

Normality Test

NORMALITY TEST EXAMPLE

The following is a random sample of PCB (polychlorinated biphenyl) concentrations in an area:

8.9, 24, 24, 22, 74, 80, 2.4, 1.6, 1.5, 13, 6.9, 18 .

Question: Is it reasonable to assume that the distribution of the data is normal?

SPSS 4502 - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Window Help

12 - var00004 18

	brand_1	brand_2	brand_3	var00004	var	var	var	var	var	var	var	var	var
1	251.20	263.20	269.70	8.90									
2	245.10	262.90	263.20	24.00									
3	248.00	265.00	277.50	24.00									
4	251.10	254.50	267.40	22.00									
5	260.50	264.30	270.50	74.00									
6	250.00	257.00	265.50	80.00									
7	253.90	262.80	270.70	2.40									
8	244.60	264.40	272.90	1.60									
9	254.60	260.60	275.60	1.50									
10	248.80	255.90	266.50	13.00									
11	.	.	.	6.90									
12	.	.	.	18.00									
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31													
32													

Type in data.

8.9, 24, 24, 22, 74, 80, 2.4, 1.6, 1.5, 13, 6.9, 18

Data View Variable View

SPSS Processor is ready

SPSS 4502 - SPSS Data Editor

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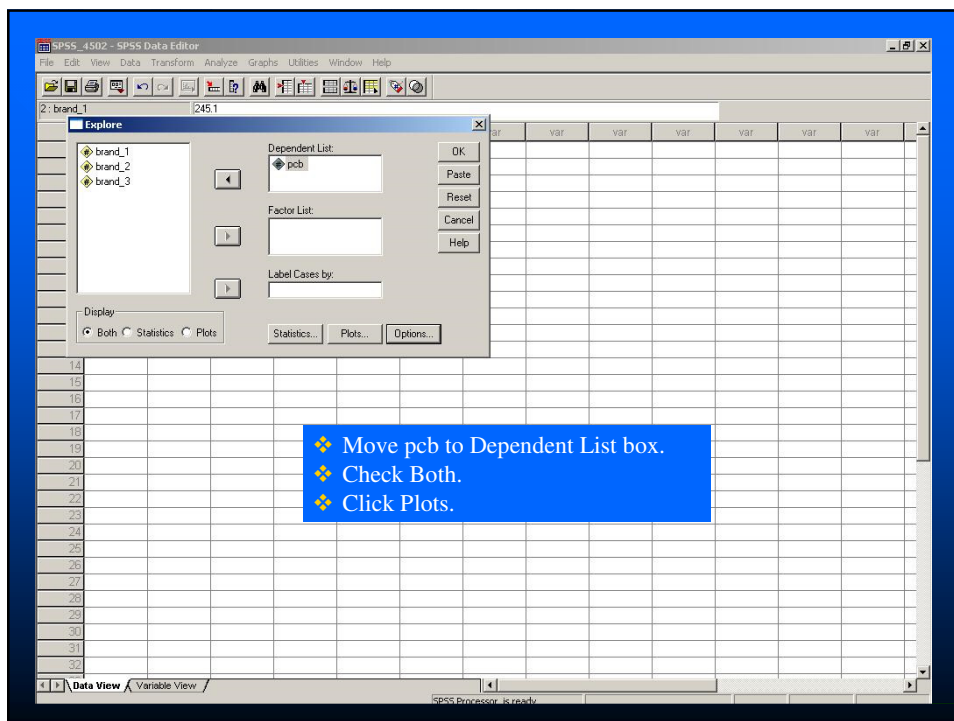
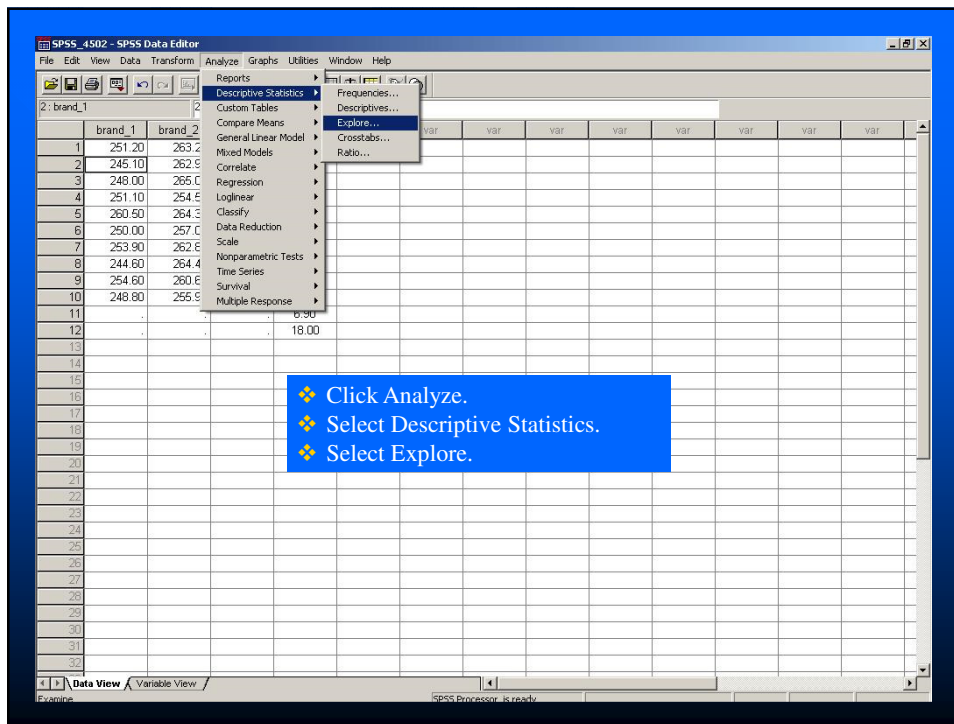
	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1	brand_1	Numeric	8	2		None	None	8	Right	Scale
2	brand_2	Numeric	8	2		None	None	8	Right	Scale
3	brand_3	Numeric	8	2		None	None	8	Right	Scale
4	pct	Numeric	8	2		None	None	8	Center	Scale
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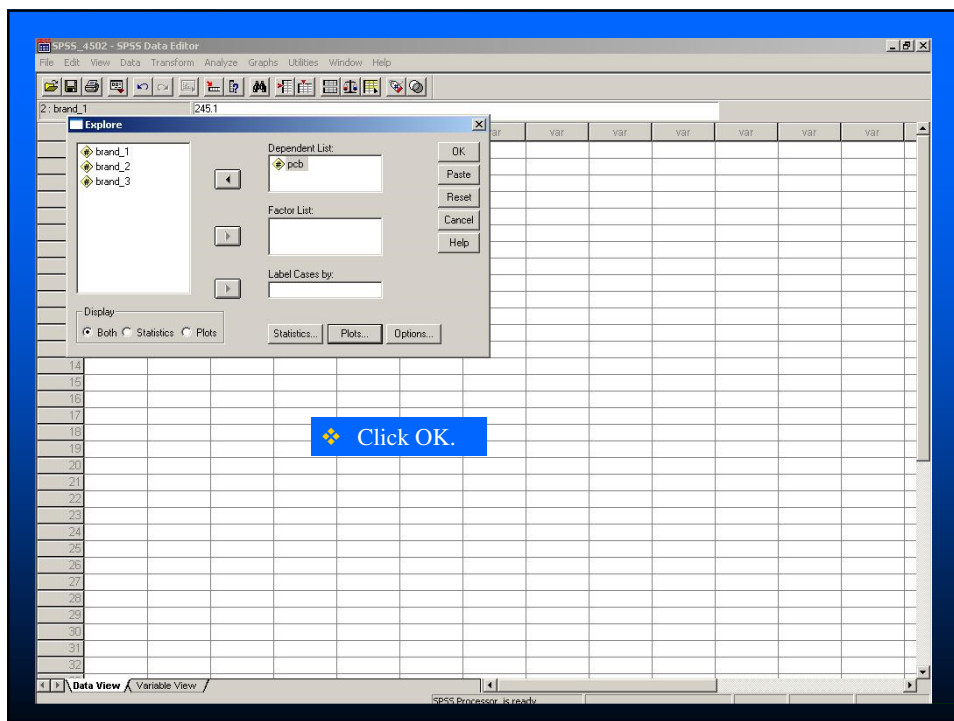
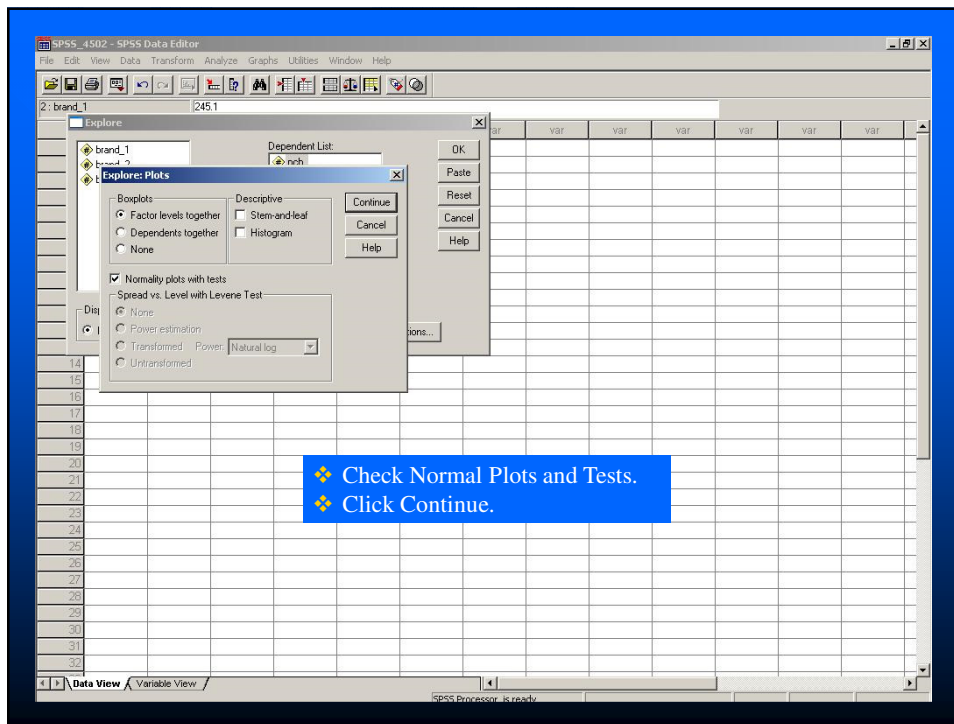
Change the names of the variable.

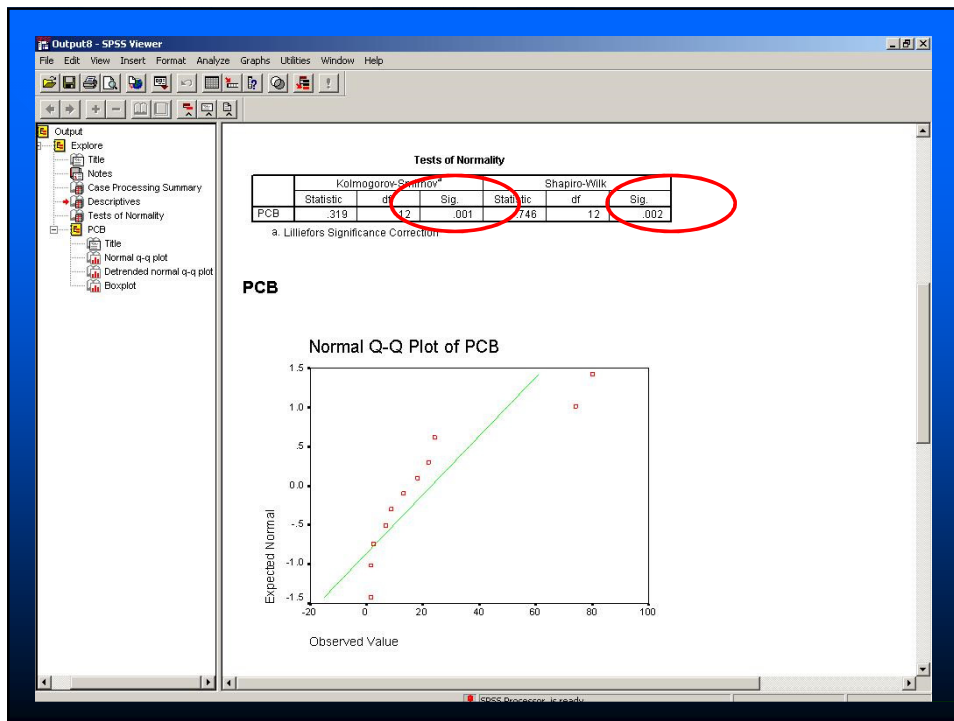
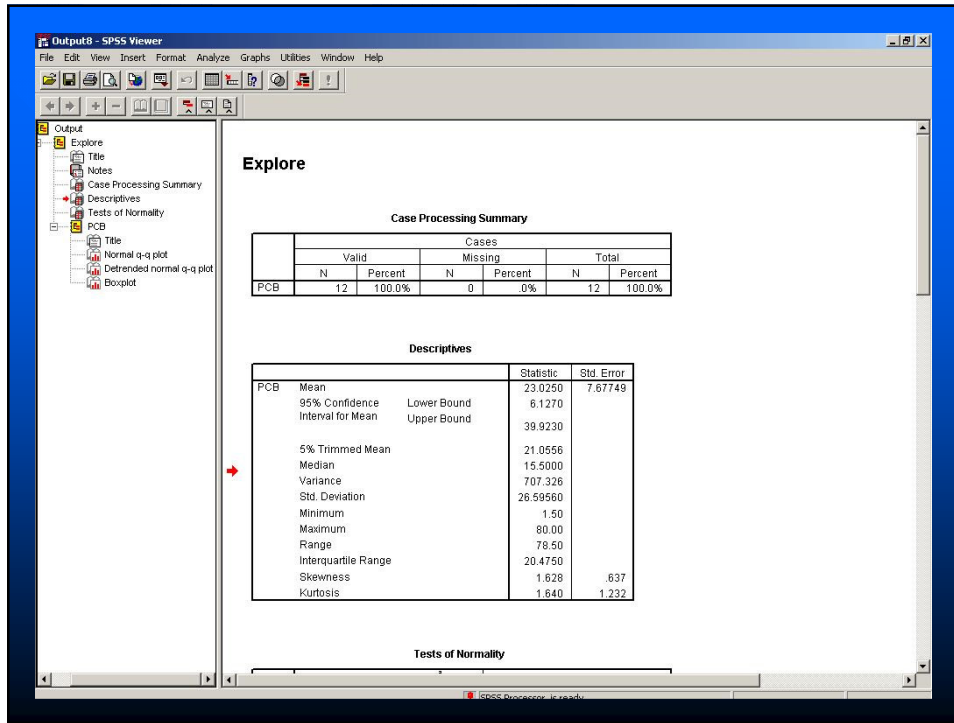
Click Data View.

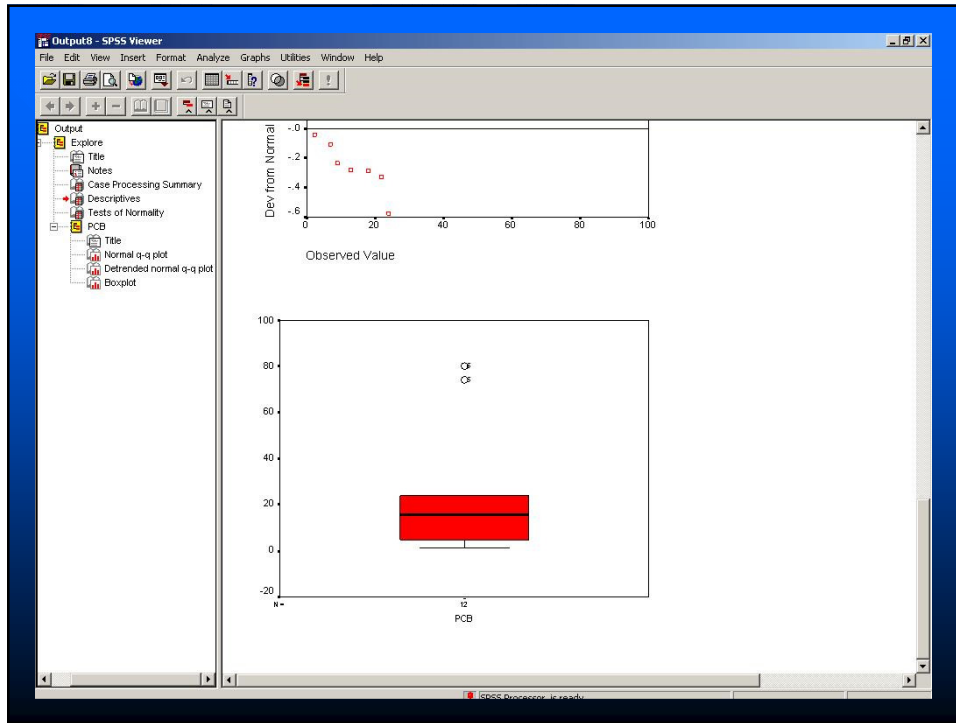
Data View Variable View

SPSS Processor is ready









DATA TRANSFORMATION

PCB PROBLEM (REVISIT)

The following is a random sample of PCB (polychlorinated biphenyl) concentrations in an area:

8.9, 24, 24, 22, 74, 80, 2.4, 1.6, 1.5, 13, 6.9, 18.

Question:

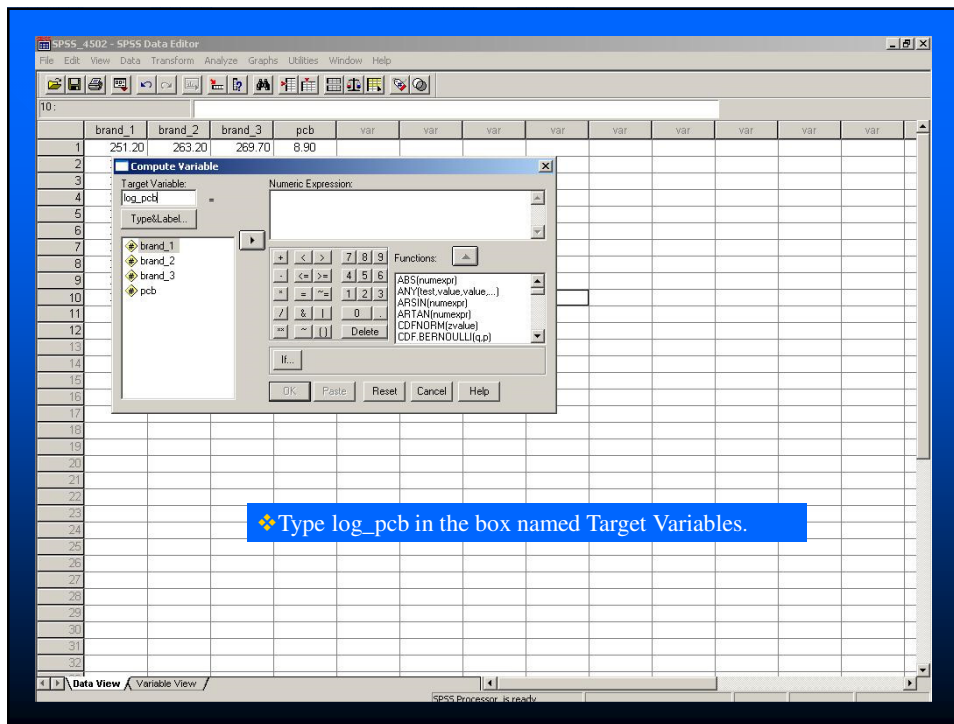
Is it reasonable to assume that the distribution of the log-transformed data is normal?

The screenshot shows the SPSS Data Editor window with a data grid. The first column is labeled 'brand_1' and the second is 'pcb'. The 'pcb' column contains the values: 8.90, 24.00, 24.00, 22.00, 74.00, 2.40, 1.60, 1.50, 13.00, 6.90, 18.00. A 'Compute...' dialog box is open over the data grid, with the 'Compute' option selected in the menu. A blue box with three instructions is overlaid on the grid: 'Type in data.', 'Click Transform.', and 'Select Compute.'. Below this box, a blue bar contains the list of PCB concentrations: '8.9, 24, 24, 22, 74, 80, 2.4, 1.6, 1.5, 13, 6.9, 18'.

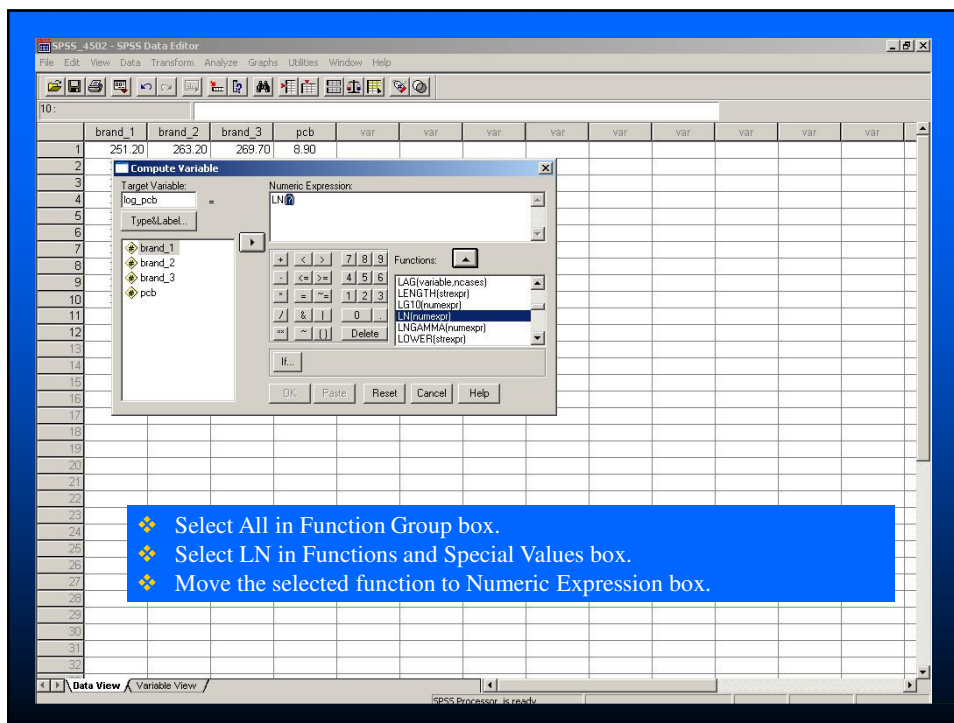
brand_1	pcb
1	8.90
2	24.00
3	24.00
4	22.00
5	74.00
6	2.40
7	1.60
8	1.50
9	13.00
10	6.90
11	18.00

- Type in data.
- Click Transform.
- Select Compute.

8.9, 24, 24, 22, 74, 80, 2.4, 1.6, 1.5, 13, 6.9, 18



❖ Type log_pcb in the box named Target Variables.



- ❖ Select All in Function Group box.
- ❖ Select LN in Functions and Special Values box.
- ❖ Move the selected function to Numeric Expression box.

SPSS 4502 - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Window Help

10:

	brand_1	brand_2	brand_3	pcb	var	var	var	var	var	var	var	var	var
1	251.20	263.20	269.70	8.90									

Compute Variable

Target Variable: log_pcb

Numeric Expression: LN(pcb)

brand_1
brand_2
brand_3
pcb

Functions:
LAG(variable.ncases)
LENGTH(strexp)
LG10(numexp)
LN(numexp)
LNGAMMA(numexp)
LOWER(strexp)

OK Paste Reset Cancel Help

Move variable pcb to Numeric Expression box.
Click OK.

Data View Variable View

SPSS Processor is ready

SPSS 4502 - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Window Help

12:

	brand_1	brand_2	brand_3	pcb	log_pcb	var	var	var	var	var	var	var	var
1	251.20	263.20	269.70	8.90	2.19								
2	245.10	262.90	263.20	24.00	3.18								
3	248.00	265.00	277.50	24.00	3.18								
4	251.10	254.50	267.40	22.00	3.09								
5	260.50	264.30	270.50	74.00	4.30								
6	250.00	257.00	265.50	80.00	4.38								
7	253.90	262.80	270.70	2.40	.88								
8	244.60	264.40	272.90	1.60	.47								
9	254.60	260.60	275.60	1.50	.41								
10	248.80	255.90	266.50	13.00	2.56								
11	.	.	.	6.90	1.93								
12	.	.	.	18.00	2.89								

Data View Variable View

SPSS Processor is ready

