NuMBerS numerical methods for biosciences students

SPSS 13.0 HELP SHEET: Regression

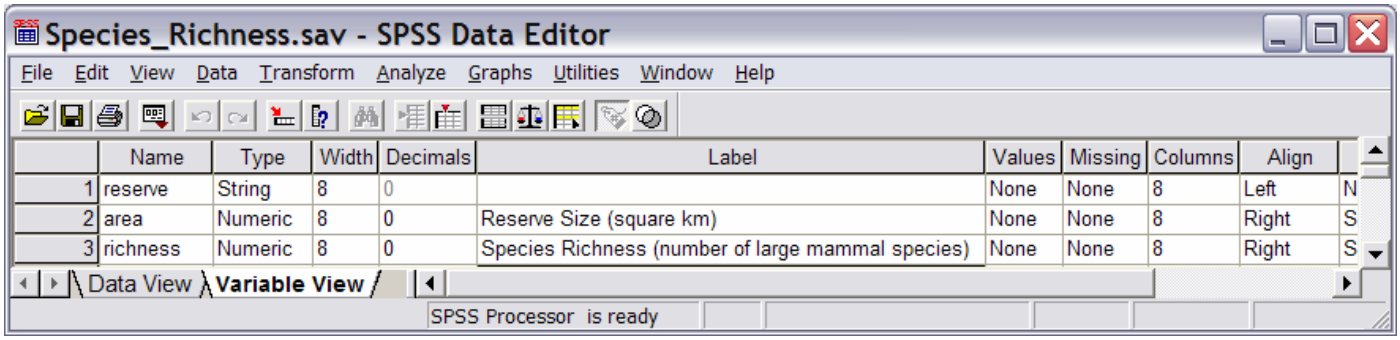
CONTENTS

1. How to enter data to do a Regression.

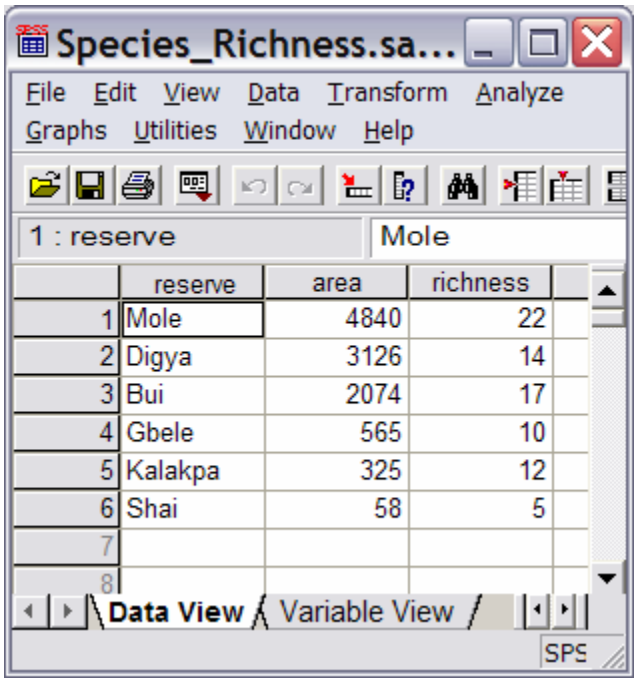
For general advice on data entry see the "**How to enter data into SPSS"** help sheet.

Data used in correlations are related: Data from the dependent variable goes in one column and data for the independent variable in another column: Related data points must be in the same case (i.e., row). In this example, the dependent variable is *richness* and the independent variable is *area*. *Richness* (variable label = Species Richness) is measured as the number of mammalian species and is a scale level of measurement. *Area* (variable label = reserve size) is measured as square kilometres which is scale level. *Reserve* indicates the identity of the Game Reserve in Ghana where the data were collected and is not involved directly in the analysis.

Variable View:



Data View



Dawn Hawkins: Anglia Ruskin University, February 2007

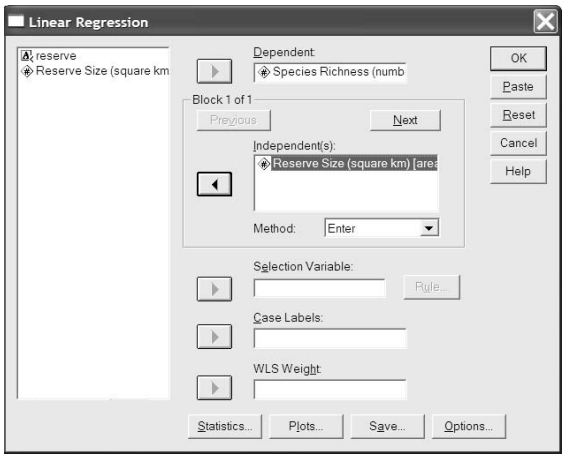
2. How to do a Regression.

To get SPSS to conduct a regression:

Open your data file.

Select: Analyze – Regression – Linear...

This will bring up the Linear Regression window:



Select the dependent variable and send it to the **Dependent List** box (in the example above this is *Species Richness*). Select the independent variable, and send it to the **Independent(s)** box (in the example above this is *Reserve Size*). Click OK.

The key elements of the output are:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.884[a]	.782	.727	3.05714

a. Predictors: (Constant), Reserve Size (square km)

Coefficient of determination R^2

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	133.949	1	133.949	14.332	.019[a]
	Residual	37.384	4	9.346		
	Total	171.333	5			

a. Predictors: (Constant), Reserve Size (square km)

b. Dependent Variable: Species Richness (number of large mammal species)

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Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.310	1.822		4.562	.010
	Reserve Size (square km)	.003	.001	.884	3.786	.019

a. Dependent Variable: Species Richness (number of large mammal species)

Model intercept *Model slope*

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