

Quantitative Methods (GEO 441)






SPSS Lab 1: SPSS Basics and Graphics

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Please copy the file **S:\GEO\Marr\Quantitative Methods\SPSS Example Data\Intro and Graphing.xls** to your portable media.

Start SPSS.

1. Data Entry
 - a. Importing data files
 - b. Manual data entry
2. SPSS *Variable View* panel
 - a. Adding a new variable
 - i. Create a new variable called *Body*
 - b. Changing variable properties (type, width, decimals, measurement)
 - i. Change the properties of *Body* to *string, 15, nominal*
 - c. Labeling variables
 - i. Label *Age_Yrs* as *Age*, *Fare_Price* as *Pounds_Sterling*
 - d. Value coding
 - i. Code *Sex* as *M = Male, F = Female*
3. Transforming and Computing Values
 - a. *Transform > Compute Variable* (string data)
 - i. Compute *Body* variable from *Remains*, change codes to description
 - b. *Transform > Recode...* (numeric data)
 - i. Compute a new numeric variable *Body_Code* from *Remains*
 - c. *Transform > Compute Variable*
 - i. Calculate a new numeric variable *USD* from *Fare_Price* ($\text{GBP}_{2011} = 80.98$, $\text{USD}_{2011} = 0.649$)
4. Subsetting Data
 - a. *Data > Select cases...*
 - i. Subset *Group* = "Passenger"
 - ii. Examine *Filter* variable
5. Creating Graphs
 - a. Scatterplot (*Pounds_Sterling* v *USD*)
 - i. Open the Graph Editor, add regression line, add x,y mean lines, delete, change colors, etc...
 - b. Boxplot (*Pounds_Sterling* v *ClassDept*)
 - c. Histogram (*Pounds_Sterling* with normal curve)
 - d. Bar Graph (Summaries for groups of cases = *ClassDept*)
 - e. Population Pyramid 1 (Show Distribution Over = *ClassDept*, Split by = *Status*)
 - f. Population Pyramid 2 (Show Distribution Over = *Age*, Split by = *Status*)
 - g. Population Pyramid 3 (Select cases *Status* = "Died" and *Group* = "Passenger", Show Distribution Over = *Age*, Split by = *Sex*, Panel by = *ClassDept*)
 - h. Population Pyramid 4 (Select cases *Group* = "Crew", Show Distribution Over = *Age*, Split by = *Status*, Panel by = *ClassDept*)
 - i. Select cases, *Group* = "Passenger"

- j. Q-Q plot, *Analyze > Descriptive Statistics > Q-Q Plot (Pounds_Sterling)*
 - i. Normal Q-Q plot
 - ii. Detrended Q-Q plot
- 6. Editing Graphs
 - a. Double click on the *Detrended Q-Q plot* to open the *Graph Editor*.
 - b. Set the background to **white**.
 - c. Change the line weight to **1.5** and the style to '**small dashes**' and the color to **red**.
 - d. Set the marker type to be **squares**, the fill to be **blue**, and the size to **6**.
 - e. Change the title from Pounds_Sterling to '**Titanic Ticket Prices**'.
 - f. Change the x-axis scale minimum to **-100**.
 - g. Click on the  button and the click on the outlier observation. Highlight all of the cases in the popup window and click **Ok**.
 - h. Go back to the *Data Editor* window. *Data > Sort Cases*. Move Pounds_Sterling to the *Sort by:* field. Set the *Sort Order* to **Descending**. Click **Ok**.
 - i. Go to the *Data Editor* window. Activate the *Graph Editor*.
 - i. Note that these 4 cases are the same as the top 4 cases in the *Data Editor*.
 - j. Click on the lasso  tool and draw a circle around the outlier marker group.
 - k. Right click on the marker group and choose *Select > This marker*.
 - l. Click on the *Marker* tab and change the properties of these markers.
 - m. Click on the Annotation tool  and add annotation to the outlier group.
 - n. Change the annotation properties and move the annotation.
 - o. Click on the reference line tool  and add a reference line at x = 500. Change the properties of the line.
 - p. From the menu, select *Edit > Properties*. Select the *Chart Size* tab and change the chart width to 600 pixels.
 - q. Close the *Chart Editor*.
- 7. Exporting Graphics and Tables
 - a. In the *Output Window*, right click on a graphic and choose **Export**.
 - i. Under *Document, Type* make sure **None (Graphics only)** is selected.
 - ii. Under *Graphics, Type* choose **Enhanced Metafile (*.emf)**.
 - iii. In *Root File Name:* supply a name and navigate to your portable media.
 - iv. Click **Ok**.
 - b. In the *Output Window*, right click on a table and choose **Export**.
 - i. Under *Document, Type* choose **Word/RTF (*.doc)**.
 - ii. In *File Name:* supply a name and navigate to your portable media.
 - iii. Click **Ok**.
- 8. Syntax Window
 - a. *File > New > Syntax*
 - b. Copy subsetting code and Population Pyramid 4 code to Syntax window, highlight code to execute, run.
- 9. A Helpful Tip
 - a. Click on the  button. This gives a quick list of recent commands.