

Defining the Properties of the Data:

After loading the data, you might want to include the variable names for each of the variables. It can be done by clicking variable view on the bottom left corner and you will see a table like the above picture. Basically, put the variable name in the "Name" column.

"Type" is the type of a variable. It might be numeric, characters, or date.

"Width" is the width of a variable. For example, if you have a data "15.69", width should be specified to 4.

"Decimals" is the number of decimal points in a variable. For example, if you have a data point "16.2321", if decimals is specified as 2, then the data would be truncated to "16.23".

Problem with Missing value:

Missing values are generally ignored by SPSS when analysis is done. A missing value is denoted as "." in SPSS.

Replacing Missing value:

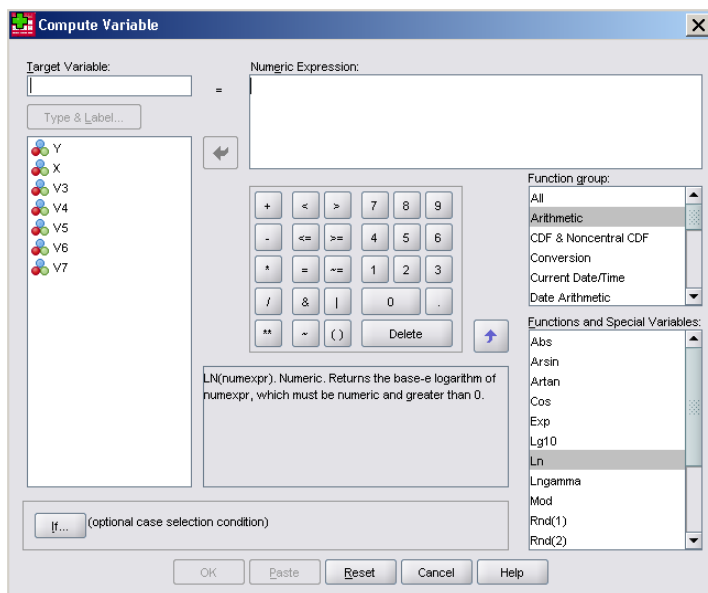
Missing values can be easily replaced by using the command in SPSS.

Transform > Replace Missing Values...

General Data Manipulation:

In order to transform or manipulate the data, we can click transform on the menu bar. Then, click on the compute function.

Transform>Compute



Target Variable is the variable that stores the new transformed value. If a new variable name is desired, put on a name other than the listed variable names below

the target variable command box. For example, if Box-Cox transformation of $\lambda=0$ is needed and the transformed data should store into the same Y variable, Target Variable should be Y and Numeric Expression should be $\ln(Y)$. One can choose math, statistics, conversion, and any other function in Function group.

After typing out everything accordingly, simply click the OK button on the bottom left corner and the data will be transformed accordingly.

Transposing Matrices:

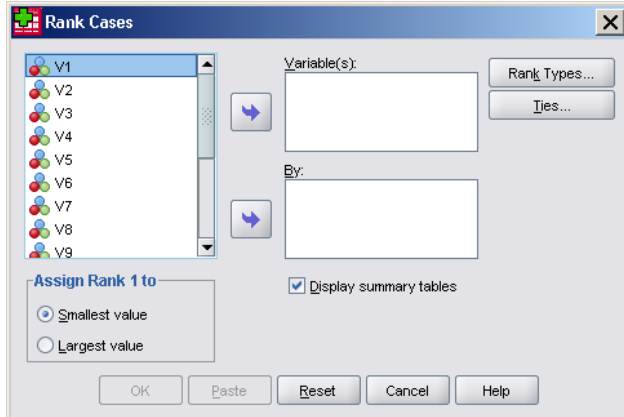
Data > Transpose...

After clicking the above command, simply choose the variable that you would like to transpose.

Ranking Data:

Data can be ranked easily using SPSS function:

Transform > Rank Cases...

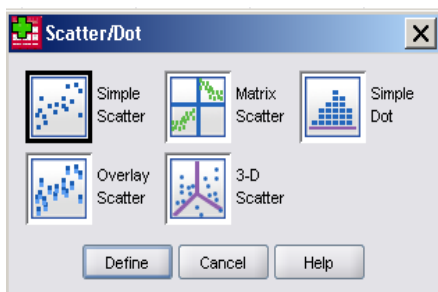


Simply choose a variable you would like to rank either from smallest value to largest value or largest value to smallest value.

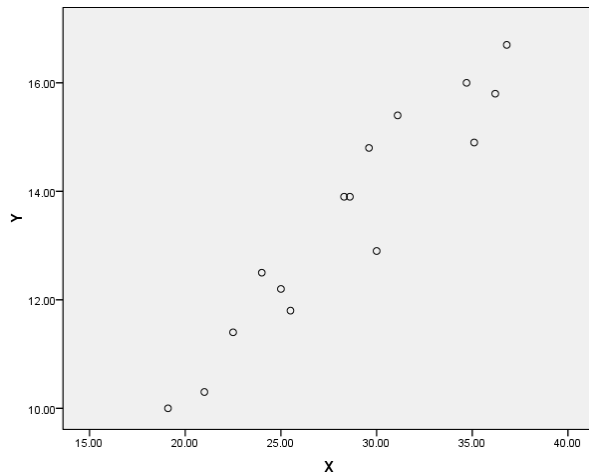
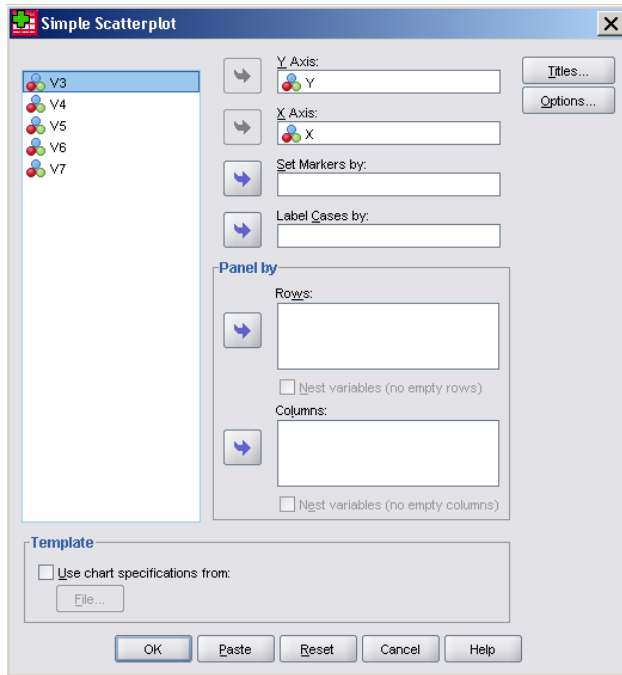
Model Diagnostic:

We usually do model diagnostic before we fit the model. SPSS can generate plot easily and intuitively simply by clicking the following functions on the menu bar.

Graphs>Legacy Dialogs > Scatter/Dot...



One can choose the listed scatter plot above. For simple linear regression, choose simple scatter plot. For multiple linear regressions, choose the Matrix Scatter to generate a scatter plot matrix. Simply input the desirable variables into Y Axis and X Axis and a scatter plot will be produced.



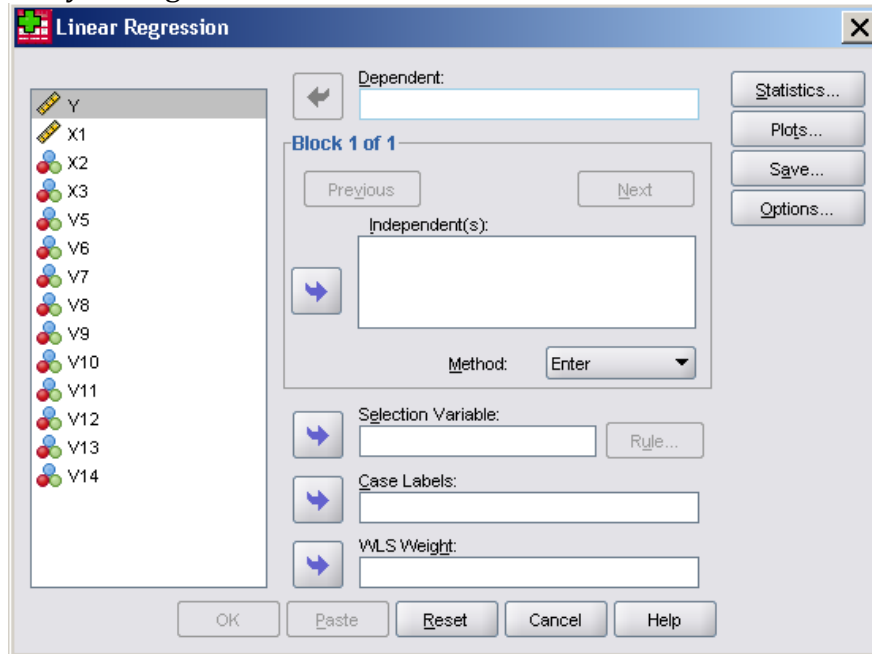
All other plots can be generated intuitively by going to the menu bar:
Graphs > Legacy Dialog > ...

However, be aware that in order to generate QQplots, you have to go:
Analyze > Descriptive Statistics > Q-Qplots

Multiple Linear Regression Modeling:

Based on the above method, we load a dataset for multiple linear regression analysis (Not shown). We further define the four variables loaded as Y, X1, X2, X3 using the method shown above. In order to fit a linear regression model, we can do it by clicking

Analyze>Regression>Linear...



Input the dependent variable and the independent variables respectively. Here, the dependent variable is the variable that we are trying to “predict”. Then click the OK button on the bottom left corner.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.826 ^a	.682	.659	10.05798

a. Predictors: (Constant), X3, X1, X2

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9120.464	3	3040.155	30.052	.000 ^a
	Residual	4248.841	42	101.163		
	Total	13369.304	45			

a. Predictors: (Constant), X3, X1, X2

b. Dependent Variable: Y

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	158.491	18.126		8.744	.000
	X1	-1.142	.215	-.591	-5.315	.000
	X2	-.442	.492	-.111	-.898	.374
	X3	-13.470	7.100	-.234	-1.897	.065

a. Dependent Variable: Y

These are the results of the linear regression analysis. Interpretations of the results are similar to many other statistical packages and hence, would not be explained here. Please refer to <http://myweb.uiowa.edu/swwood/tutorial.pdf> for explanation of similar results.

Other models can be easily fitted by clicking
Analyze > ...

For example,
Chi Square analysis:
Analyze > Descriptive Statistics > Crosstabs...

Mixed models analysis:
Analyze > Mixed Models > Linear...

Non-linear Model Analysis:
Analyze > Regression > Nonlinear...

Logistic Regression Analysis:
Analyze > Loglinear > logit...

Repeated Measure Model Analysis:
Analyze > General Linear Model > Repeated Measures...

Factor Analysis:
Analyze > Dimension Reduction > Factor...

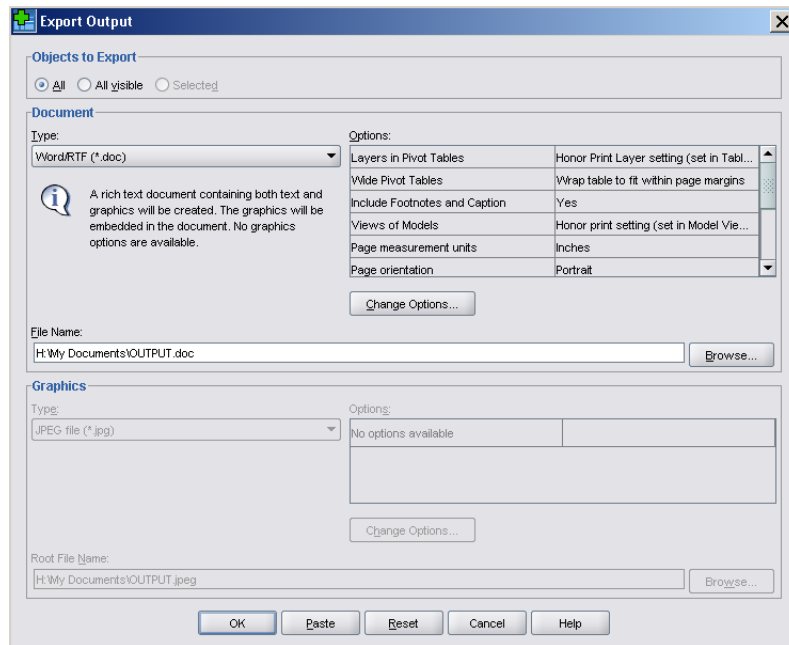
T-test:
There are three different T-tests in SPSS:
Analyze > Compare Means > One-Sample T test...
Analyze > Compare Means > Independent-Samples T test...
Analyze > Compare Means > Paired-Samples T test...

One-way ANOVA:
This test is used to test if the population means of two or more variables are the same.

Analyze > Compare Means > One-Way ANOVA...

Export Results:

SPSS output can be exported into many other applications such as Microsoft Word, Microsoft Excel, and databases. Each of the output can either be copied directly or exported using SPSS options. Copying directly and pasting the tables and graphs to Microsoft Word is trivial. Here, explanations on exporting the entire output window are provided. The whole output can be exported by clicking the export option. Right click on the output > export



You can choose the type of documents to be exported under the Document Tab as shown above. Then, you can specify the filename on the box "File Name". For example, to export a file as a Microsoft Word document file, I can simply choose the option as the picture shown above and export my file as OUTPUT.doc.

References:

"Introduction to SPSS." *Statistics Outreach center Short Course*. Web. 28 Apr. 2010. <<http://myweb.uiowa.edu/swwood/tutorial.pdf>>.

Samuel, John. "Getting Started with SPSS for Windows." *Indiana University*. Web. 30 Apr. 2010. <<http://www.indiana.edu/~statmath/stat/spss/win/index.html>>.