

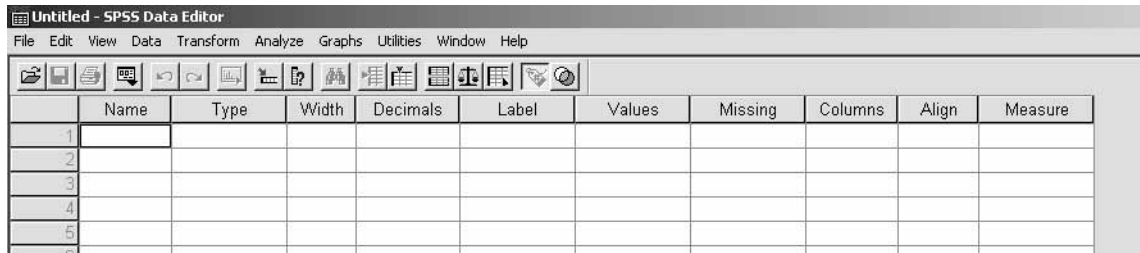
8.2. Wilcoxon's matched pairs test

EXAMPLE 8.1. Enjoyment of consuming chocolate at two times in the day

BOX 8.2. How to carry out a Wilcoxon's matched pairs test

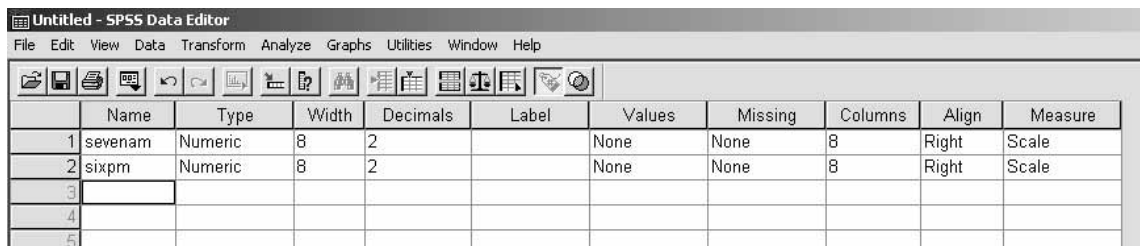
Step 1. Set up the variables

When SPSS starts up, select 'Variable View' using the tabs at the bottom left. You should get something like this:



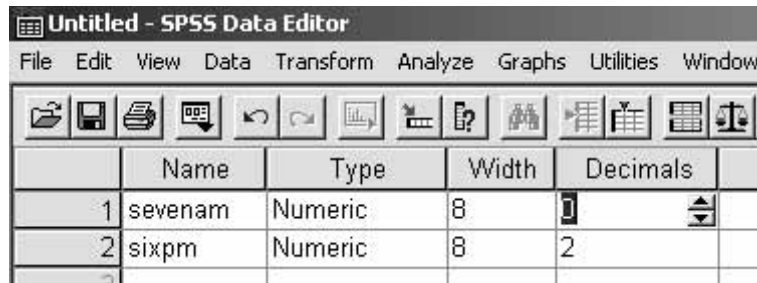
	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1										
2										
3										
4										
5										

For the first variable name, type in 'sevenam' (SPSS will not accept variable names unless the first character is a letter), and for the second 'sixpm'. Default properties will be set for each variable.



	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1	sevenam	Numeric	8	2		None	None	8	Right	Scale
2	sixpm	Numeric	8	2		None	None	8	Right	Scale
3										
4										
5										

The chocolate enjoyment ratings are integers, so change the 'Decimals' property of both variables to zero. Click in the 'Decimals' cell, and use the 'up' and 'down' arrows that appear at the right-hand side of the cell to make the change.

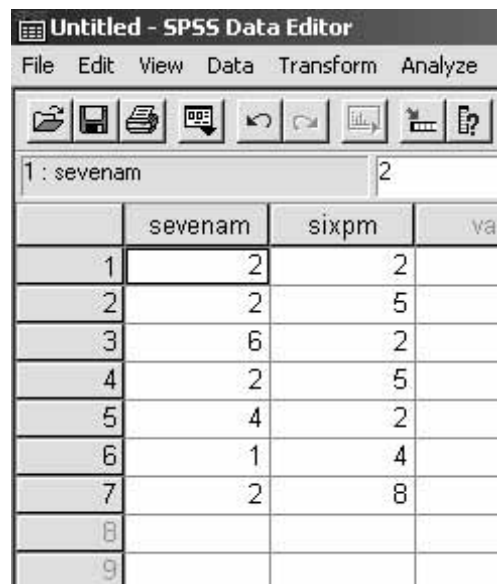


The screenshot shows the 'Untitled - SPSS Data Editor' window with the 'Data View' tab selected. The 'Variable View' tab is active, showing the following table:

	Name	Type	Width	Decimals
1	sevenam	Numeric	8	1
2	sixpm	Numeric	8	2

Transfer to 'Data View' using the tabs at the bottom left.

Step 2. Enter the data.

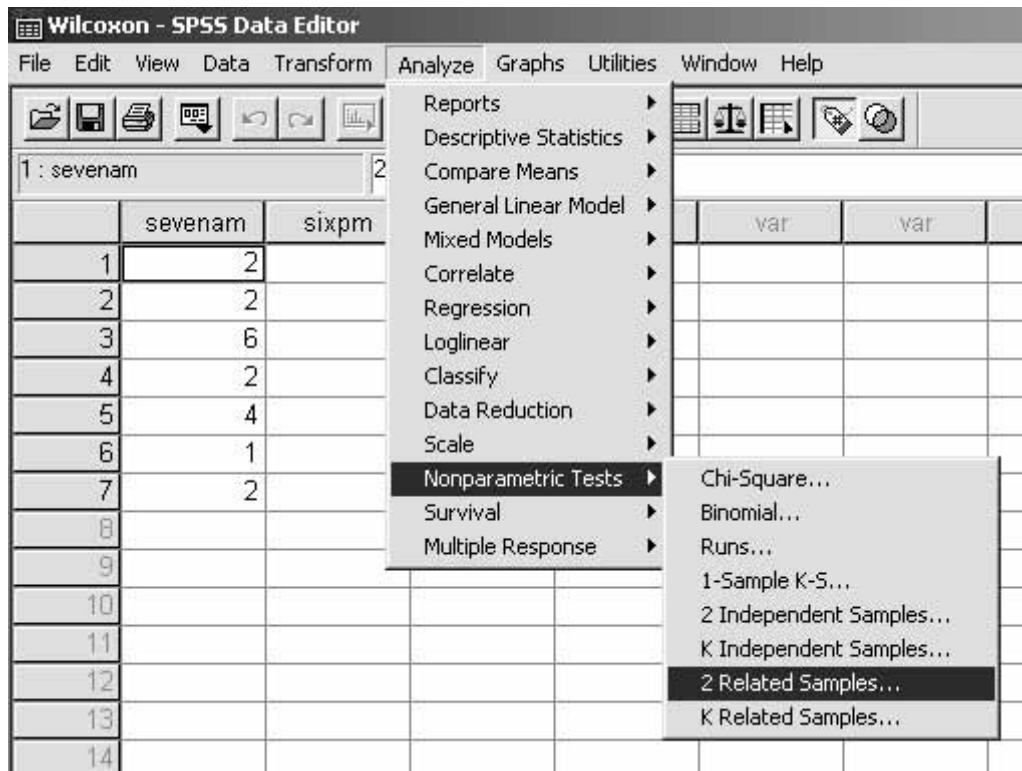


The screenshot shows the 'Untitled - SPSS Data Editor' window with the 'Data View' tab selected. The data is entered as follows:

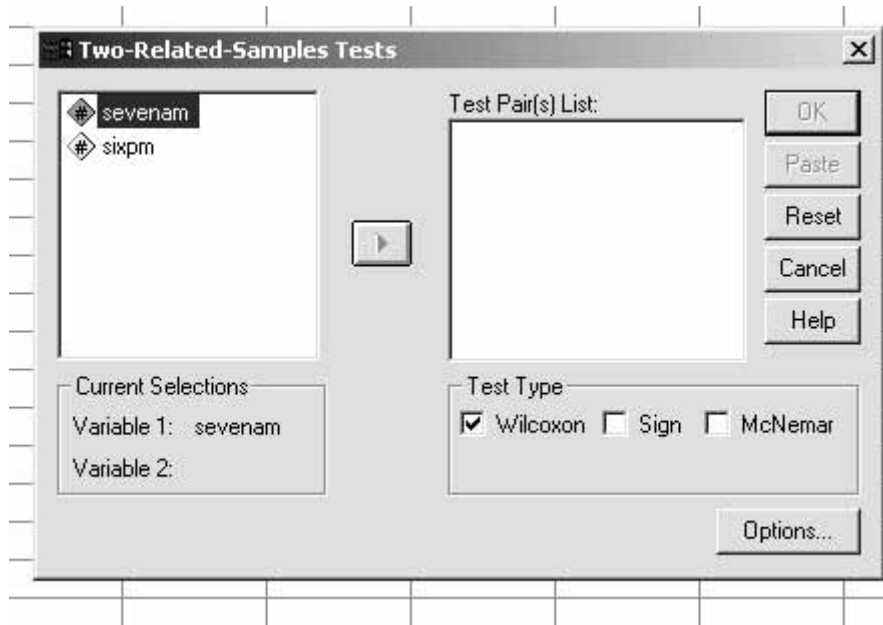
	sevenam	sixpm	var
1	2	2	
2	2	5	
3	6	2	
4	2	5	
5	4	2	
6	1	4	
7	2	8	
8			
9			

Step 3. Perform the test.

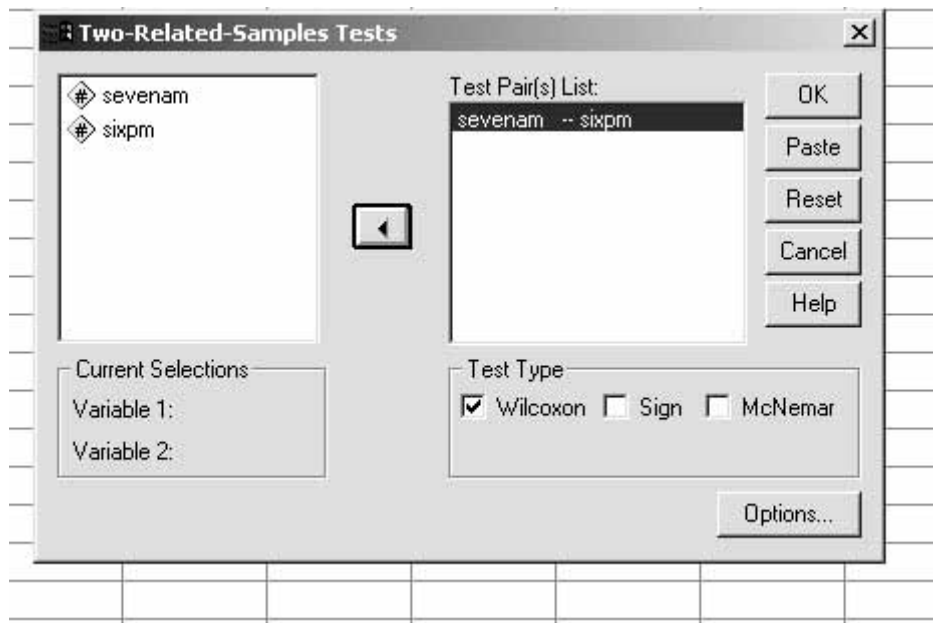
Go to 'Analyze', 'Nonparametric Tests', '2 Related Samples'.



Click on 'sevenam'. It will be registered as 'Variable 1'.



Repeat for 'sixpm' – this will be registered as 'Variable 2'. Now click on the arrow to transfer the pair into the 'Test Pair(s) List'.



Check that 'Wilcoxon' is selected, and click on 'OK'. The results will appear in a separate window.

NPar Tests
Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
SIXPM - SEVENAM	Negative Ranks	2(a)	3.00	6.00
	Positive Ranks	4(b)	3.75	15.00
	Ties	1(c)		
	Total	7		

a SIXPM < SEVENAM

b SIXPM > SEVENAM

c SIXPM = SEVENAM

Test Statistics(b)

	SIXPM - SEVENAM
Z	-.954(a)
Asymp. Sig. (2-tailed)	.340

a Based on negative ranks.

b Wilcoxon Signed Ranks Test

Step 4. Decide what the results mean.

The smallest 'Sum of Ranks' is 6, and the 'Asymp. Sig. (2-tailed)' is 0.34, which is larger than 0.05. Therefore we do not reject the null hypothesis, and conclude that there is no significant difference ($T = 6$, $p = 0.05$) between the **median** chocolate enjoyment scores at 7 a.m. compared with 6 p.m. in a small group of undergraduates.