SPSS Information Sheet 4 Stem and Leaf Displays

When we have a data set with a variable that has numerical values, we may wish to make a stem and leaf display of the data from that variable in order to explore the shape of the data — center, spread, skew, gaps, unusually high or low values, etc. SPSS will not really makes stem and leaf displays easily.

We will use the data from Problem 2.16 which gives parts per trillion of dioxin (2,3,7,8-TCDD) in blood and fat tissue for 20 Massachusetts Vietnam war veterans, gotten as a result of exposure to Agent Orange.

Stem and Leaf Display

To make a stem and leaf display, we first enter the data as described in other handouts:

000					TCDD.sav	/ - SPSS Data	Editor
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1 : case	2		1				
	case	plasma	fat	var	var	var	va
1	1	2.5	4.9				
2	2	3.1	5.9				
3	3	2.1	4.4				
4	4	3.5	6.9				
5	5	3.1	7.0				
6	6	1.8	4.2				
7 the Anal	vze menu		10.0				

We then choose the Analyze menu:

SPSS 11	File	Edit	View	Insert	Format	Analyze	Graphs
0					TCDD.spo	- SPSS Vie	wer

and from it we choose the "Descriptive Statistics" sub-menu:

Analyze	Graphs	Utilities					
Report	Reports						
Descrip	otive Statist	ics > ►					
Compa	re Means	•					
Genera	l Linear Mo	odel 🕨					
Mixed	Models	•					
Correla	te	•					
Regres	sion	•					
Logline	ar	•					
Classif	/	•					
Data Re	duction						
Scale		•					
Nonpa	ametric Te	ests ▶					
Surviva		•					

This opens a sub-menu window from which we can choose a Explore sub-menu:

	Analyze	Graphs	Utilities	Window Help
	Reports	yer	•	
	Descrip	tive Statis	tics 🕨 🕨	Frequencies
	Compa	re Means		Descriptives
	Genera	l Linear M	odel 🕨	Explore
	Mixed M	Models	•	Crosstabs
	Correla	te	•	Ratio
l	Regress	sion		
	Logline	ar	•	
	Classify	1		

This opens a window that anows us to define a stern and leaf display.	Th	is c	opens	а	window	[,] that	allo	ws	us 1	to	define	а	stem	and	leaf	dis	spla	iy:	
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$\Theta \Theta \Theta$	Explore
🚸 fat	Dependent List:
	Factor List:
Dirplay	Label Cases by:
Statistics	Plots Options
? Reset Paste	Cancel OK

In this we choose a variable or variables for which to make a frequency table. In this case I have chosen the plasma concentration of dioxin (TCDD) for the 20 veterans. In this case, we want a "Plot" and no Statistics, so we choose the Plots circle. We push the Plots button, which displays a window:

Explore: Plots
Boxplots
 Factor levels together
Dependents together
None
Descriptive
🗹 Stem-and-leaf
🗌 Histogram
Normality plots with tests
Spread vs. Level with Levene Test
 None
O Power estimation
 Transformed
Power: Natural log
 Untransformed
? Cancel Continue

We choose "None" for Boxplots (I haven't done that here). We choose Stem-and-Leaf and click continue. Notice this gives also an alternate way to do Histograms (and a way to do Boxplots different from that which we will discuss later).

We then click OK (or its equivalent on the Explore window. This creates .spo output of a stem-and-leaf display:

PLASMA

PLASMA Stem-and-Leaf Plot
Frequency Stem & Leaf
Trequency Stein a Lean
3.00 1.688
4.00 2.0155
5.00 3.01135
3.00 4.167
.00 5.
2.00 6.09
1.00 7.2
2.00 Extremes (>=20.0)
Stem width: 1.0
Each leaf: 1 case(s)
. <u>.</u>

It should be saved and then cut and pasted into a document. Here we select the dispay (as indicated by the box around it and arrow pointing to it) and then select "Copy Object" under the Edit menu. We can then paste it into a document:

PLASMA Stem-a	nd-Leaf	Plot
Frequency	Stem &	Leaf
3.00	1.	688
4.00	2.	0155
5.00	3.	01135
3.00	4.	167
.00	5.	
2.00	6.	09
1.00	7.	2
2.00 Ext	remes	(>=20.0)
Stem width:	1.0	
Each leaf:	1 c	ase(s)

Exercises

- 1. Use the data for Problem 2.14 in an SPSS Data Editor and save it as insect.sav on a floppy disk or hard drive.
- 2. Make a Stem-and-leaf display of the Oxon variable.
- 3. Write one paragraph describing the shape of the data for the Oxon variable based on the display
- 4. Make a Word document with the display and your paragraph and turn it.