

3.8.2. Ranking non-parametric data

BOX 3.3. How to rank data for non-parametric statistics

Step 1. Set up the variable – we will call it ‘size’. When SPSS starts up, transfer to variable view using the tabs at the bottom left of the screen. You should see something like this:

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1										
2										
3										

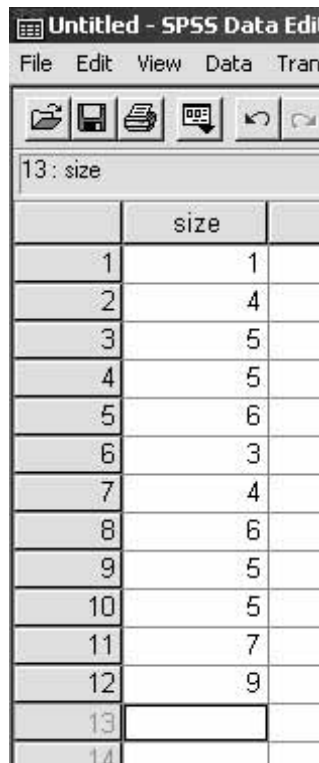
Type ‘size’ into the first cell of row 1. The other properties of the variable will be give default values.

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1	size	Numeric	8	2		None	None	8	Right	Scale
2										
3										

Since our data are integers, it is worth changing the number of decimal places property to zero. Click in the ‘Decimals’ cell of row 1, and use the ‘up’ and ‘down’ arrows that appear in order to change the property to zero.

	Name	Type	Width	Decimals	Label
1	size	Numeric	8	0	
2					
3					

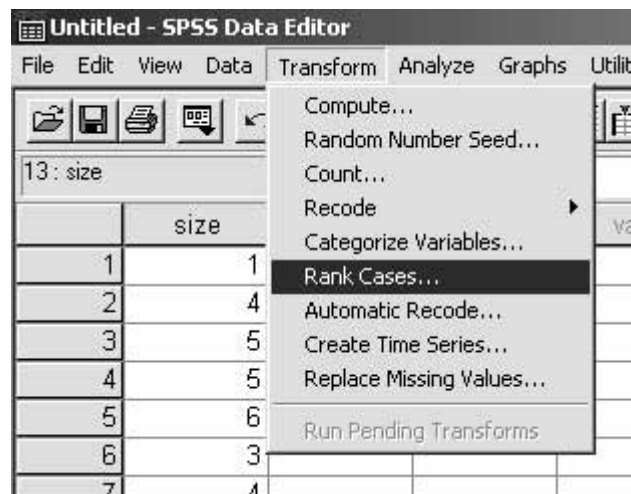
Step 2. Enter the data. Transfer to data view using the tabs at the bottom left, and type the numbers into column 1.



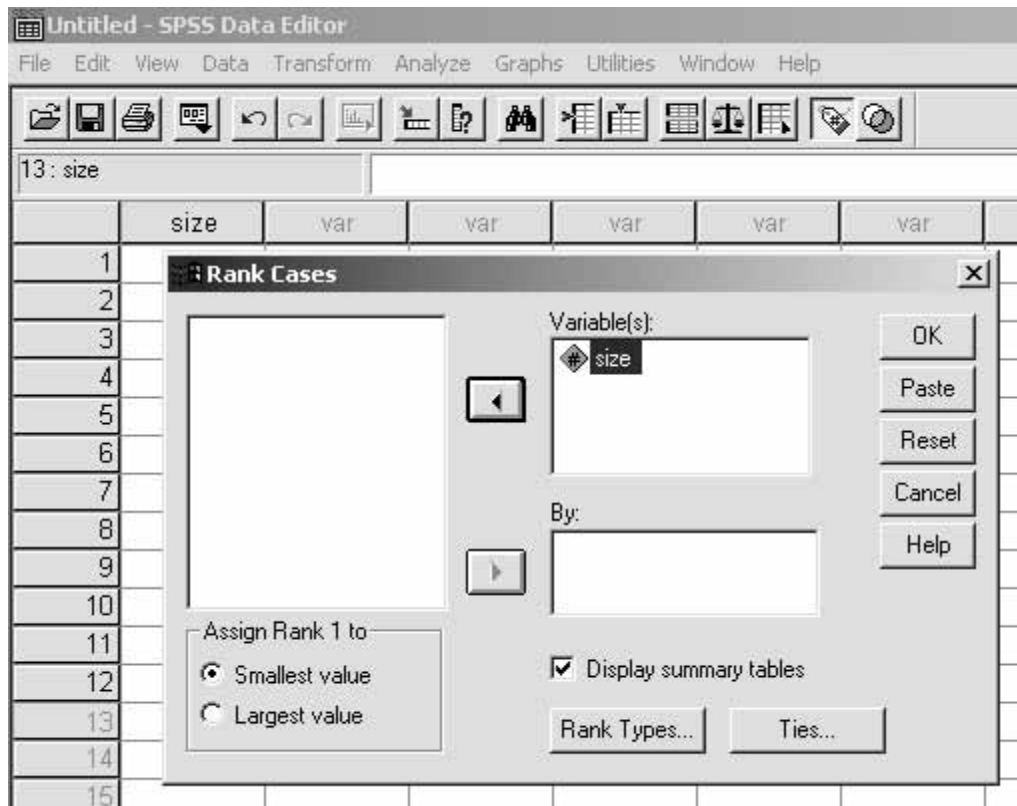
The screenshot shows the SPSS Data Editor window titled 'Untitled - SPSS Data Editor'. The menu bar includes File, Edit, View, Data, and Transform. Below the menu bar is a toolbar with icons for opening, saving, printing, and undo. The main window displays a dataset with 14 rows and one column named 'size'. The data values are as follows:

	size
1	1
2	4
3	5
4	5
5	6
6	3
7	4
8	6
9	5
10	5
11	7
12	9
13	
14	

Step 3. Rank the data. Go to 'Transform', 'Rank Cases'.

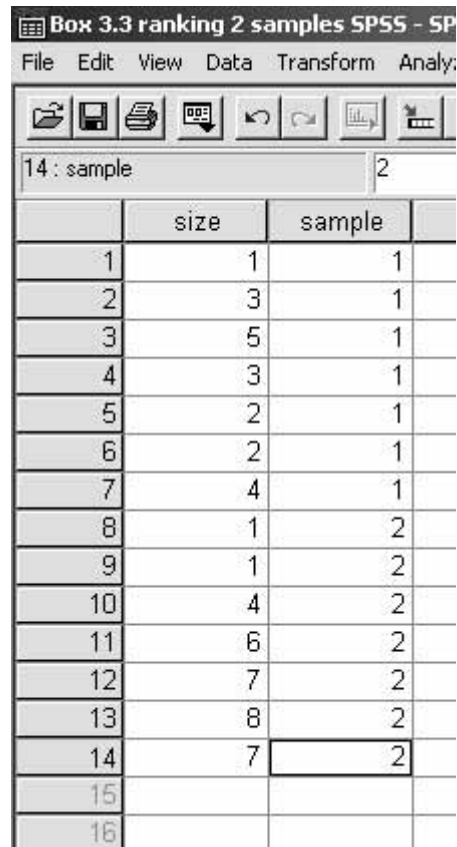


Click on 'size' to highlight it, then click on the arrow to transfer it across to the 'Variable(s)' window.



Click on 'OK', and a new variable will be generated containing the ranks of the variable 'size'. Note that tied values are given the mean rank of all the places occupied by the tie.

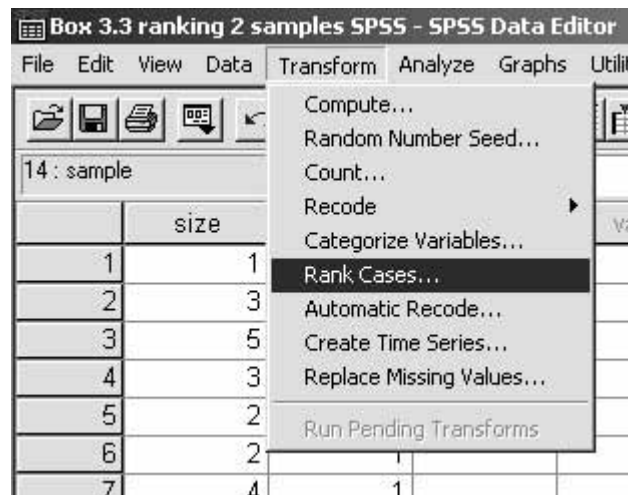
Step 5. Enter the data. Transfer to data view using the tabs at the bottom left, and enter the data. The values in the 'sample' column will be 1 or 2.



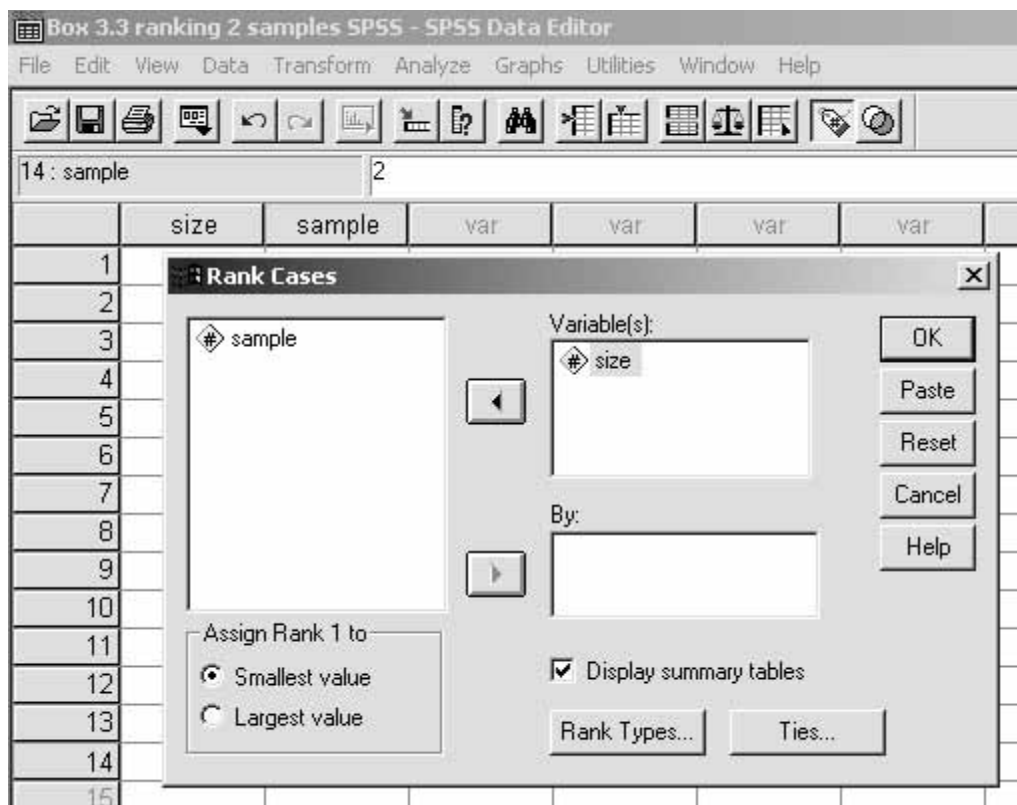
The screenshot shows the SPSS data editor window titled "Box 3.3 ranking 2 samples SPSS - SP". The menu bar includes "File", "Edit", "View", "Data", "Transform", and "Analy:". Below the menu bar is a toolbar with icons for file operations and data manipulation. The active window shows a data grid with the following data:

	size	sample
1	1	1
2	3	1
3	5	1
4	3	1
5	2	1
6	2	1
7	4	1
8	1	2
9	1	2
10	4	2
11	6	2
12	7	2
13	8	2
14	7	2
15		
16		

Rank the complete set of measurements as before: go to 'Transform', 'Rank Cases'.



Click in 'size' to highlight it, then click on the arrow to transfer it into the 'Variable(s)' window.



Click on 'OK', and a new variable will be produced with the rankings.

Box 3.3 ranking 2 samples SPSS - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilit

14 : sample 2

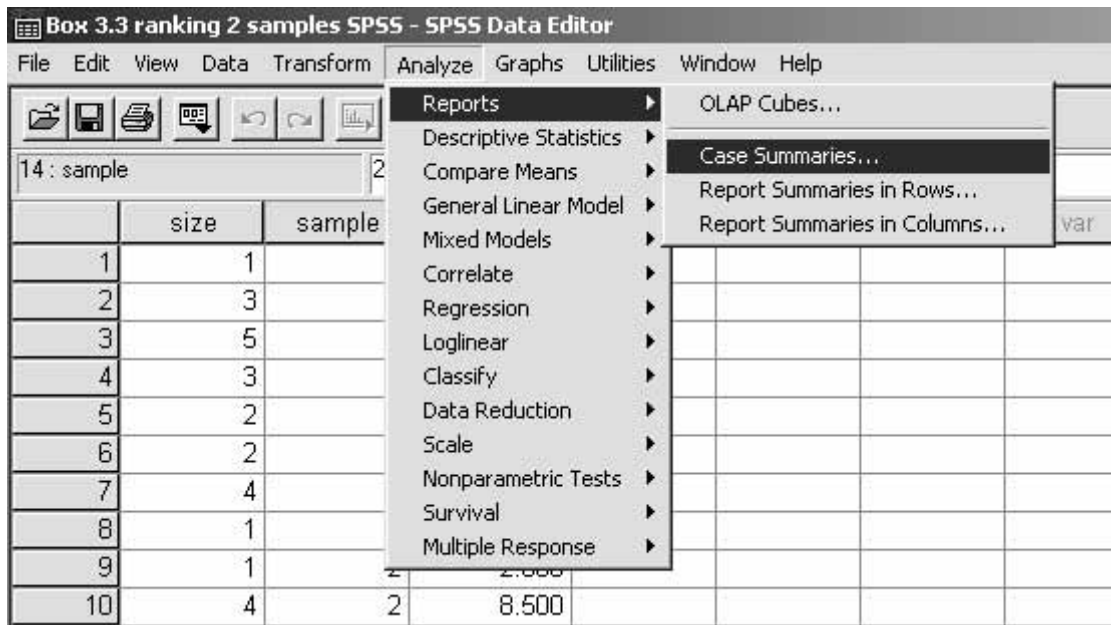
	size	sample	rsize
1	1	1	2.000
2	3	1	6.500
3	5	1	10.000
4	3	1	6.500
5	2	1	4.500
6	2	1	4.500
7	4	1	8.500
8	1	2	2.000
9	1	2	2.000
10	4	2	8.500
11	6	2	11.000
12	7	2	12.500
13	8	2	14.000
14	7	2	12.500
15			

You will also get an output window containing a summary of what has happened.

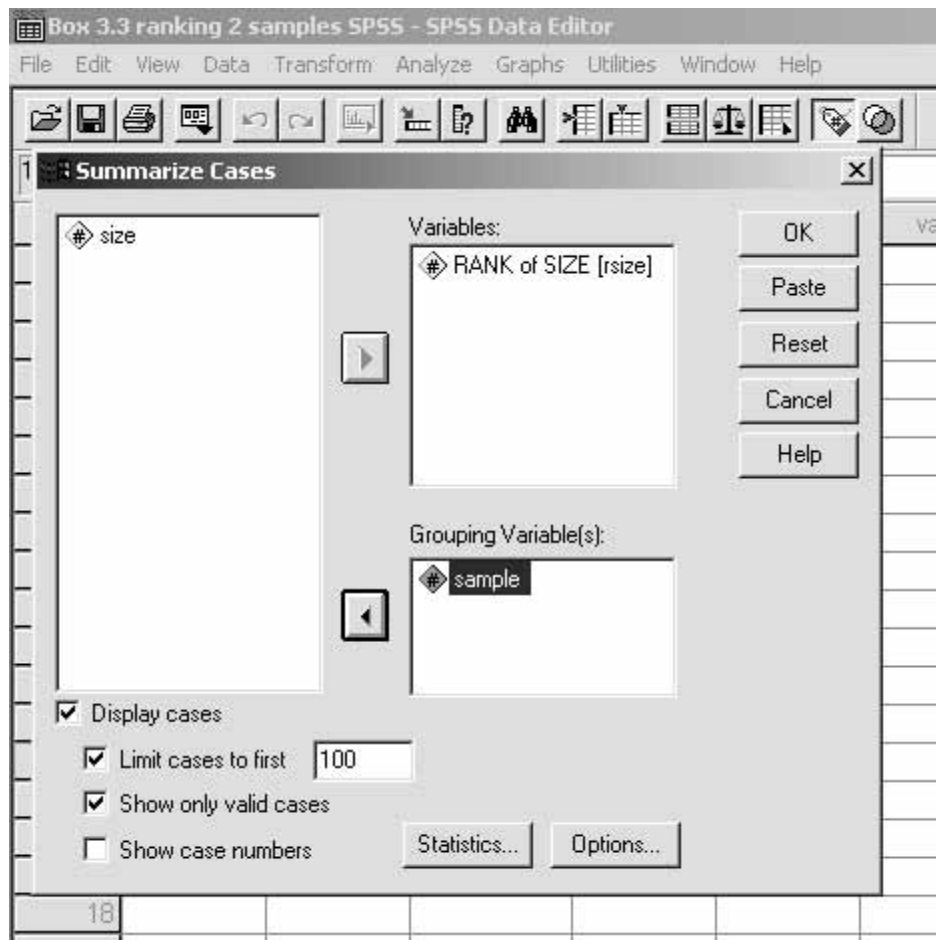
```

From      New
variable  variable  Label
-----  -
SIZE      RSIZE     RANK of SIZE
    
```

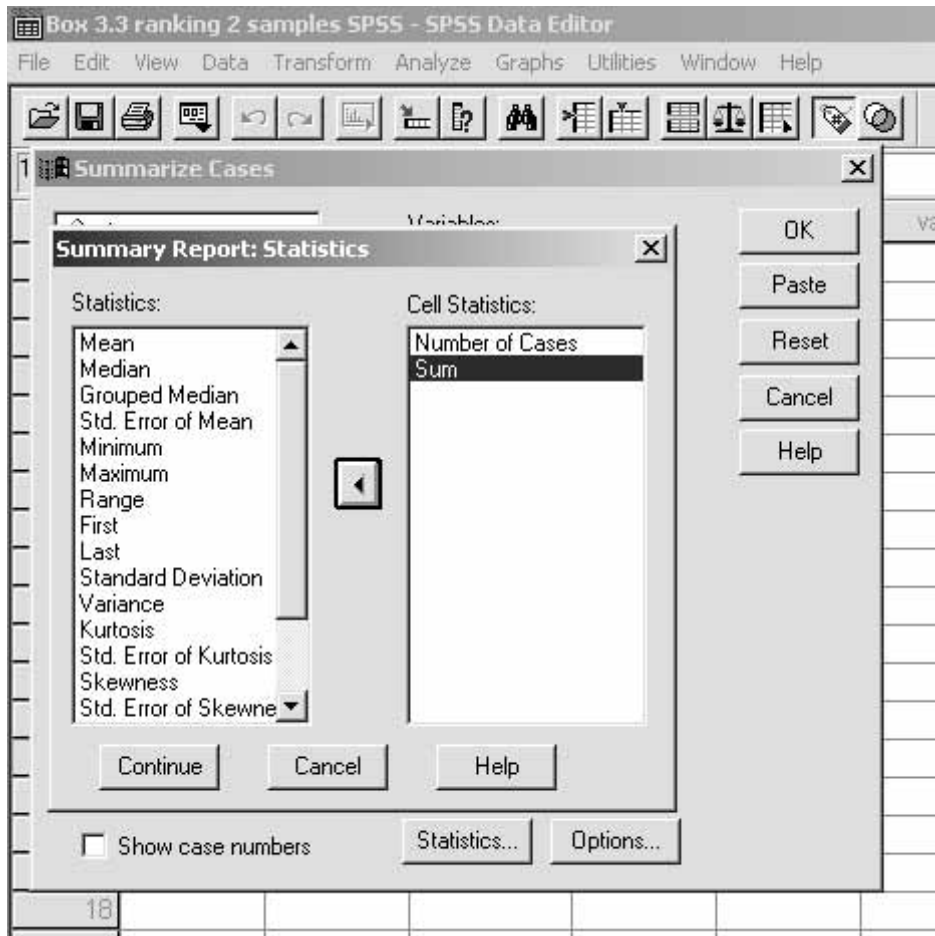
To sum the ranks, go to 'Analyze', 'Reports', 'Case Summaries'.



Select 'RANK of SIZE [rsize]' by clicking on it, and transfer it to the 'Variables' window by clicking on the appropriate arrow. In the same way, transfer 'sample' to the 'Grouping Variable(s)' window.



Click on 'Statistics'. Highlight 'Sum' by clicking on it, and transfer it to the 'Cell Statistics' window by clicking on the appropriate arrow.



Click on 'Continue', then click on 'OK'. The output will appear in a separate window.

Summarize

Case Processing Summary(a)

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
RANKof SIZE *SAMPLE	14	100.0%	0	.0%	14	100.0%

a Limited to first 100 cases.

Case Summaries(a)

			RANK of SIZE
SAMPLE 1	1		2.000
	2		6.500
	3		10.000
	4		6.500
	5		4.500
	6		4.500
	7		8.500
	Total	N	7
		Sum	42.500
2	1		2.000
	2		2.000
	3		8.500
	4		11.000
	5		12.500
	6		14.000
	7		12.500
	Total	N	7
		Sum	62.500
Total	N		14
	Sum		105.000

a Limited to first 100 cases.

We can see that the sum of the ranks for sample 1 is 42.5, and for sample 2 it is 62.5.