

Project: Blood-Lead Level

Name _____

In a study of the effects of exposure to lead on the psychological and neurological well-being of children, a group of children who lived near a lead smelter in El Paso, Texas, were identified and their blood levels of lead were measured. An exposed group of 19 children were identified who had blood-lead levels of at least 40 mg/ml. This group of children is defined by group variable **leadtype** and was coded as 2. A control group of 63 children were also identified who had blood-lead levels less than 40 mg/ml, and is identified by the variable **leadtype** and was coded as 1. All children lived close to the lead smelter. Two important outcome variables were (1) the number of finger-wrist taps in the dominant hand (a measure of neurological function) and (2) the Wechsler full-scale IQ score. The data is saved in SPSS format **leadtest.sav**. (Web address for this data file is: <http://gchang.people.ysu.edu/stat/leadtest.sav>) It can be downloaded from Dr. Chang's web site in Data Directory Link.

Variable Description

id	Identification number
area	Area where the children lived 1 = 0 to 1 mile from smelter 2 = 1 to 2.5 miles from smelter 3 = 2.5 to 4.1 miles from smelter
age	Age, 1011 mean 10 years 11 months
sex	Sex 1=Male, 0=Female
iqf	Full Scale of IQ test score
leadtype	Blood lead level group 0 = below 40 mg/ml 1 = greater or equal to 40 mg/ml
fwtr	Finger-wrist tapping test right hand
fwtl	Finger-wrist tapping test left hand
maxfwtr	Larger of fwtr and fwtl as a proxy for the number of taps from the dominant hand
leadlevel	Blood lead level in mg/ml

1. Use SPSS to make a histogram to display the distribution of **maxfwtr**, the number of taps from the dominant hand and comment on what you see in the chart.
2. Use SPSS to produce a side-by-side boxplot to display the difference in the number of taps from the dominant hand (**maxfwtr**) between area lived (**area**).
3. Use SPSS to make a cluster bar chart to display and examine the joint distribution of **area** and **leadtype** and comment on what you see in the chart.

Copy and paste charts into the MS-WORD document. Below each chart, there should be a chart number and title as shown in the next page. Following each chart, there should be a **short description about the variable based on your observation**. Report any unusual data values if you do see them, and explain possible reasons for their existence in this data set.

Your report should help readers in understanding the variables observed. The grade of the paper determined by correctness of charts used (50%), written summary (30%), organization and appearance (20%).

Remark: Your paper should have the project title and your name. See example below which will be the **format** of your all other future SPSS project reports. Charts and tables should always be properly numbered and labeled. Do not attach the data sheet.

Project: Pulse Rates Analysis

John Smith
Major in Statistics

1. The graphs, charts and tables in your report need to be all properly numbered and labeled with proper title. The example in the Figure 1 is for showing a histogram created with SPSS and that you wish to use it to explain or answer a question. Your graph should be large enough so that the information in the chart is readable. But, don't let a chart take up more than half a page.

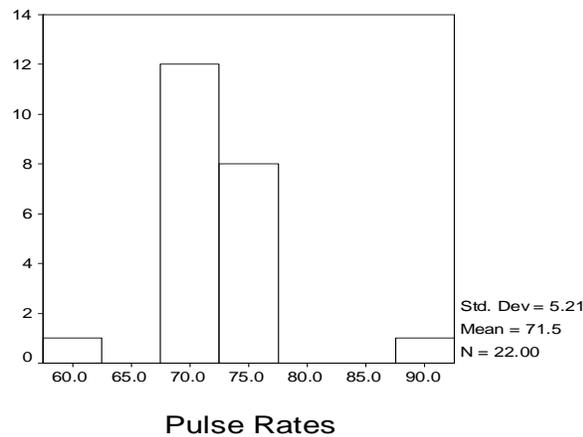


Figure 1: Histogram for Pulse Rates

2. The Figure 2 is a stem-and-leaf display of the pulse rate variable. It should also be properly labeled as shown below. It is always recommended that you describe the information that you present in your paper.

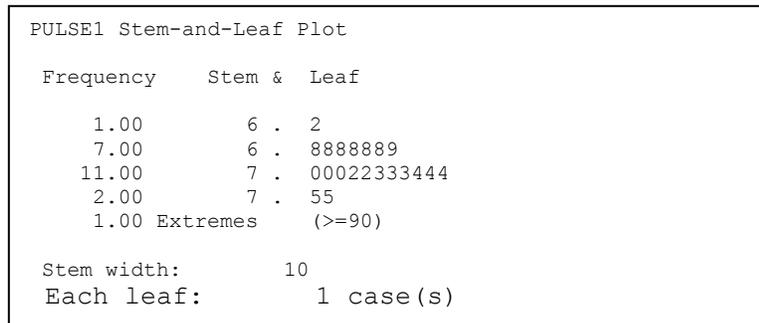


Figure 2: Stemplot for Pulse Rate Variable

3. If a table is presented in your paper, you should also label it with proper numbering and title as in Table 1 shown below. Don't copy the whole table that SPSS produced in the output window into your report. Retrieve only the necessary information that you wish to describe in your paper.

Statistics	<i>Pulse Rate</i>
Mean	71.5
Standard Deviation	5.11

Table 1: Descriptive Statistics for Pulse Rate Variable

Use page number when your report is more than one page. Always use MS-WORD or other word processor to prepare SPSS related project assignment.

Few tips on MS-WORD

- 1) Use **Ctrl** + **Alt** + **=** (press them at the same) to type superscript, and do the same to go back to normal text. Example: X^2
- 2) Use **Ctrl** + **=** to type subscript, and do the same to go back to normal text.
Example: X_2
- 3) For Greek letters and math symbols, from the MS-WORD menu bar, click and select through the following sequence: **Insert** / **Symbol**. You can insert symbols like: μ σ Φ Ω \neq \approx \otimes \subseteq \supseteq \pm \leq and more ...
- 4) Click and select through the following sequence for inserting page number: **Insert** / **Page Number** ...
- 5) Use Text Box for charts and tables. Creating text box and pasting charts into the text box will help you to have better control in arranging charts in your report. To view drawing box that contains the text box button, click and select through View / Toolbar / Drawing. Drawing tool bar is the bar near the bottom of the picture show below. To create a text box, simply click on the text box button, and then click anywhere in your WORD document and drag you pointer to create a box.

To format the text box: Right click on the edge of the text box and select **Format Text Box** to format the box. My prefer settings are: for **Colors and Lines: no color fill and no line fill** **Layout: In front of text.** After the text box is made, one can drag and move the box in any where of the document.

Click this button in the drawing tool bar for text box.

Drawing tool bar

- 6) Click with r
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sequence to produce a mathematical equation with mathematical symbols: **Insert** / **Object** / **Microsoft Equation 3.0**
Example: $\sum_{i=1}^n \sqrt{x_i}$

There are more to explore in MS-WORD. You should start getting use to using a word processor to write your projects and papers.