You will be using SPSS to complete Projects 2, 3, and 4. But where to start? Have no fear. This brief tutorial is here to help you do everything you need to do to successfully complete Project 2.

Note

This guide was written using SPSS Version 22 for Windows. The basic instructions to complete the statistical tests should be the same. Opening files may vary between versions and operating systems. Regardless, I suggest playing around with SPSS to learn it a bit on your own before to attempting to complete Project 2.

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1. Opening Your Data

After SPSS is installed on your computer, open the program.



Next, open the examplename.sav file (this file is posted available on Canvas). SPSS should open a dialogue that shows your "Recent Files" and the option to "Open another file...". If you have recently opened up the data set, you can just click on it and then say OK. If not, click "Open another file...", find the file, and then click "Open".



The data in this example is labeled GSSforStats.sav – however your data could have a different name!!!

data.

Once the file is open, you should be able to see all of your

This is called the "Data Editor" view. I've included a screenshot for what this should look like, using a different data set.

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SPSS will also open up another window, called the "Output Viewer." When you run your analyses, they will appear here.



2. How to view Variables by 'Variable Name' rather than 'Variable Label'

To make your life easier, I strongly recommend setting up SPSS to show you **Variable Names** rather than **Variable Labels**. When conducting your analyses, it will be much easier to find your variables this way.

To do this, first click on "Edit" under the Data Editor viewer.

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Next, click "Options".

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SPSS will bring up a new dialogue window. From here, click on the "General" tab at the top, then look for the "Variable Lists" box. Click on "Display names". Then "OK".

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3. How to make frequency distributions

To run a frequency distribution, click on "Analyze", then "Descriptive Statistics", and then "Frequencies...".

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Next, find the variable you want to analyze. It will show the 'variable name' in your list. For this example, I will analyze the variable CREGION. Click on the variable name you would like to analyze (it will highlight the variable), and then click on the \rightarrow arrow.

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Then click "OK" to run the frequency distribution.

Helpful tip: you can run more than one frequency distribution if you would like, just select more variables. For simplicity, and until you are comfortable, I recommend doing one at a time.

The frequency distribution will appear in the Output Viewer window.



Look at all that has been presented. We can see that N=866. We can also see how many cases were in the Northeast, Midwest, South, and West. We can also see the percent of cases and the cumulative percent. "Valid Percent" should be the same as "Percent" in your data set, since I have manually removed all missing cases (that's also why 'Missing' will equal zero in the GSS data set I have given you – *in real life, we have to figure out what to do with missing cases, but that is beyond the scope of this course*).

4. How to find measures of central tendency and variability

SPSS will also run all of the measures of central tendency and variation you need. However, that does not mean that a particular test is the 'right' one. *It is your job to make sure you use the correct measure of central tendency and measure of variation, depending on the type of variable you have. SPSS will typically run things because you tell it to, even if it is not a statistically sound test.*

4a. Mean, Standard Deviation, Variance, Range

To have SPSS tell you the mean value of a variable, go to the Data Editor view. Then, click on "Analyze", "Descriptive Statistics", then "Descriptives...".



Then, SPSS will bring up the "Descriptives" dialogue. Find the variable you want to analyze, then click the \rightarrow arrow to bring it to the 'Variables' column. In this case, I will be finding the mean of then S2PCTRD variable.

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Before analyzing the data, click on "Options." This will allow you to also find out the standard deviation, variance, and range.

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SPSS will bring up a new dialogue. Make sure to check the boxes of everything you would like to know. Once you are finished, click "Continue".



SPSS will bring up the "Descriptives" dialogue from a moment ago. Click "OK" to finish.



The output will appear in the Output Viewer. Notice that we see the N (560), range = 100, minimum (*which is the smallest score*) = 0, maximum (*which is the greatest score*) = 100, the mean = 64.01, the standard deviation (labeled as *Std. Deviation*) = 23.476, and the variance = 551.111.

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4b. Median and Mode

To find the median and the mode, we have to use "Frequencies" just like we had to do to find the frequency distribution. I am going to use the S2PCTRD variable here. Then, click on "Statistics...".

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SPSS will bring up a new dialogue window. Look at all the options! If you want to know the Median and Mode, click on those boxes. You can also use this dialogue to find out quartiles, percentiles, standard deviation, variance, range, minimum, maximum, and the mean. Once you're done, click "Continue".

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Then, click "OK"

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The median and mode will appear in the Output Viewer, in the "Statistics" box. The median is 69 and the mode is 80.

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4c. Interquartile Range

To find the interquartile range, we go back to the Data Editor window, click on "Analyze", then "Descriptive Statistics", and finally, "Explore...".

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Select the variable you want to use here. I will be using the variable S2SCORES (this variable has 3 categories). Then, make sure under "Display" you have either "Both" or "Statistics" selected. Next, click OK.

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Go back to the Output viewer. In a list of statistics, the interquartile range will be reported. In this case, the IQR is 1.

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5. Data Visualizations

SPSS will also create professional graphics for you, using your own data. The first steps to create graphs in SPSS are the same, regardless of whether you are trying to create a bar chart, pie chart, or a histogram.

5a. Bar Chart

First, return to the Data Editor, click on "Graphs", then "Legacy Dialogs", and then "Bar...".

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SPSS will bring up the following window. For our purposes, "Simple" is fine. Tell SPSS that you want the data in chart to be "Summaries for groups of cases" and then click "Define".



Next, find the variable that you want to use to create a bar chart. I will use CREGION. Click on the \rightarrow arrow for "Category Axis", after selecting your variable. Make sure you also have "N of Cases" selected for "Bars Represent."

Define Simple Bar: Summaries for Groups of Cases											
 Define Simple Bar: Summaries for Groups of Cases Define Simple Bar: Summaries for Groups of Cases Bars Represent CREGION N of cases % of cases © Qum. N © Cum. % © Qum. N © Cum. N © Cum. % © Qum. N © Category Agis: © SzkENRLK © SzkENRCH © Cum. Nest variables (no empty columns) © Cum. Nest variables (no empty columns) 	Titles Options										
Template Use chart specifications from: Elle											
OK Paste Reset Cancel Help											

Next, we need to create Titles for our bar chart. Click on "Titles".

Bars Represent WIREAL R Source Compared Statistice (s. mean) Source Compared Statistice Source Com

SPSS will bring up the following dialogue. Since I am creating a bar chart for census regions, I'm going to name the chart "Census Regions". Click "Continue" when you are finished.

Define Simple Bars Summaries for Groups of Case Bars Represent N of cases Quim. N Other statistic (e.g., mean) Statistic (e.g., mean) Variable Variable	Vidth Desimals Label	
Bars Represent Titles © CRECION © Um. N © Cother statistic (e.g., mean) © Cum % © Other statistic (e.g., mean) Variable Title Title Uin 1: census Regions Uin 2: gubute: Footnote cance Help Mestvariables (no empty columns) Variables Variables SzPRKNDR Mestvariables (no empty columns) Continue Cancel Use chart specifications from: geset Concel Help	ta Define Simple Bar: Summaries for Groups of Cases	
OK Paste Cancel Help	Define Simple Bar: Summaries for Groups of Cases Bars Represent Itiles Oregion Contenses Oum. N Outer statistic (e.g., mean) Subtitle: Footnote Line 1: Census Regions Line 2: Continue Cancel Help SzPRKNDR Nest variables (no empty columns) Template	
OK Paste Reset Cancel Help	Use chart specifications from:	
	OK Paste Reset Cancel Help	CTA 212

This will return you back to the Simple Bar dialogue. Click "OK" to create your bar chart.

SPSS will display you bar chart in the Output viewer.

SPSS How-to Instructions -- Toothman



5b. Pie Charts

To create a pie chart, first click on "Graphs", then "Legacy Dialogs" and finally, "Pie...".

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	<u>File E</u> dit	<u>V</u> iew <u>D</u> ata	Transform	<u>A</u> nalyze [Direct <u>M</u> arketi	ing	<u>G</u> raphs	<u>U</u> tilities	Add- <u>o</u> ns	<u>W</u> indow	<u>H</u> elp	
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	382	S267A1B3	Numeric	2	0	S2 0	Regre	ssion vari	able Plots		{-9. NOT ASCERTAINED}	
	383	S267A1B4	Numeric	2	0	S2 C	Lega	cy Dialogs			🚹 <u>B</u> ar	
	384	S267A1B5	Numeric	2	0	S2 C	267 DISTR	ICT INPUT	HIRE/FIRE	CRITERIA	11 <u>3</u> -D Bar	
	385	S267A1B6	Numeric	2	0	S2 C	Q67 COMN	NITTEE INF	PT HIRE/FIF		A 🚅 Line	
	386	S267A2B1	Numeric	2	0	S2 C	267 PRINC	IPAL INPU	UT FOR TEX	TBOOKS	Area	
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	388	S267A2B3	Numeric	2	0	S2 C	067 PARE	NT INPUT	FOR TEXTE	BOOKS	Pie	
	389	S267A2B4	Numeric	2	0	S2 C	Q67 SCHO	OL BOAR	D INPUT FO	OR TEXTBO	High-Low	
	390	S267A2B5	Numeric	2	0	S2 C	067 DISTR	ICT INPUT	FOR TEXT	BOOKS	🗰 Bo <u>x</u> plot	
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	392	S267A3B1	Numeric	2	0	S2 C	067 PRINC	IPAL INPU	UT ON STA	NDARDS	Population Pyramid	
	393	S267A3B2	Numeric	2	0	S2 C	067 TEACH	HER INPU	T ON STAN	DARDS	Scatter/Dot	
	394	S267A3B3	Numeric	2	0	S2 C	067 PARE	NT INPUT	ON STAND	ARDS	- Histogram	
	395	S267A3B4	Numeric	2	0	S2 0	067 SCHO					

SPSS will bring up the following dialogue. Select "Summaries for groups of cases" and then "Define".



For the most part, the steps are identical to creating a bar chart. Select the variable you want to create a pie chart for, then click the \rightarrow arrow below "Define Slices by:". Create a title (as you did with a bar chart) and then click "OK".



Your pie chart will appear in the Output Viewer.



5c. Line Graphs

To create a line graph, first click "Graphs", then "Legacy Dialogs" and finally "Line...".

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	382	S267A1B3	Numeric	2	0	S2 0	Regres	ssion variabi	e Plots			{-9. NOT	ASCERTAINE	D}
	383	S267A1B4	Numeric	2	0	S2 0	<u>L</u> egac	y Dialogs		•	F	<u>B</u> ar		
	384	S267A1B5	Numeric	2	0	S2 0	267 DISTRI	CT INPUT H	IRE/FIRE	CRITERIA	I	<u>3</u> -D Bar		
	385	S267A1B6	Numeric	2	0	S2 0	Q67 COMM	ITTEE INPT	HIRE/FIR	E CRITERI	2	Line		
	386	S267A2B1	Numeric	2	0	S2 0	067 PRINCI	PAL INPUT	FOR TEX	TBOOKS		Aroo		

SPSS will bring up the following dialogue. For our purposes, a "simple" line graph is sufficient. Make sure "summaries for groups of cases" is selected.



SPSS will bring up a familiar dialogue. For this, select the variable you want to create a line graph for, then click the \rightarrow arrow next to "Category Axis." In this example, I am going to use the S2PCTRD variable from earlier. Make sure you create a "Title", and then when you are finished, click OK.

SPSS will create your line graph and it will appear in the Output Viewer.





To create a histogram, from the Data Editor window, click on "Graphs", then "Legacy Dialogs" and finally "Histogram...".

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<u>F</u> ile	<u>E</u> dit	<u>V</u> iew <u>D</u> ata	Transform	<u>A</u> nalyze [Direct <u>M</u> arketi	ing	<u>G</u> raphs	<u>U</u> tilities	Add- <u>o</u> ns	<u>W</u> indow	<u>H</u> elp
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3	382	S267A1B3	Numeric	2	0	S2 G	Regre	ession varia	able Plots		{-9. NOT ASCERTAINED}
3	383	S267A1B4	Numeric	2	0	S2 G	<u>L</u> ega	cy Dialogs		•	📲 <u>B</u> ar
3	384	S267A1B5	Numeric	2	0	S2 0	067 DISTR	ICT INPUT	HIRE/FIRE	CRITERIA	11 3-D Bar
3	385	S267A1B6	Numeric	2	0	S2 0	67 COMN	NITTEE INF	PT HIRE/FIR		Line
3	386	S267A2B1	Numeric	2	0	S2 C	67 PRINC	IPAL INPU	JT FOR TEX	TBOOKS	
3	387	S267A2B2	Numeric	2	0	S2 0	67 TEAC	HER INPU	T FOR TEXT	TBOOKS	
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3	389	S267A2B4	Numeric	2	0	S2 G	67 SCHO	OL BOAR	D INPUT FO	OR TEXTBO.	High-Low
3	390	S267A2B5	Numeric	2	0	S2 G	067 DISTR	ICT INPUT	FOR TEXT	BOOKS	🗰 Bo <u>x</u> plot
3	391	S267A2B6	Numeric	2	0	S2 0	67 COM	NITTEE INF	PUT FOR TE	EXTBOOKS	III Err <u>o</u> r Bar
3	392	S267A3B1	Numeric	2	0	S2 G	67 PRINC		JT ON STAN	NDARDS	Population Pyramid
3	393	S267A3B2	Numeric	2	0	S2 G	67 TEAC	HER INPU	T ON STAN	DARDS	Scatter/Dot
3	394	S267A3B3	Numeric	2	0	S2 G	67 PARE	NT INPUT	ON STAND	ARDS	
	395	S267A3B4	Numeric	2	0	S2 0	67 SCHO	OL BOAR			Histogram

SPSS will bring up the following dialogue. Select the variable you want to use to create your histogram, and click the arrow next to "Variable". Click "Title" to create a title for your histogram. When you are finished, click OK.



SPSS will create your histogram in the Output Viewer window.

