use this software. Relatively recently, IBM purchased SPSS and beginning with version 19 has officially renamed the software as IBM SPSS.

1.2 BRIEF HISTORY

As described by Gamst, Meyers, and Guarino (2008), in the long-ago days, users did not have the luxury of pointing and clicking but instead actually typed syntax (SPSS computer code) as well as their data onto rectangular computer cards that were then physically read into a very large mainframe computer. Eventually, the cards gave way to computer terminals where users would type their data together with the syntax to structure their analysis via a keyboard and CRT (cathode ray tube) screen. The software finally reached the relatively early personal computers (PCs) in the middle 1980s, and it has gained considerable sophistication over the years.

As the program developed, one aspect has remained consistent: the statistical procedures are still driven by syntax. As we interact with the dialog windows, IBM SPSS is actually converting our actions and selections into its own code (syntax).

FIGURE 1.1

The three types of IBM SPSS files with which we ordinarily work: data files (.sav), output files (.spv), and syntax files (.sps).



1.3 TYPES OF IBM SPSS FILES AND FILE NAME EXTENSIONS

There are three kinds of files with which we ordinarily work when using IBM SPSS: *data files*, *output files*, and *syntax files*. We constantly deal with data and output files; more seasoned users also use syntax files extensively. Each file type has its own file name extension and distinctive icon, as shown in Figure 1.1. We discuss data files in Chapter 2 and output files in Chapter 4 and leave any discussion of syntax files for more specialized applications in some of the later topics covered in the book (e.g., performing simple effects in analysis of variance). The story on each file type in simplified form is as follows:

- *Data File*. This is a spreadsheet containing the data that were collected from the participating entities or *cases* (e.g., students in a university class, patients in a clinic, retail stores in a national chain). In the data file, the variables are represented as columns; cases, as rows. This file type uses the extension **.sav** and its icon shows a grid.
- *Output File*. This file is produced when IBM SPSS has performed the requested statistical analysis (or other operations such as saving the data file). It contains the results of the procedure. This file type uses the extension **.spv** and its icon shows a window with a banner.
- *Syntax File*. This file contains the IBM SPSS computer code (syntax) that drives the analysis. This file type uses the extension **.sps** and its icon shows a window with horizontal lines.

If the extensions do not show on your screen, here is what can be done to show the file extensions. If you are using Windows 7

- select **Control Panel → Folder Options → View Tab**;
- uncheck the checkbox for **Hide extensions for known file types**;
- click **OK**.

Here is what that can be done to show the file extensions in Mac OS X:

- Select **Finder → Preferences → Advanced Tab**.
- Check the checkbox for **Show all filename extensions**.
- Close the window.