SPSS - Statistical Package for Social Sciences

http://www.statisticssolutions.com/spss-statisticalpackageforsocialsciences/

SPSS is a popular statistical analysis software package, which stands for *Statistical Package for Social Sciences*. It is one of the more popular tools in contemporary statistical analysis due to its easy to use Graphical user interface, although it offers a wide range of capabilities ranging from add-on modules to add-on packages such as Amos and Clementine. SPSS was first developed in 1968 and has since been used extensively in industry and university research applications.

SPSS, like many other tools out there such as E-views, Stata, MStat and SAS, offers the basic capability of descriptive statistics, regression and other related tools in the base package, to serve its most common applications. In addition, through various add on modules, it can cater to the more advanced needs of high end multivariate analysis, neural networks, conjoint analysis, etc. it offers the convenience of automating several tasks such as data cleansing and organizing, along with creating charts and other types of output. It also allows for automation of tasks such as data coding, missing values analysis and import/export (from tools such as excel).

The SPSS screen offers two viewing modes; one with the data entry screen where entered or imported data are displayed. The labels row, unlike in excel, is displayed separately as a grayed out area. The editing of the variables themselves takes place in the other display called the 'Variable View'. has two view options one is data view where data entry occur. The second view is variable view where we can see the properties of the variable(s), including name, variable type (string, date, numeric, etc.), variable length (width of the column), label, alignment, etc. as an analyst, one of the key advantages of SPSS is the ability to simply open an excel file in its own screen and edit information, without having to go through a complex import/export process. It also has the inherent windows properties such as cut, copy, paste, find, replace, etc., which makes it easy for a non-SPSS user to gain familiarity with the system, particularly if one has experience using MS Office tools.

The key selling point of SPSS is its expansive data analysis options. A wide range of data analysis functions can be performed using SPSS, including hypothesis testing, frequencies, crosstabs, T-test, ANOVA, correlation, _ (linear as well nonlinear), cluster analysis, factor analysis, discriminant analysis, missing value analysis, time series forecasting etc. however, what makes it even better is how these functions are automated to the point that one need simply select the relevant variables and corresponding applications for output and analysis (where necessary), and SPSS does the rest. In the context of SPSS, it's important to mention that using AMOS and Clementine, two of its' most popular add-on packages (not modules), one can access the high end functionality within SPSS. While Amos is used for Structured Equation modeling and Path analysis, Clementine is a high end data mining package. Amos is probably one of the simplest and easiest to use Path analysis softwares available. Each chain of variables can be dynamically 'graphed' without going into programming, with the results available near-on-the-fly. Clementine offers

There are several other packages in the market which are strong competition to SPSS in terms of functionality. Despite being a powerful software, SPSS is not without its shortcomings. For instance, when it comes to time series analysis, SPSS offers limited capabilities. Similarly, MATLAB is a powerful mathematical package used where programming needs are extensive.

SPSS vs. SAS

SAS is another leading statistical package with extensive programming capabilities. Unlike SPSS, SAS does not offer the easy to use point-and-click interface as extensively, although for programming needs, SAS is considered a more powerful tool. It was preferred over SPSS historically due to the ease of programming, which in SPSS was considered far more complex and difficult. However, the modern versions of SPSS command a lot more respect in terms of programming capability.

Time series analysis is another function which is much more extensive in SAS. However, SAS offers the flexibility to perform a variety of functions which may or may not be possible through SPSS.
