

## Block 2: Analysing one variable

## Nominal and ordinal variables

## 2.1.2.10 Specimen answer for homework exercise 1

[24 November 2010]

Exemplar: [British Social Attitudes](#) (1989 survey)

## Research questions:

What is the distribution of marital status of the respondent? (Q.900a)

What is the distribution of satisfaction-dissatisfaction with the way the National Health Service runs? (Q.58)

File: [bsa89.txt](#) (raw data from the 1989 British Social Attitudes survey)

**Homework exercise 1:** Create an SPSS saved file containing the correct data for the above two questions from the 1989 British Social Attitudes survey, together with an appropriate data dictionary. (See exercises 2.1.2.3 to 2.1.2.6 on the 1986 survey).

Marital status is asked at Q.900a)

[nominal]

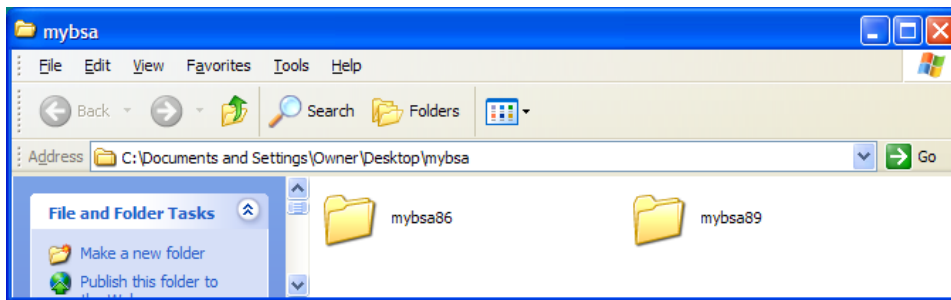
		Col./ Code
- 44 -		
900a)	Can I just check your own marital status? At present are you ... READ OUT ...	1408
	CODE FIRST TO APPLY	
	... married,	1
	living as married,	2
	separated or divorced,	3
	widowed,	4
	or - not married?	5

Satisfaction with "the way NHS runs nowadays" is at Q.72

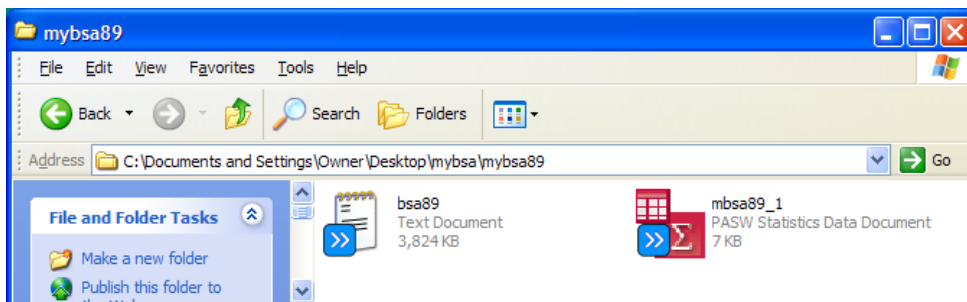
[ordinal]

CARD P		
72.	All in all, how satisfied or dissatisfied would you say you are with the way in which the National Health Service runs nowadays? Choose a phrase from this card.	751
	Very satisfied	1
	Quite satisfied	2
	Neither satisfied nor dissatisfied	3
	Quite dissatisfied	4
	Very dissatisfied	5

Go to your folder **mybsa** and double click on folder **mybsa89**



[If you don't have folders **mybsa** or **mybsa89**, go back to the [Block 2 menu](#), do the housekeeping in **2.1.2.8** and then exercise **2.1.2.9**]



The full pathname for the raw data file (after downloading the file and saving it to **mybsa89**) is:

**'C:\Documents and Settings\Owner\Desktop\mybsa\mybsa89\bsa89.txt'**

There are 23 records per case. All codes are numeric integer. The data are stored as follows:

Satisfaction with the way NHS runs (Q.72; record 7 column 51)  
Marital status (Q900a; record 14, column 8)

According to the *Technical Report*<sup>1</sup> missing values have been coded as follows:

Satisfaction with the way NHS runs 8 Don't know 9 No answer  
Marital status 8 Don't know 9 No answer

Again, it helps to prepare a table with your questions, variable names, data locations and values to be treated as missing: the question number and text can also be used later as variable labels:

	Question	Variable name	Record number	Start column	End column	Missing values
Q.58	Satisfaction with the way NHS runs	v751	7	41	41	8, 9
Q.113b	Marital status of respondent	v1408	14	10	10	8, 9

<sup>1</sup> Lindsay Brook, Bridget Taylor and Gillian Prior, *British Social Attitudes 1989 Survey: Technical report* (Social and Community Planning Research, November 1990)

## Exercise 1:

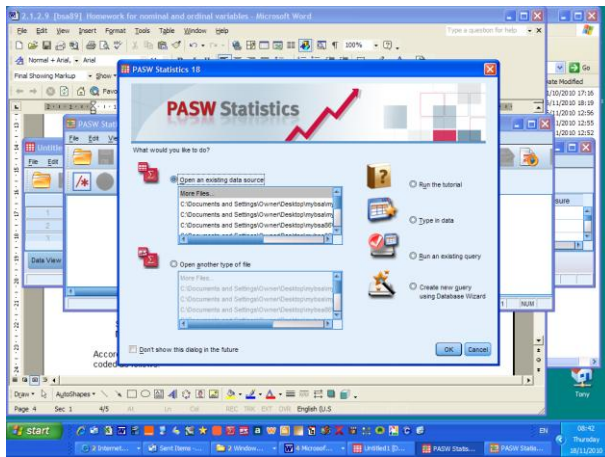
Even though we are only working with two variables, we are going to follow good (professional) practice in file-building and work through this exercise in four steps, saving our work at each step.

- Step 1: DATA LIST
- Step 2: MISSING VALUES,
- Step 3: VARIABLE LABELS
- Step 4: VALUE LABELS

To remind ourselves (and anyone else who reads our syntax files) what it is we think we are doing, we shall also annotate our syntax using **TITLE**, **SUBTITLE**, and **COMMENT**



Call up SPSS by clicking on the icon, or however your local system works:



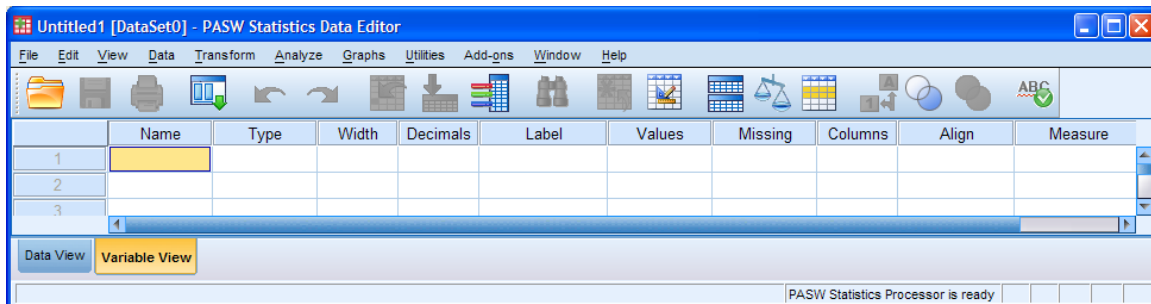
Screenshot after launching SPSS



Opening screen for PASW18

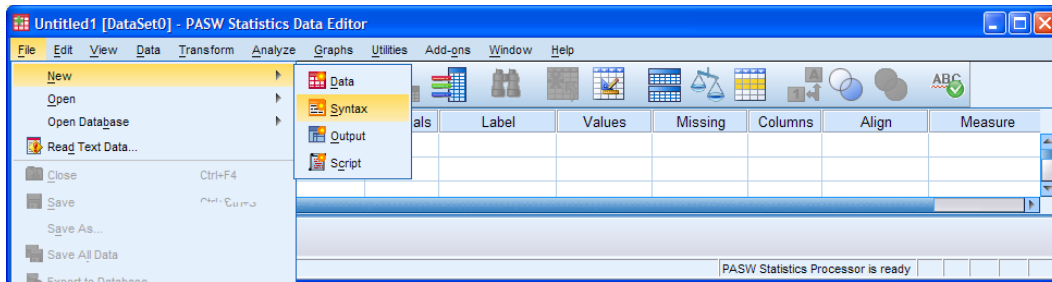
[NB: I have changed my SPSS settings at launch to open a blank syntax editor as well as a blank data editor: this saves having to use **File > New > Syntax** to open a new SPSS syntax editor every time I launch SPSS. From the data editor click on **Edit > Options**. A screen appears with the **General** tab open: check the **Open syntax window at startup** box to open a blank syntax file. I also like to have more than one data editor open at a time: if you want to do the same (and if your version allows it) uncheck the **Open only one data set at a time** box and click on the **Apply** button to save the new settings.]

Click on the **Cancel** button (bottom right) to display the blank Data Editor (behind this pane).

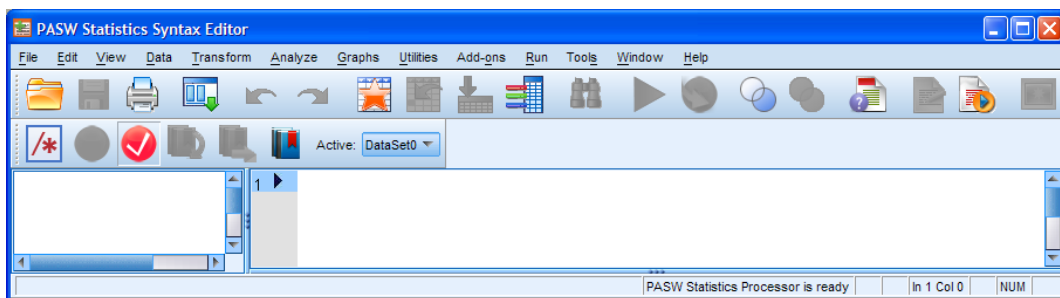


Make sure you are in **Variable View** (this one has been adjusted by shrinking it to three rows)

Click on **File** > **New** > **Syntax**

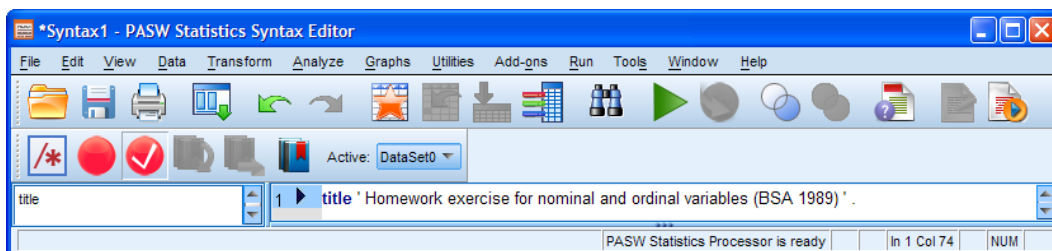


... to open a blank SPSS syntax editor:



**Step 1:** Give your job a **TITLE** : *[limit of 60 printing characters]*

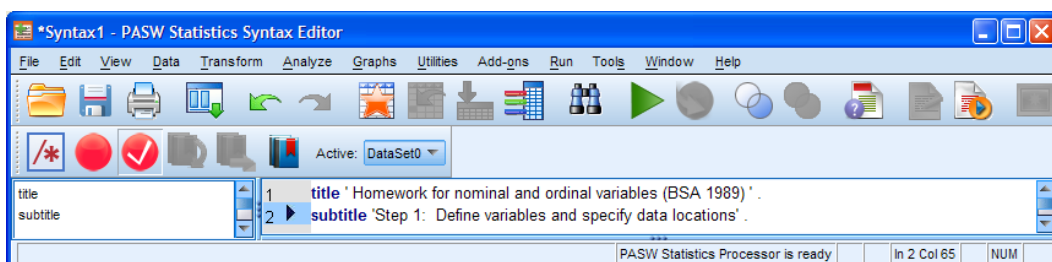
**title ' Homework for nominal and ordinal variables (BSA 1989) ' .**



We are going to build up our data editor one step at a time and save it after each step. To help us keep track of our work we shall annotate the syntax by inserting a **SUBTITLE**<sup>2</sup> before each command and a **COMMENT**<sup>3</sup> after each step reminding us to save the data editor.

Write a **SUBTITLE** for the first step:

**subtitle 'Step 1: Define variables and specify data locations' .**



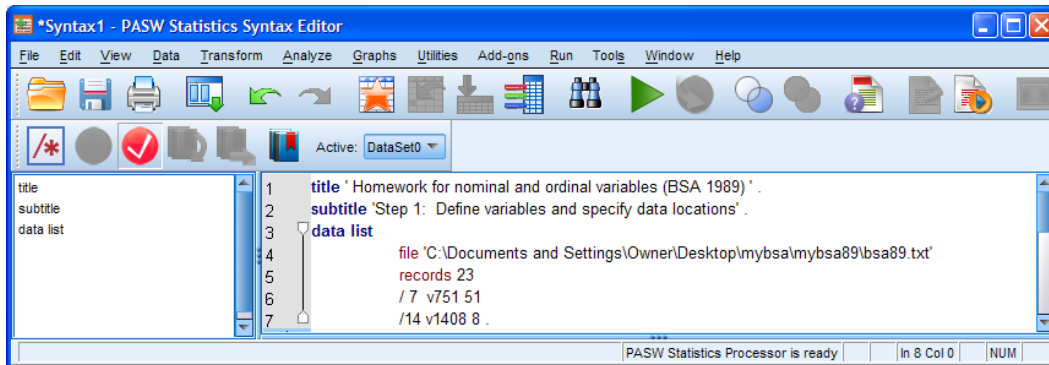
<sup>2</sup> **SUBTITLE** ' < Any text > ' .

<sup>3</sup> **COMMENT** ' < Any text > ' . or use an asterisk instead of **COMMENT** eg \* ' < Any text > ' .

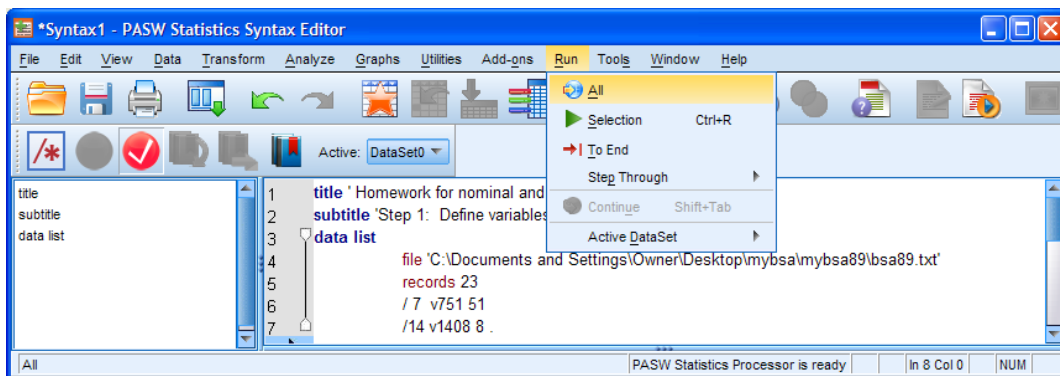
Now write the **DATA LIST** command specifying the pathname of the external raw data file, the number of records per case, and specifying the names and data locations of your two variables:

#### data list

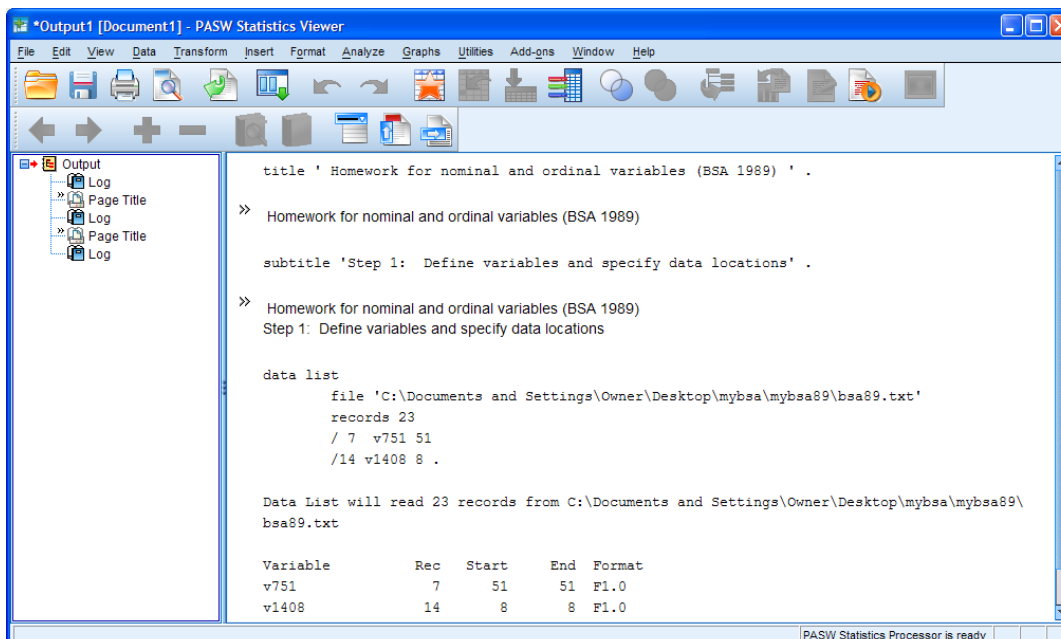
```
file 'C:\Documents and Settings\Owner\Desktop\mybsa\mybsa89\bsa89.txt'
records 23
/ 7 v751 51
/14 v1408 8 .
```



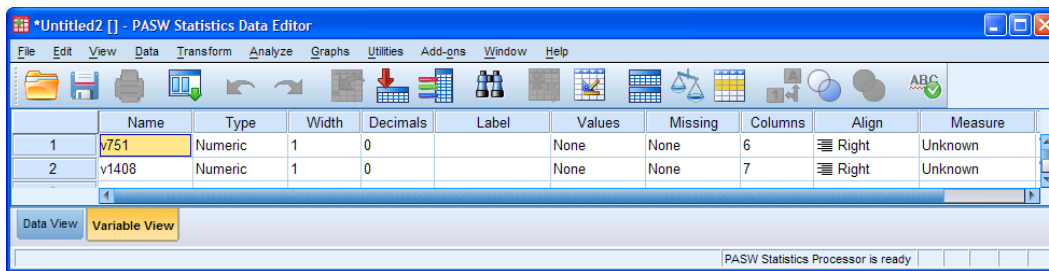
Click on **Run** > **All**



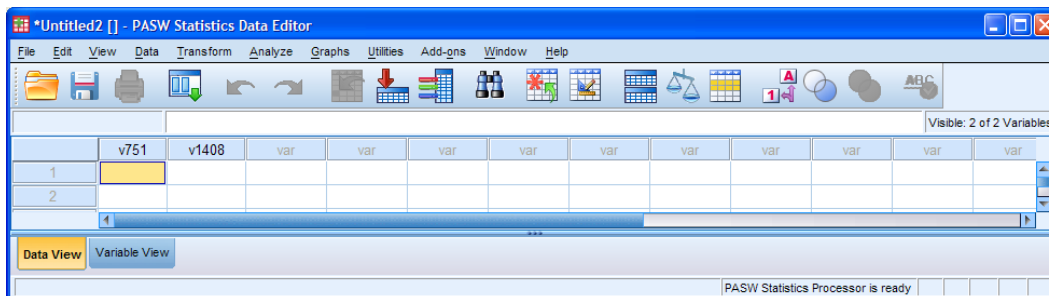
... to produce the following output:



The data editor header changes from **\*Untitled1** to **\*Untitled2**



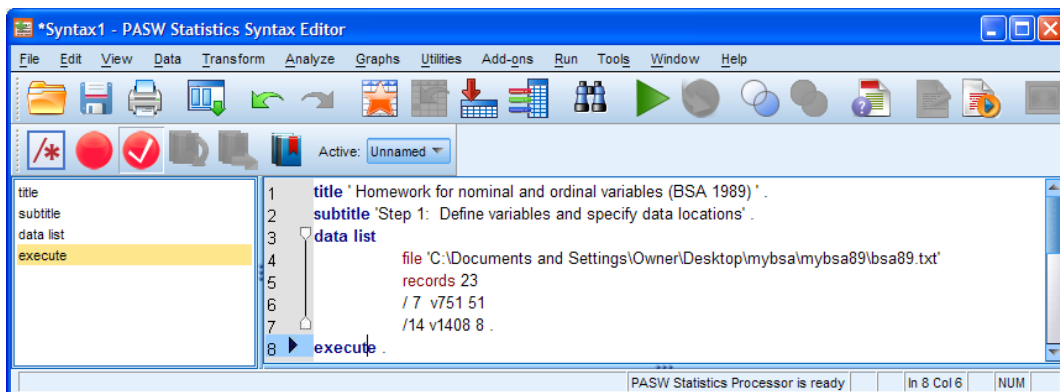
Switch to **Data View**



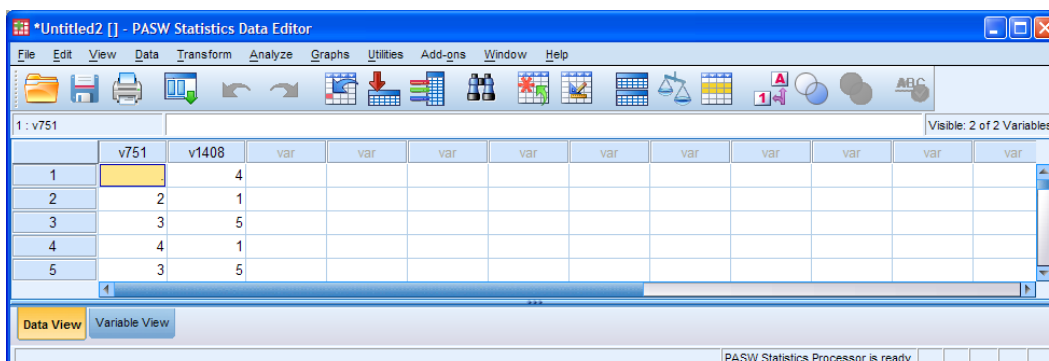
There are no actual data in the file, but your two variable names **v751** and **v1408** now appear in the first two column headers. Go back to the syntax editor and type in an **EXECUTE** command.

**execute .**

This will cause SPSS to load the raw data into the data editor.

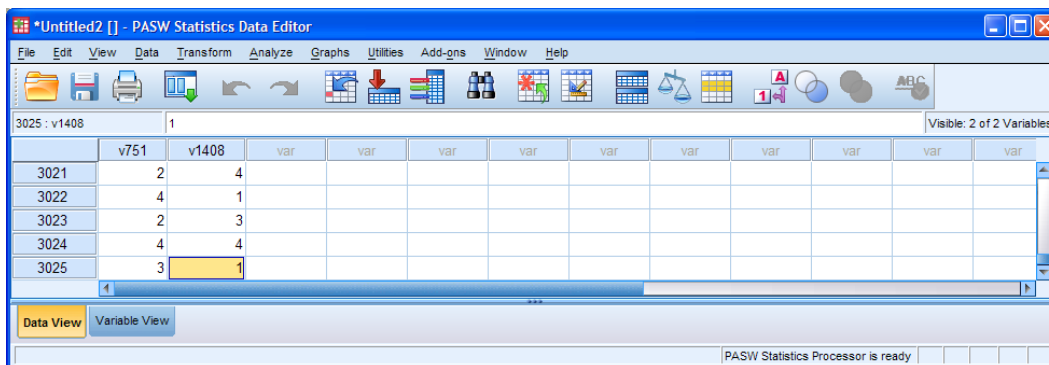


Click on the green ► . The command is repeated in the output, but you need to go back to the data editor to see what has happened. The data editor in **Data View** has now filled up:

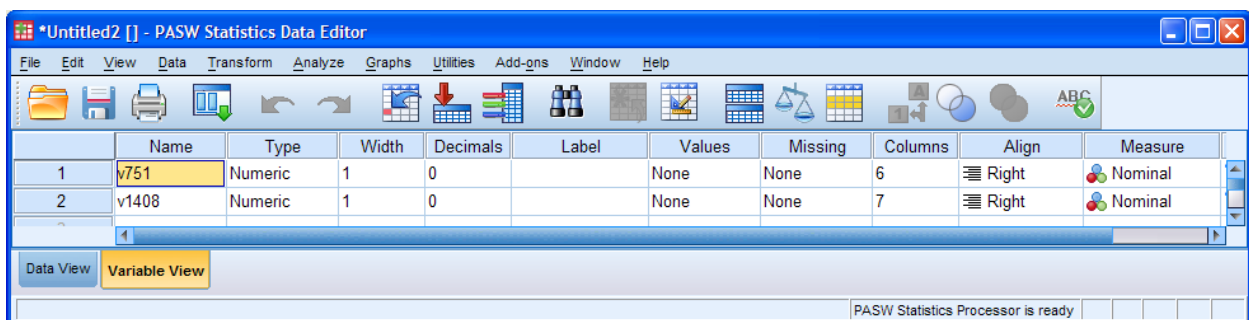




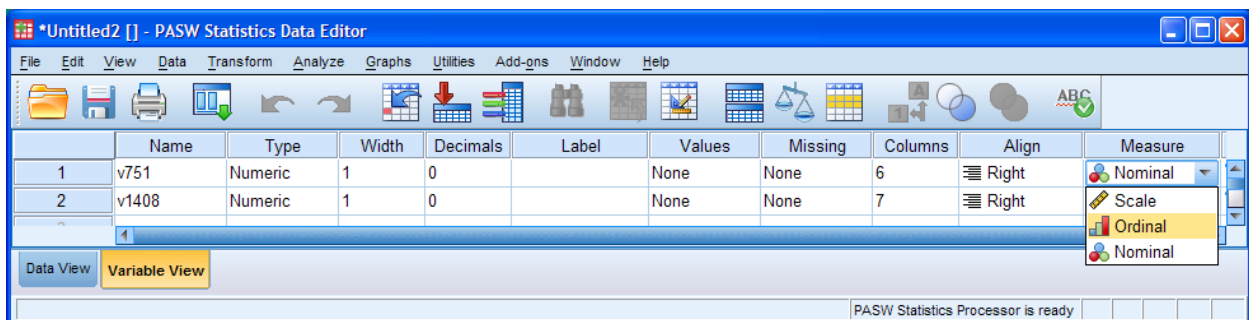
Scroll down to the end of the file (it's quicker to press **[CTRL] + [end]** ):



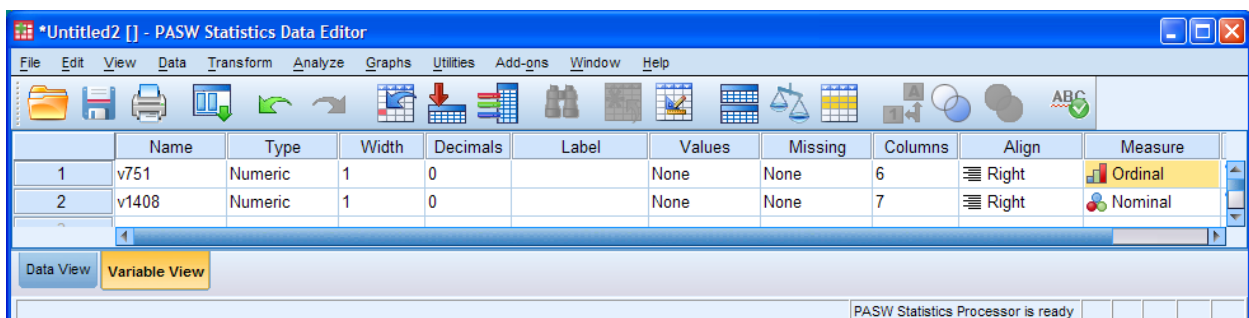
There are 3025 cases in the file. Go back to **Variable View**



The **Measure** column has changed from "Unknown" to "Nominal" for both variables, but **v751** is actually **ordinal**, so we need to change it. Click on the **Nominal** cell for **v751**:



... and click on **Ordinal** :



At this stage, even though in this exercise you are only creating two variables, it is good practice to **save your work**.

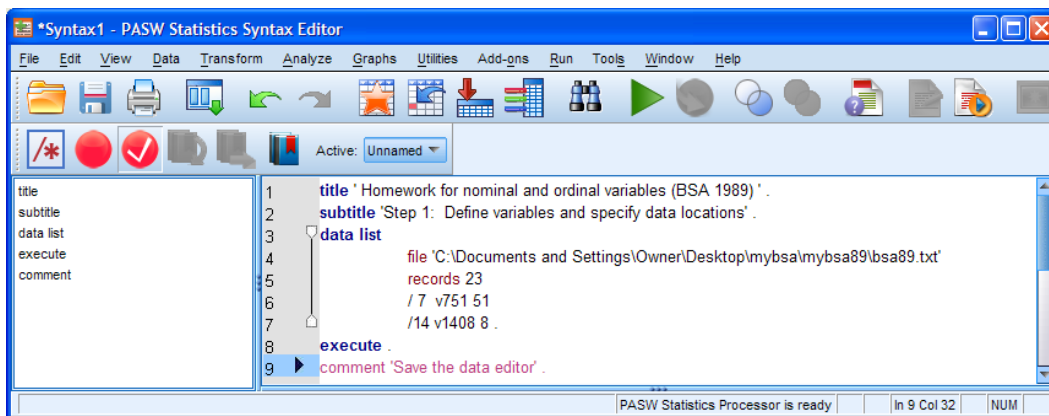
Inexperienced (and even experienced) users sometimes try to write, and then execute, their entire set of data definition and dictionary commands before saving their files, but then run into difficulties if there are errors that they cannot later easily trace.

Even with small data sets, you should build up your SPSS saved and syntax files in stages, saving them immediately after executing the **DATA LIST** command, and again after each of the other basic stages (**MISSING VALUES**, **VARIABLE LABELS** and **VALUE LABELS**). For large data sets this usually involves writing a series of syntax files, one (or sometimes more) for each stage, which you could call **file1.sps**, **file2.sps** etc. to create **file1.sav**, **file2.sav** etc. before running checks with utilities such as **DISPLAY LABELS** and **LIST / CASES n**.

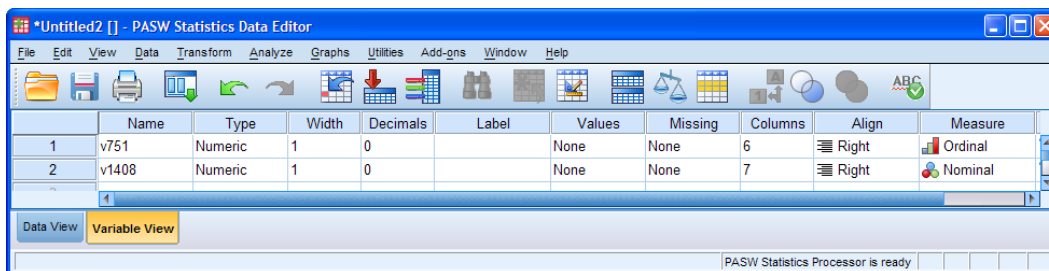
For this exercise we're going to write all the syntax in the same file, but save the data editor at each stage, just as we would if we were creating a **\*.sav** file for all the variables in the entire raw data set. This may look cumbersome and tedious, but believe me, I've used SPSS since 1972 to process hundreds of survey data sets and this method not only saves both time and tears, but also minimises errors and is easier for beginners and clients to understand .

Add a **COMMENT** to remind yourself and others (tutors, colleagues or supervisors) what you are supposed to be doing:

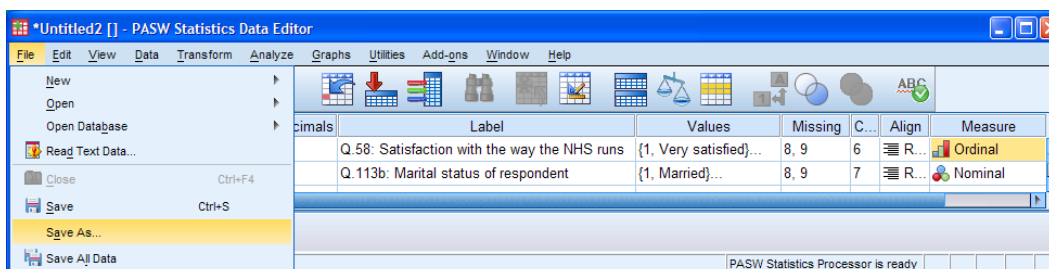
**comment 'Save the data editor' .**



To save the first stage of your work, go back to the data editor:

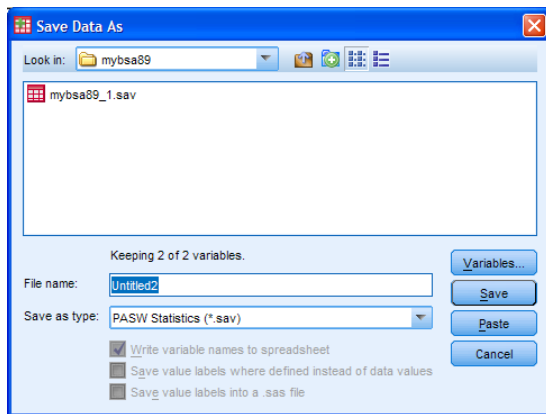


Click on **File > Save As ...**

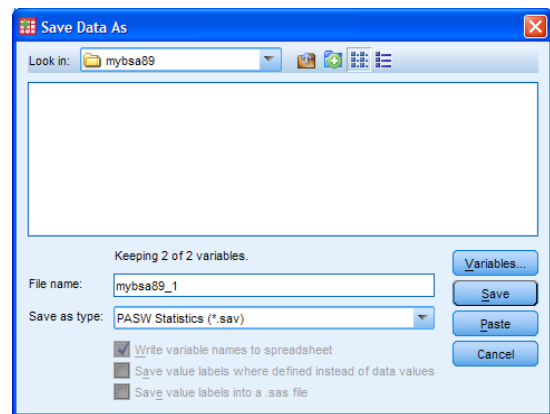




Navigate to folder **mybsa89**:

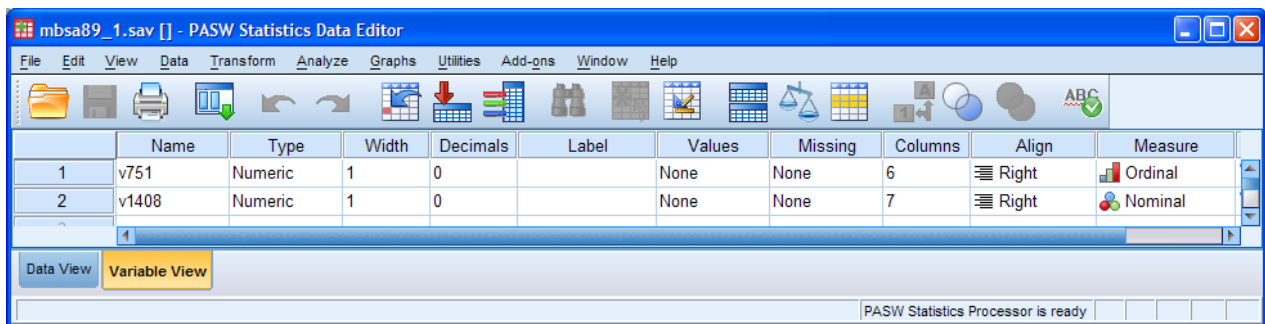


. . write **mybsa89\_1** in the File name box:



. . . and click on **Save**

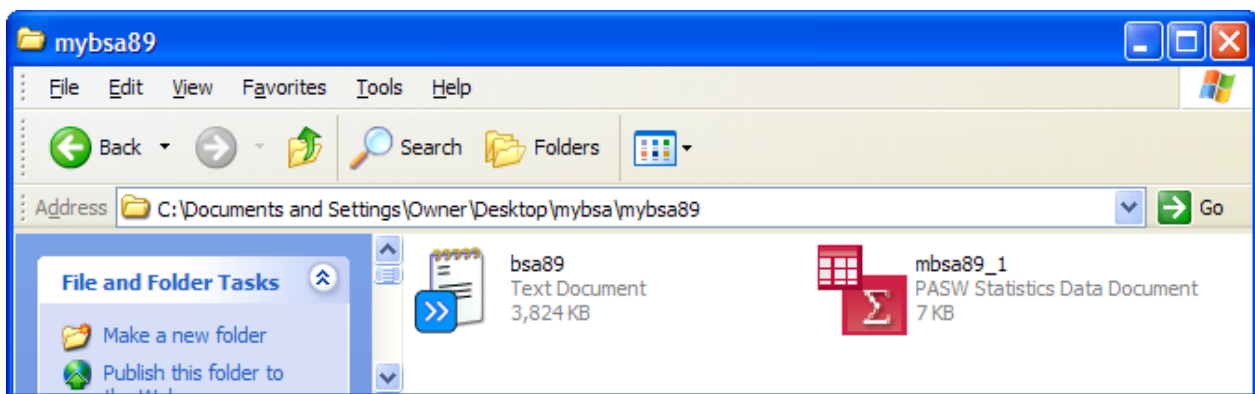
The data editor name will change from **\*Untitled2** to **mybsa89\_1.sav**



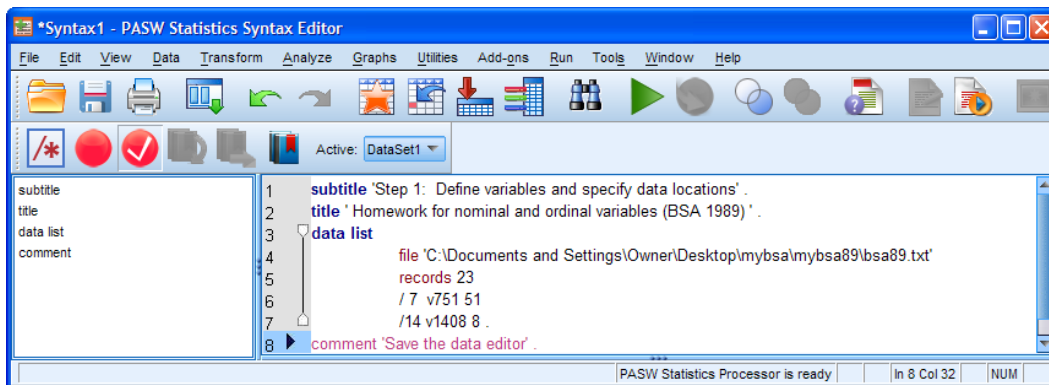
. . and the output viewer will display the automatically generated syntax:

```
SAVE OUTFILE='C:\Documents and Settings\Owner\Desktop\mybsa\mybsa89\mbsa89_1.sav'  
/COMPRESSED.
```

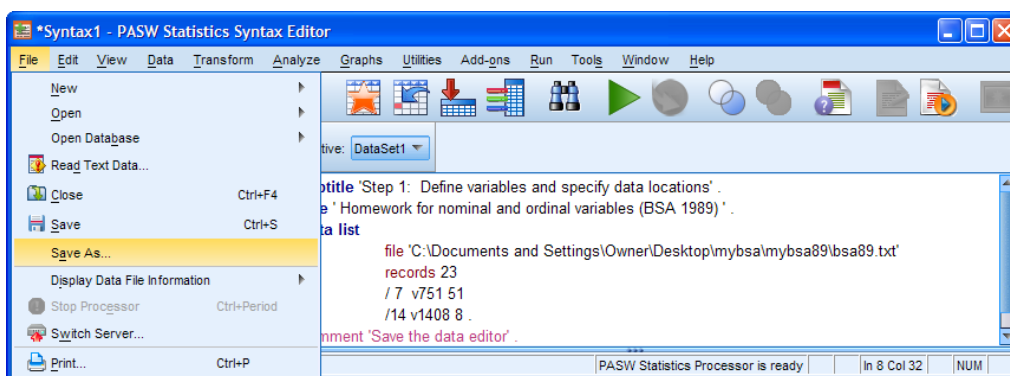
Your folder **mybsa89** will now contain the SPSS saved file **mybsa89\_1.sav**:



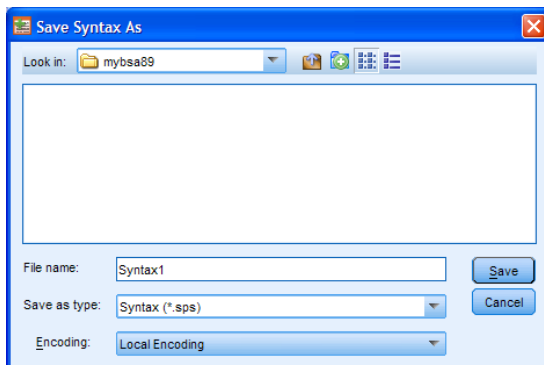
We also need to save the syntax editor.



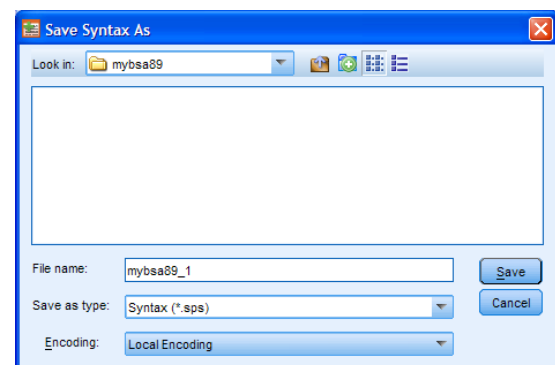
Click on **File** > **Save As ...**



Navigate to folder **mybsa89**:

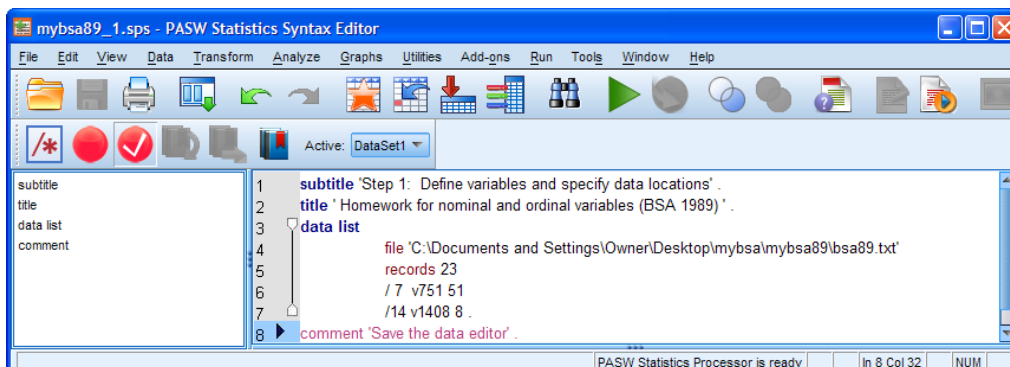


... write **mybsa89\_1** in the File name box:

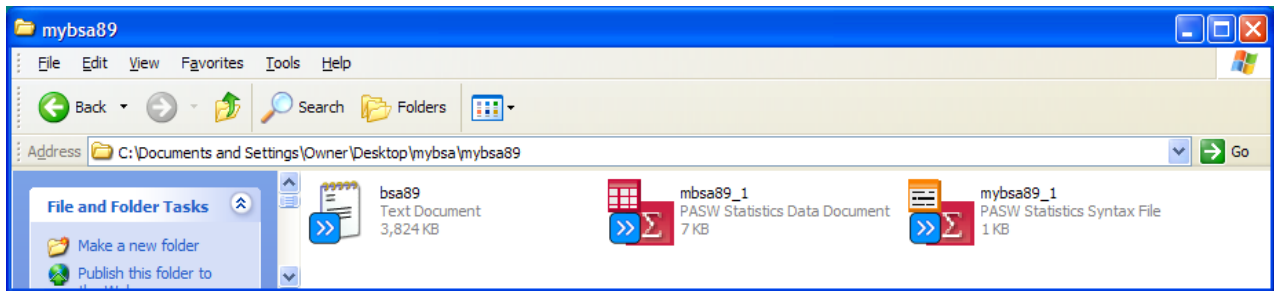


... and click on **Save**

The syntax editor name will change from **\*Syntax1** to **mybsa89\_1.sps**



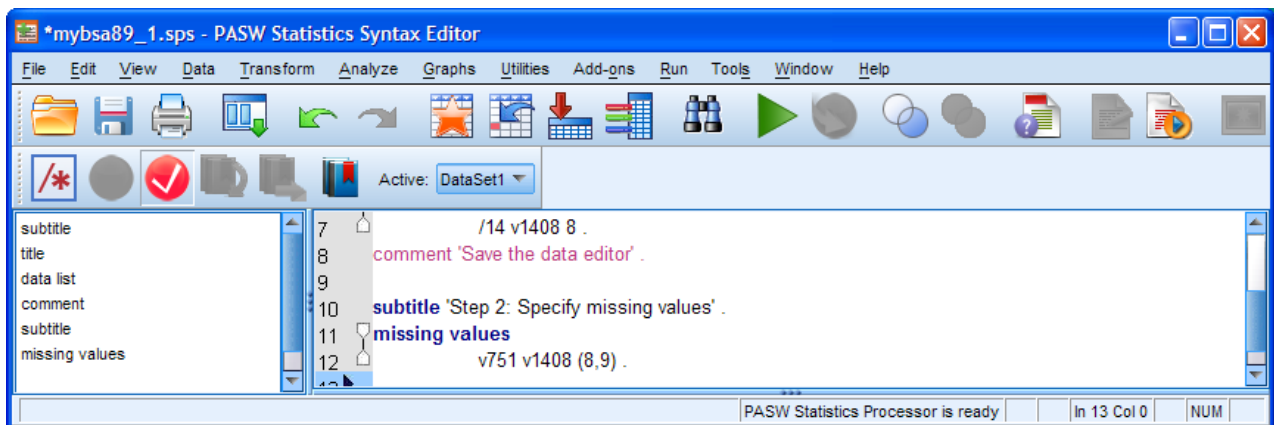
. . . and folder **mybsa89** will now contain the first edition of the syntax file



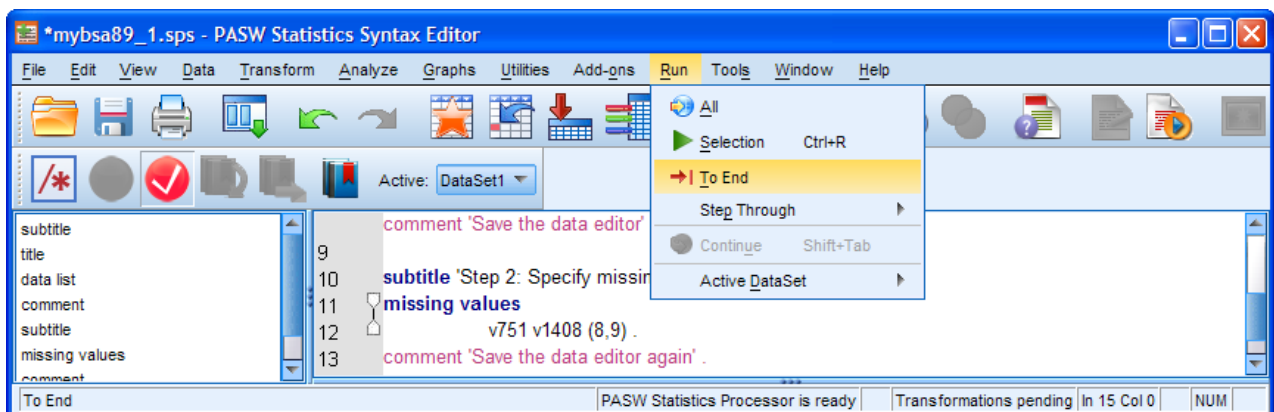
So far, so good. Now let's start building up the data dictionary.

**Step 2:** Add a **SUBTITLE** describing the next step and a **MISSING VALUES** command to specify values to be treated as missing:

**subtitle 'Step 2: Specify missing values' .**  
**missing values**  
**v751 v1408 (8,9) .**



Place the cursor in the **subtitle** line and click on **Run > To End**

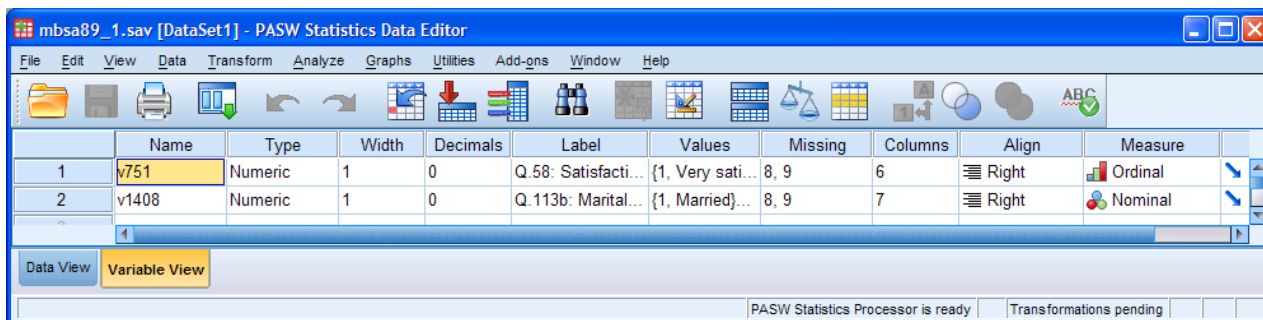


The command is repeated in the output:

```
missing values
v751 v1408 (8,9) .
```

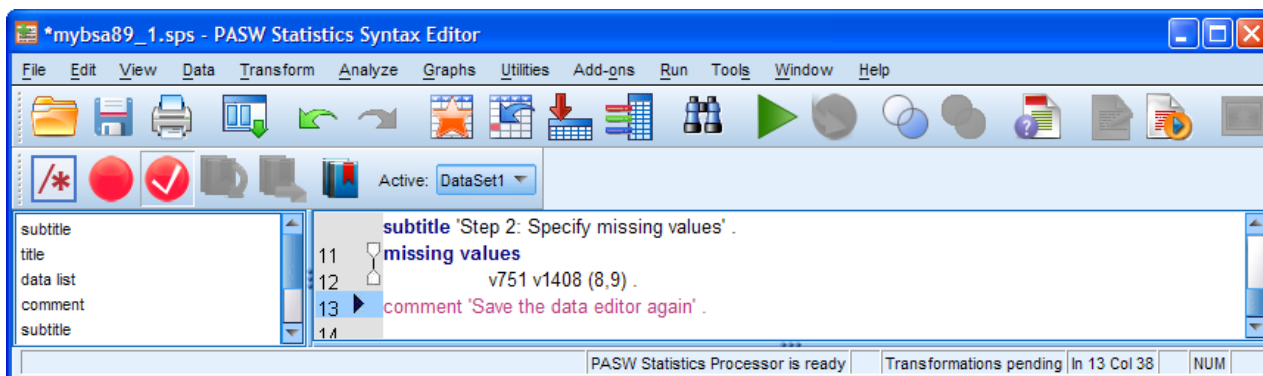
[NB: Don't worry about the lack of indentation in this and following syntax repeats in the output file: there aren't any warning or error messages and SPSS has already parsed the syntax anyway, using the commas, slashes etc. in your syntax as delimiters.]

The **Missing** column in the data editor will now contain the values 8 and 9 for both variables:

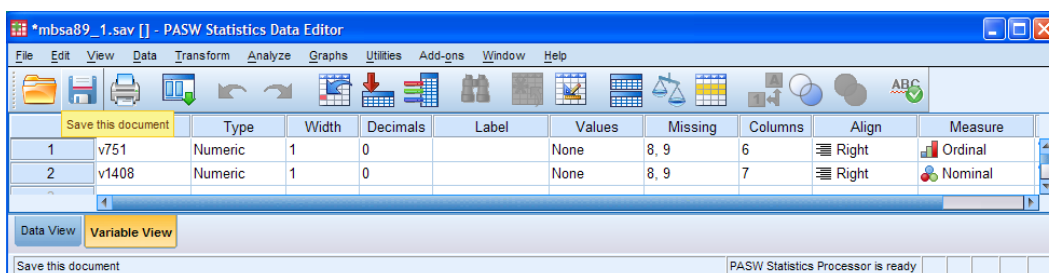


Put a comment in the syntax editor as a reminder:

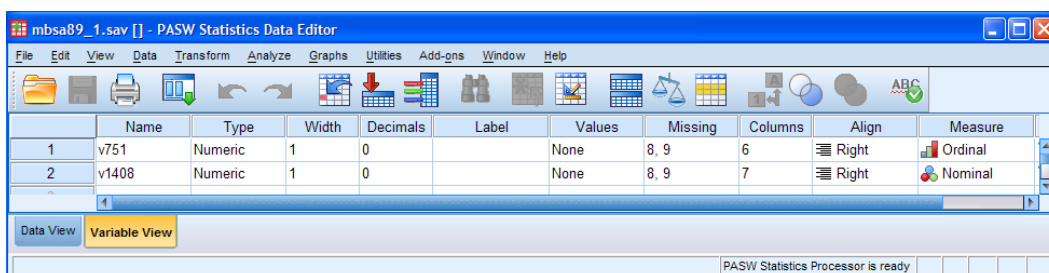
**comment 'Save the data editor again' .**



Save the data editor again by clicking on the blue document icon (2<sup>nd</sup> in from the left):



The icon will now be grayed out:



**Step 3:** Add a **SUBTITLE** explaining the next step, followed by a **VARIABLE LABELS** command with meaningful and helpful labels (keep them reasonably short!):

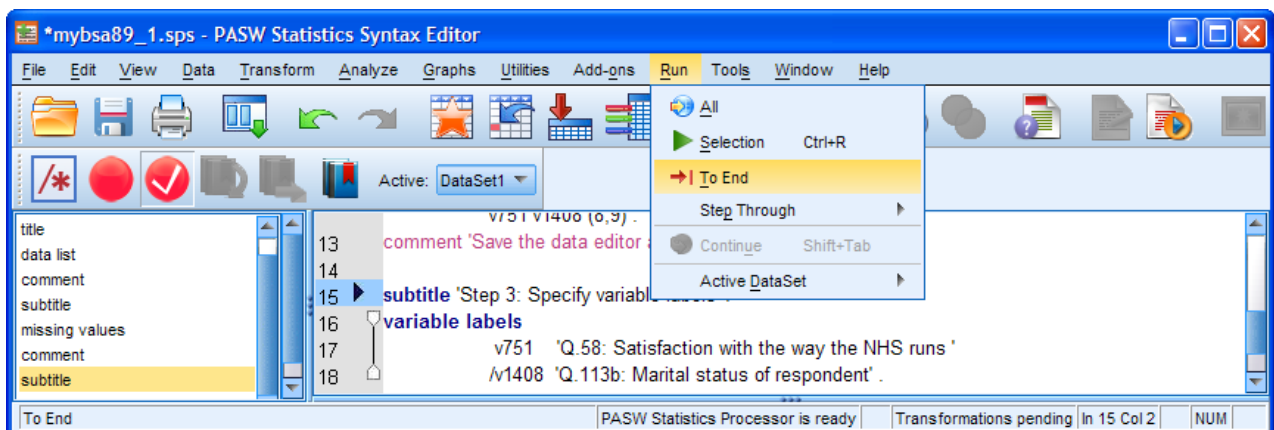
**subtitle 'Step 3: Specify variable labels' .**  
**variable labels**

**v751 'Q.58: Satisfaction with the way the NHS runs '**

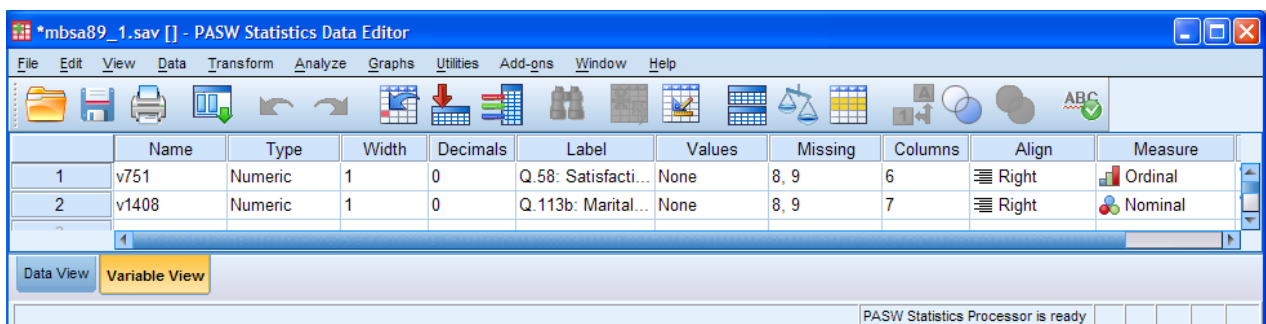
**/v1408 'Q.113b: Marital status of respondent' .**



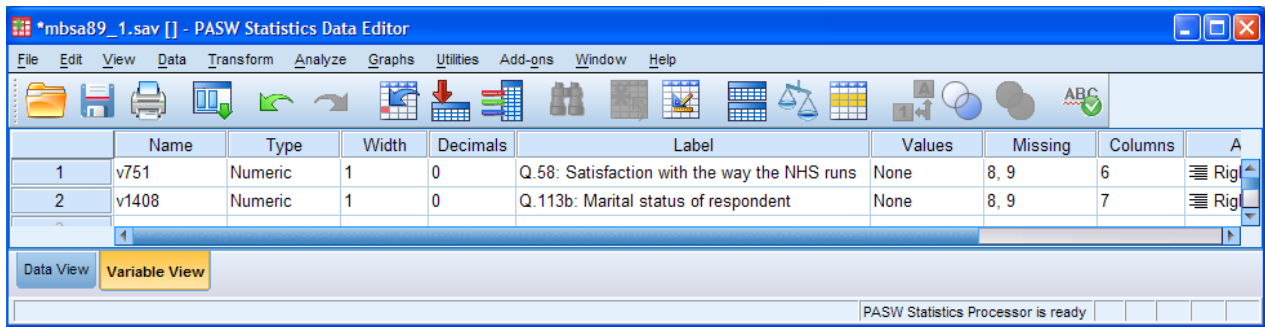
Place the cursor in the **subtitle** line and click on **Run > To End**



The subtitle and command are repeated in the output and the **Label** column in the data editor has now filled up:



You can't see the labels properly, so slide the column separator between **Label** and **Values** to the right:



Save the data editor again by clicking on the blue document icon (2<sup>nd</sup> in from the left) and add a comment to the syntax editor:

**comment 'Save the data editor again' .**

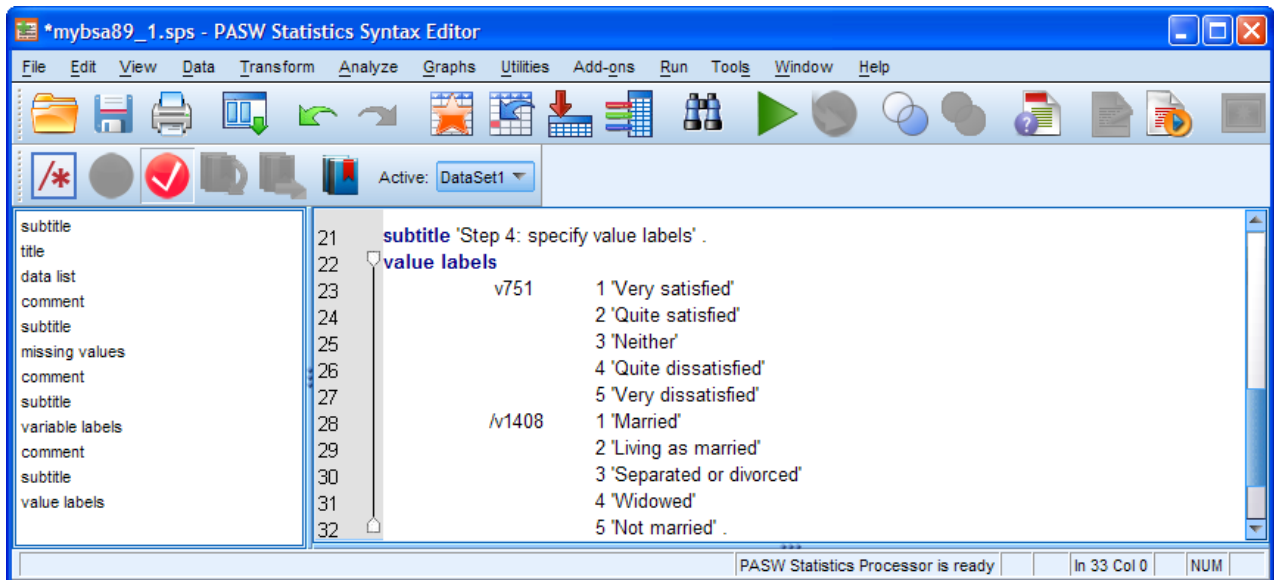


**Step 4:** Finally, add a **SUBTITLE** explaining the final step, followed by a **VALUE LABELS** command with appropriate and meaningful labels (keep them as short as possible!):

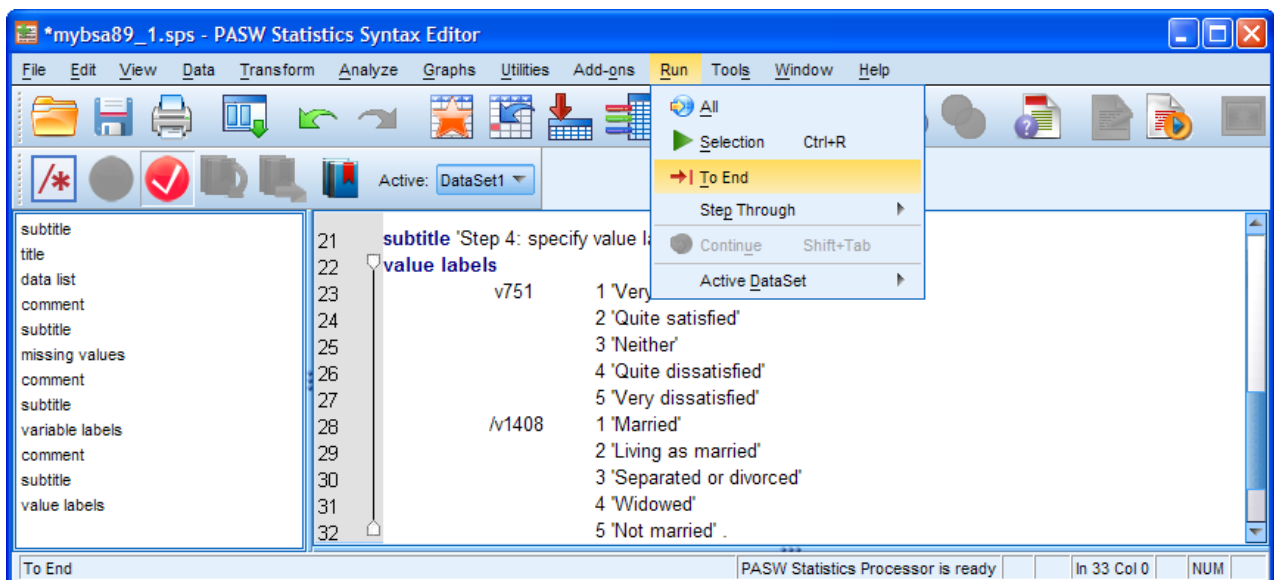
**subtitle 'Step 4: specify value labels' .**  
**value labels**

**v751 1 'Very satisfied'**  
**2 'Quite satisfied'**  
**3 'Neither'**  
**4 'Quite dissatisfied'**  
**5 'Very dissatisfied'**  
**/v1408 1 'Married'**  
**2 'Living as married'**  
**3 'Separated or divorced'**  
**4 'Widowed'**  
**5 'Not married' .**





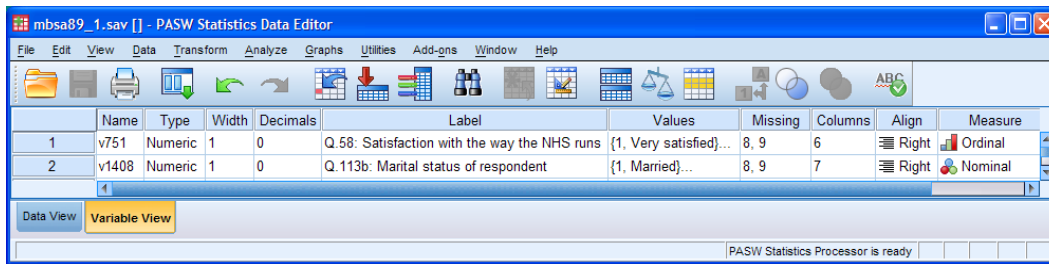
Check to see if the syntax looks OK (ie no **red bits** indicating grammatical errors or incomplete commands, usually caused by missing primes, slashes or stops). Place the cursor in the subtitle line and click on **Run** > **To End**



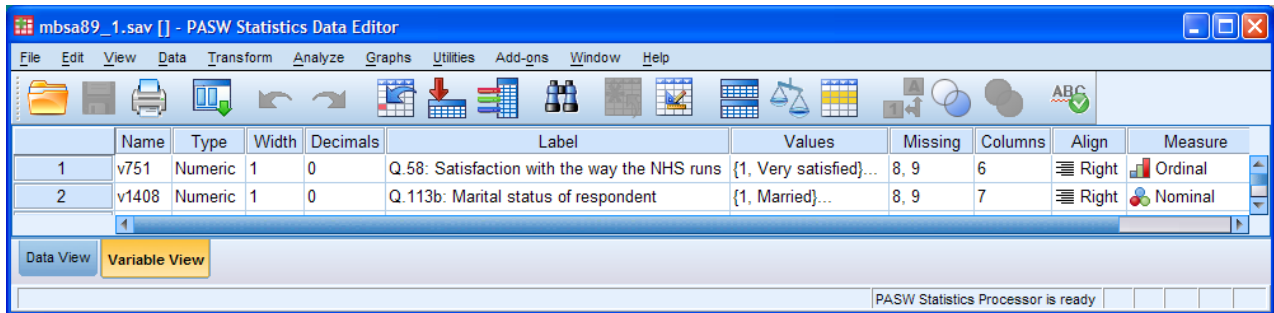
```

value labels
  v751 1 'Very satisfied'
2 'Quite satisfied'
3 'Neither'
4 'Quite dissatisfied'
5 'Very dissatisfied'
/v1408 1 'Married'
2 'Living as married'
3 'Separated or divorced'
4 'Widowed'
5 'Not married' .
  
```

Go back to **Variable View** and adjust the column separators so you can see the labels:



We've almost finished. We need to save the data editor one last time by clicking on the icon:



. . and add a comment to the syntax editor reminding you to save the file.

**comment 'Save the data editor again' .**

. . . then save the syntax editor as well (You should know how to do this by now.)

If you struggled to do this exercise, even after using the crib, go back and do it again, and again (and also the earlier exercises until you are confident with managing files in Windows and using basic syntax in SPSS).

Practice makes perfect and you need to be able to open, write, execute and save files almost as second nature, otherwise you will always have problems with the mechanics and never get to grips with the logic and theory underpinning the analyses you will be doing later.

**End of session**

**Next session: 2.1.2.11 Homework exercise 1 - Checking your file**

[\[Back to Block 2 menu\]](#)