

Summary (descriptive) statistics

EXAMPLE 3.2. Length (mm) of two-spot ladybirds (*Adalia bipunctata*)

BOX 3.1. How to calculate a standard deviation and variance for normally distributed (parametric) data

In this section we explain how you can use SPSS to work out terms such as the mean, median, mode, and variance. Our explanation is short, so unlike other chapters on this website we have not followed the section headings that are in the book. Read through the complete explanation and you will quickly locate the critical step to calculate any one (or more) of

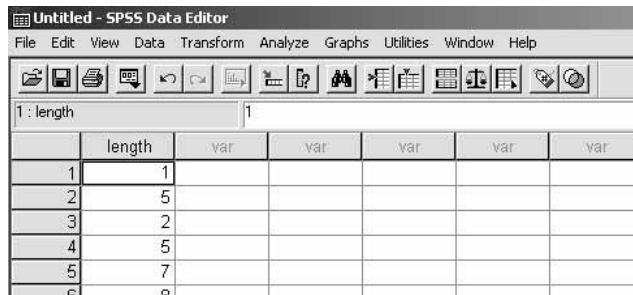
EXAMPLE 3.2. Length (mm) of two-spot ladybirds (*Adalia bipunctata*)

An investigator was interested in the length of two-spot ladybirds (*Adalia bipunctata*). In an observational investigation she measured the length (mm) of 50 ladybirds collected at random from a garden (Table 3.8).

Table 3.8. The length (mm) of 50 *Adalia bipunctata* sampled in a garden

Length of <i>Adalia bipunctata</i> (x)									
1	5	2	5	7	8	3	6	7	4
4	5	6	4	5	5	7	5	3	5
4	5	1	7	9	2	6	5	6	3
3	6	8	6	4	6	6	8	5	6
7	4	8	9	5	4	3	4	2	5

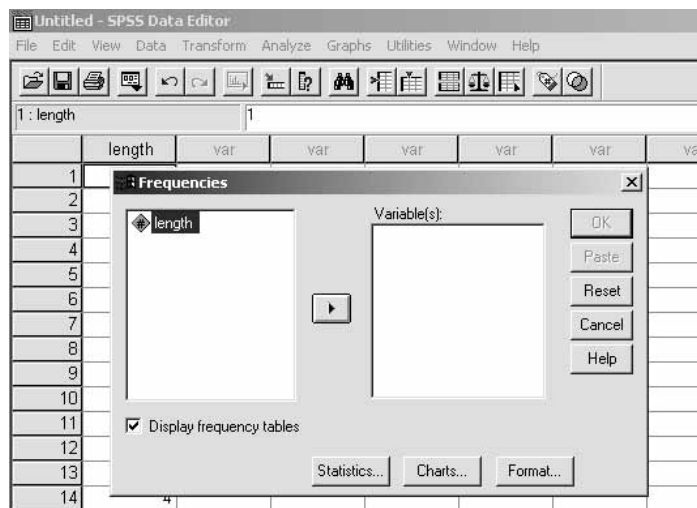
(v) Change to 'Data View' (use the tabs at the bottom left) and insert the data into the first column.



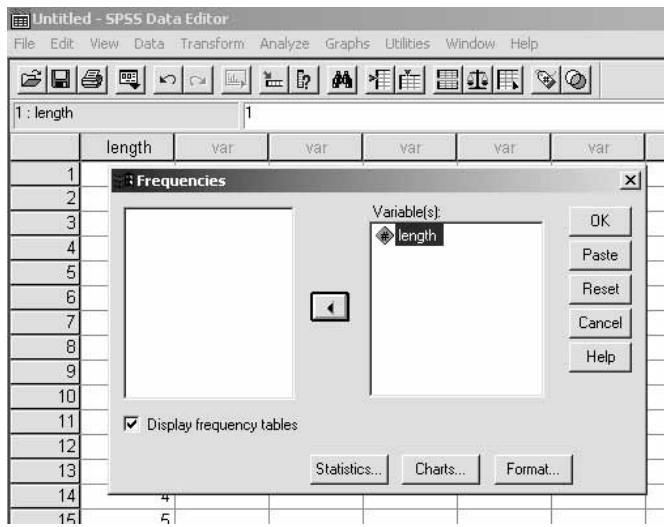
	length	var	var	var	var	var
1	1					
2	5					
3	2					
4	5					
5	7					

Step 2. Analyse the data.

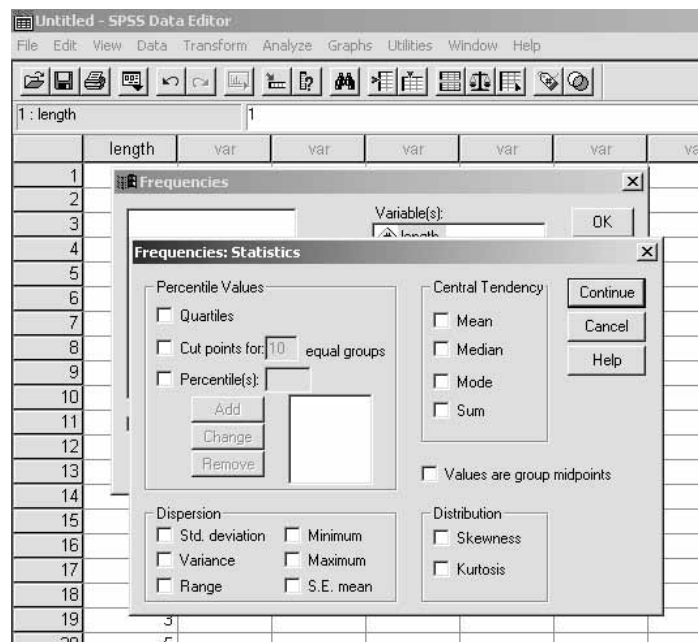
(i) From the drop-down menus at the top of the screen, select 'Analyze', 'Descriptive Statistics' and 'Frequencies'. (If you select 'Descriptives', you get a smaller range of options.) You should get a dialogue box as below:



(ii) Click on the arrow to transfer the variable 'length' into the 'Variable(s)' window. (If you have more than one variable, you can transfer one or more for analysis by highlighting and transferring them in turn.)



(iii) Click on the 'Statistics' button. This will give you another window in which you can select the statistics you wish to calculate.



(iv) Select the statistics you want to calculate, and click on the 'Continue' button. The second window will close, and return you to the 'Frequencies' screen. Click on 'OK', and your results will appear in another window:

The screenshot shows the SPSS Data Editor window with a dataset named 'length' containing 29 rows of data. The 'Output2 - SPSS Viewer' window is open, displaying the 'Frequencies' output for the variable 'LENGTH'. The output includes a list of statistics and their corresponding values.

Statistics		
LENGTH		
N	Valid	50
	Missing	0
Mean		5.08
Std. Error of Mean		.274
Median		5.00
Mode		5
Std. Deviation		1.936
Variance		3.749
Skewness		-.047
Std. Error of Skewness		.337
Kurtosis		-.294
Std. Error of Kurtosis		.662
Range		8
Minimum		1

The full output can be viewed by scrolling down within the right-hand pane.

Frequencies

Statistics

LENGTH

N	Valid	50
	Missing	0
Mean		5.08
Std. Error of Mean		.274
Median		5.00
Mode		5
Std. Deviation		1.936
Variance		3.749
Skewness		-.047
Std. Error of Skewness		.337
Kurtosis		-.294
Std. Error of Kurtosis		.662
Range		8
Minimum		1
Maximum		9
Sum		254
Percentiles	10	2.10
	20	3.20
	25	4.00
	30	4.00
	40	5.00
	50	5.00
	60	5.60
	70	6.00
	75	6.00
	80	7.00
	90	8.00

LENGTH

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	2	4.0	4.0	4.0
2	3	6.0	6.0	10.0
3	5	10.0	10.0	20.0
4	8	16.0	16.0	36.0
5	12	24.0	24.0	60.0
6	9	18.0	18.0	78.0
7	5	10.0	10.0	88.0
8	4	8.0	8.0	96.0
9	2	4.0	4.0	100.0
Total	50	100.0	100.0	