PROJECT 2: UNIVARIATE STATISTICS REPORT

GUIDEBOOK

For this project, you will be asked to present statistical information about three different variables tapped in our Global Values survey. For each variable, you will need to produce a **frequency distribution** (chapter 2), a **graph** (chapter 2), a measure of **central tendency** best describing the scores on that variable (chapter 3), a measure of **variability** best describing the variation in scores on that variable (chapter 4), and a **reflection** summarizing what these statistics indicate about your sample and broader population. This project embodies learning goals and objectives 1, 2, 3, and 7 as listed in the syllabus.

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REQUIRED MATERIALS

- A word processing program to type up your final **REPORT** (e.g., Microsoft Word)
- The data analysis program **SPSS**
- The data **FILE** (.sav file located on Canvas) containing all of the variables and scores from the sample
- The **CODEBOOK** (SECTION B) containing a list of the variables and values you may use
- **ANALYSIS INSTRUCTIONS** (SECTION C) explain how to use SPSS
- Your **NOTES** from lessons 1 through 4
- The **RUBRIC** (SECTION D)
- A project **EXAMPLE** (SECTION E)

SECTION A: PROJECT INSTRUCTIONS

Description. For this project, you will be asked to present statistical information about three different variables tapped in our Global Values survey. For each variable, you will need to produce a **frequency table** (chapter 2), a **graph** (chapter 2), a measure of **central tendency** best describing the scores on that variable (chapter 3), a measure of **variability** best describing the variation in scores on that variable (chapter 4), and a **reflection** summarizing what these statistics indicate about your sample and broader population.

Organization. Your final report will be organized by variable. The following is how your report will be organized:

- PART ONE: Nominal Variable
  - Frequency table for the nominal variable (5 points)
  - Graph/chart (5 points)
  - Measure of central tendency (5 points)
  - Measure of variability (5 points)
  - Results/Reflection (10 points)
- PART TWO: Ordinal Variable
  - Frequency Table for the ordinal variable (5 points)
  - Graph/chart (5 points)
  - Measure of central tendency (5 points)
  - Measure of variability (5 points)
  - Results/Reflection (10 points)
- PART THREE: Interval/Ratio Variable
  - Frequency table for the interval/ratio variable (5 points)
  - Graph/chart (5 points)
  - Measure of central tendency (5 points)
  - Measure of variability (5 points)
  - Results/Reflection (10 points)

Stepwise instructions. You will need to start by reviewing the codebook (SECTION B) and selecting the following types of variables: One variable measured at the **nominal** level, one variable measured at the **ordinal** level, and one **variable** measured at the interval-ratio level. You can determine the level of measurement for each variable by reviewing the "Response categories" column in the codebook. For each variable (for a total of three), walk through the following steps:

STEP 1: Produce a legible and informative **Frequency Table**. You may copy & paste the SPSS table or construct your own in Excel. Each table should contain the following:

- A title (e.g., "Table 1: Nominal Variable – Favorite Political Candidate, N=50")
- For a review on frequency tables, refer to LESSON 2
- For step-by-step instructions on how to produce a frequency table in SPSS, refer to SECTION C

STEP 2: Produce an appropriate **Graph**. You must select the appropriate type of graph for each variable (for a total of three different graphs). You may copy & paste the SPSS output. Each figure should contain the following:

- A title (e.g., "Figure 1: Nominal Variable – Favorite Political Candidate, N=50")
- For a review on how to select an appropriate graph for each type of variable, refer to LESSON 2

- For step-by-step instructions on how to produce a graph in SPSS, refer to SECTION C

STEP 3: Report and describe the most appropriate **measure of central tendency**. The selected measure of central tendency should be the most precise or optimal for each variable based on level of measurement. This part of your report should contain the following:

- Two sentences describing the measure of central tendency, what it means, and why it's appropriate for this type of variable.
- For a review on how to describe and select a measure of central tendency for each different type of variable, refer to LESSON 3
- For step-by-step instructions on how to compute these measures in SPSS, refer to SECTION C

STEP 4: Report and describe the most appropriate **measure of variability**. Select and report the most appropriate measure of variability for each of your three variables, if applicable. This part of your report should contain the following:

- Two sentences describing the measure of variability, what it means, and why it's appropriate for this type of variable. If a measure of variability is not appropriate for your variable, you must clearly explain why.
- For a review on how to describe and select a measure of variability for each different type of variable, refer to LESSON 4
- For step-by-step instructions on how to compute these measures in SPSS, refer to SECTION C

STEP 5: Provide a **reflection**. For each variable, you will need to compose a paragraph of interpretation. Specifically, you need to compose five-to-seven sentences discussing and reflecting on each variable's their frequencies, measures of central tendency, and variability. Think about the following when you compose your reflections: What did you learn about your data by calculating frequencies, measures of central tendency and variability? What do the measures of central tendency tell you about your data? Measures of variability? What do these measures say about the population of our sample (e.g., you statistics class). Can you infer information about any type of population from this sample? Why? Why not? This portion will demonstrate your statistical literacy – you can compute statistics – now tell me what these statistics indicate about each of your variables.

SECTION B: CODEBOOK

A codebook contains all possible variables in a given data set. Typically, codebooks will contain descriptive measures, but since your job is to report those, I've left them out of this codebook. I've included summary tables in the first part and the full questionnaire in the second part. Read over both parts and the SPSS data file in order to learn the most about your data. In a later project, you will be asked to compare local and global data, so I included the types of countries included in the global sample in the column labeled, "Special Notes."

These questions appeared in the Pew Research Center's survey on Global Attitudes and Trends for 2014. To learn more about this survey, go to: http://www.pewglobal.org/category/datasets/2014/

Socio-Demographic Data

Code	Variable Description	Response Categories
q133	Age	Count in years
q132	Gender	Man/Woman
	Race	
RACE1	White (e.g., Caucasian, European, Irish, Italian, Arab, Middle Eastern)	0=no; 1=yes
RACE2	Black or African-American (e.g., Negro, Kenyan, Nigerian, Haitian)	0=no; 1=yes
RACE3	Asian or Asian-American (e.g., Asian Indian, Chinese, Filipino, Vietnamese or other Asian origin groups)	0=no; 1=yes
RACE5	Native American/American Indian/Alaska Native	0=no; 1=yes
RACE6	Pacific Islander/Native Hawaiian	0=no; 1=yes
RACE7	Hispanic/Latino (e.g., Mexican, Puerto Rican, Cuban)	0=no; 1=yes
q153	Marital Status	6 categories
q157	Number of children	Count in number
q140	Employment Status	7 categories
IDEO	Political Standing	5 categories
	Household Resources	
q148_a	Television	0=no; 1=yes
q148_b	Refrigerator	0=no; 1=yes
q148_c	Washing Machine	0=no; 1=yes
q148_d	Microwave Oven	0=no; 1=yes
q148_e	Computer	0=no; 1=yes
q148_f	Car	0=no; 1=yes
q148_g	Bicycle	0=no; 1=yes
q148_h	Motorcycle/Scooter	0=no; 1=yes
q148_i	Radio	0=no; 1=yes
q68	Cell Phone	0=no; 1=yes

Global Questions

Codes	Variable Name	Categories
	Satisfaction with…	
q4a	Standard of living	Range 0 to 10
q4b	Family life	Range 0 to 10
q4c	Health	Range 0 to 10
q4d	Social Life	Range 0 to 10

q4e	Present job	Range 0 to 10
q4f	Religious life	Range 0 to 10
q4g	Safety of Neighborhood	Range 0 to 10
q4h	Quality of Schools	Range 0 to 10
q6	Dangers of the world	5 categories
q11	When children grow up	3 categories
q13	Economic perspectives	4 categories of agreement
	Important aspects of life	
q14a	Job	Range 0 to 10
q14b	Travel	Range 0 to 10
q14c	Internet	Range 0 to 10
q14d	Cell Phone	Range 0 to 10
q14e	Free time	Range 0 to 10
q14f	Help others	Range 0 to 10
q14g	Own home	Range 0 to 10
q14h	Good education	Range 0 to 10
q14i	Own car	Range 0 to 10
q14j	Money in old age	Range 0 to 10
q14k	Good health	Range 0 to 10
q14l	Safe from crime	Range 0 to 10
	Country's Problems	
q21a	Crime	4 categories
q21b	Corrupt political leaders	4 categories
q21c	Poor quality schools	4 categories
q21e	Air pollution	4 categories
q21f	Water pollution	4 categories
q21g	Safety of food	4 categories
q21h	Health care	4 categories
q21i	Traffic	4 categories
q21j	Electricity shortages	4 categories
	How important are each to get ahead	
q66a	Good education	Range 0 to 10
q66b	Work hard	Range 0 to 10
q66c	Know the right people	Range 0 to 10
q66d	Give bribes	Range 0 to 10
q66e	Be male	Range 0 to 10
q66f	Belong to wealthy family	Range 0 to 10
q66g	Be lucky	Range 0 to 10
	Used the Internet to	
q71a	buy product online	0=no; 1=yes
q71b	get news about politics	0=no; 1=yes
q71c	make payments	0=no; 1=yes
q71d	information about health	0=no; 1=yes
q71e	look/apply for job	0=no; 1=yes

q71f	stay in touch w/ family	0=no; 1=yes
q71g	info about public services	0=no; 1=yes
q71h	take an online class	0=no; 1=yes
	Influence of internet	
q75a	morality	None, good, bad
q75b	politics	None, good, bad
q75c	economy	None, good, bad
q75d	education	None, good, bad
q75e	personal relationships	None, good, bad
q77	Most important reason for wealth gap	6 categories
q77b	How to reduce wealth gap	3 categories
q90	Satisfaction w/political system	4 categories

---STA2122 Global Survey Questions---

Q133 In years, how old were you at your last birthday? (code q133)

Q132 Which best describes your gender? (code q132)

- ❍ Man
- ❍ Woman

Which of the following best describes your race and/or ethnicity? You can select up to four that apply. (code RACE)

- ❑ White (e.g., Caucasian, European, Irish, Italian, Arab, Middle Eastern)
- ❑ Black or African-American (e.g., Negro, Kenyan, Nigerian, Haitian)
- ❑ Asian or Asian-American (e.g., Asian Indian, Chinese, Filipino, Vietnamese or other Asian origin groups)
- ❑ Native American/American Indian/Alaska Native
- ❑ Pacific Islander/Native Hawaiian
- ❑ Hispanic/Latino (e.g., Mexican, Puerto Rican, Cuban)

Q153 Which best describes your current marital status? (code q153)

- ❍ Married
- ❍ Legal civil union
- ❍ Widowed
- ❍ Divorced
- ❍ Separated
- ❍ None of these

Q157 How many children have you had? Please count all your biological children who were born at any time in your life.

Q140 Which of the following employment situations best applies to you? (code q140)

- ❍ In paid work
- ❍ Unemployed and looking for a job
- ❍ In education (not paid for by employer), in school, student even if on vacation
- ❍ Apprentice or trainee
- ❍ Permanently sick or disabled
- ❍ Retired
- ❍ Doing housework, looking after the home, children or other persons (not paid)

IDEO In general, would you describe your political views as ... (code IDEO)

- ❍ Very conservative
- ❍ Conservative
- ❍ Moderate
- ❍ Liberal
- ❍ Very liberal

Q148 (a to i) And in your household, do you have any of the following? Count only those that are in working order. (code q148)

- ❑ television
- ❑ refrigerator
- ❑ washing machine
- ❑ microwave oven
- ❑ computer
- ❑ car
- ❑ bicycle
- ❑ motorcycle or scooter
- ❑ radio

Q68 Do you own a cell phone? (code q68)

- ❍ Yes
- ❍ No

Q4 (a to h) On a scale of 0 to 10 how satisfied are you with each of the following, where 0 means you are very dissatisfied and 10 means you are very satisfied? (code q4)

_____ Your present standard of living
_____ Your family life
_____ Your health
_____ Your social life
_____ Your present job
_____ Your religious life
_____ The safety of your neighborhood
_____ The quality of schools where you live

Q6 Now turning to the world situation, here is a list of five dangers in the world today. In your opinion, which one of these poses the greatest threat to the world – the spread of nuclear weapons, religious and ethnic hatred, AIDS and other infectious diseases, pollution and other environmental problems, or the growing gap between the rich and poor. (code q6)

- ❍ Spread of nuclear weapons
- ❍ Religious and ethnic hatred
- ❍ AIDS and other infectious diseases
- ❍ Pollution and other environmental problems
- ❍ Growing gap between the rich and poor

Q11 When children today in your country grow up, do you think they will be better off or worse off financially than their parents? (code q11)

- ❍ Better off
- ❍ Worse off
- ❍ Same

Q13 Please tell me whether you completely agree, mostly agree, mostly disagree or completely disagree with the following statements: a. Most people are better off in a free market economy, even though some people are rich and some are poor
b. Success in life is pretty much determined by forces outside our control. (code q13)

- ❍ Completely agree
- ❍ Mostly agree
- ❍ Mostly disagree
- ❍ Completely disagree

Q14 (a to l)Some people say the following things are important to them. On a scale of 0 to 10, how important is each thing to you personally, where 0 means not important at all and 10 means very important. (code q14)

_____ To have a fulfilling job
_____ To be able to travel
_____ To have internet access
_____ To own a cell phone
_____ To have free time for yourself
_____ To help other people who are in need
_____ To own your own home
_____ To have a good education for you children
_____ To own your own car
_____ To have money for old age
_____ To have good health
_____ To be safe from crime

Q21 (a to j) Now I am going to read you a list of things that may be problems in our country. As I read each one, please tell me if you think it is a very big problem, a moderately big problem, a small problem or not a problem at all. (code q21)

	Very Big Problem	Moderately Big Problem	Small Problem	Not a problem at all
crime	❍	❍	❍	❍
corrupt political leaders	❍	❍	❍	❍
poor quality schools	❍	❍	❍	❍
air pollution	❍	❍	❍	❍
water pollution	❍	❍	❍	❍
safety of food	❍	❍	❍	❍
health care	❍	❍	❍	❍
traffic	❍	❍	❍	❍
electricity shortages	❍	❍	❍	❍

Q66 (a to g) On a scale of 0 to 10, in your opinion, how important is it _____ to get ahead in life. The number 0 means not important at all and 10 means very important? (q66)

_____ TO HAVE A GOOD EDUCATION
_____ TO WORK HARD
_____ TO KNOW THE RIGHT PEOPLE
_____ TO GIVE BRIBES
_____ TO BE A MALE
_____ TO BELONG TO A WEALTHY FAMILY
_____ TO BE LUCKY

Q71 (a to h) In the past 12 months, have you used the Internet to... (code q71)

	Yes	No
buy a product online	❍	❍
get news and information about politics	❍	❍
make or receive payments	❍	❍
get information about health and medicine for you or your family	❍	❍
look for or apply for a job	❍	❍
stay in touch with family and friends	❍	❍
get information about fovernment or public services	❍	❍
take an online class or an online course that leads to a certificate	❍	❍

Q75 (a to e) In general, what kind of influence has the increasing use of the Internet in our country had on each of the following things. Has the increasing use of the Internet had a good influence, a bad influence, or no influence at all? (code q75)

	Type of Influence		
	None	Bad	Good
MORALITY	❍	❍	❍
POLITICS	❍	❍	❍
THE ECONOMY	❍	❍	❍
EDUCATION	❍	❍	❍
PERSONAL RELATIONSHIPS	❍	❍	❍

Q77 In your opinion, which one of the following is the most important reason for the gap between the rich and the poor in our country today? (code q77)

- ❍ Trade and business ties between countries
- ❍ Our government's economic policies
- ❍ How much workers are paid
- ❍ Our educational system
- ❍ Our tax system
- ❍ Some people work harder than others

Q77b What would do more to reduce the gap between the rich and the poor in our country? High taxes on the wealthy and corporations to fund programs that help the poor OR Low taxes on the wealthy and corporations to encourage investment and economic growth? (code 77b)

- ❍ High taxes to fund programs for poor
- ❍ Low taxes to encourage investment and growth
- ❍ Neither/Both equally

Q90 How satisfied are you with the way the political system is working in this country? Are you very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied? (code q90)

- ❍ Very Satisfied
- ❍ Somewhat Satisfied
- ❍ Somewhat Dissatisfied
- ❍ Very Dissatisfied

SECTION C: ANALYSIS INSTRUCTIONS

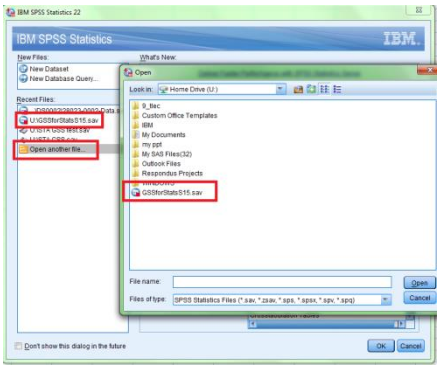
This section contains the following instructions:

1. How to open data files in SPSS
2. *How to view Variables by 'Variable Name' rather than 'Variable Label'*
3. How to make frequency distributions
4. How to find measures of central tendency and variability
    a. Mean, Standard Deviation, Variance, Range
    b. Median and Mode
    c. Interquartile Range
5. Data visualizations
    a. Bar Chart
    b. Pie Chart
    c. Line Graphs
    d. Histograms

1. Opening Your Data

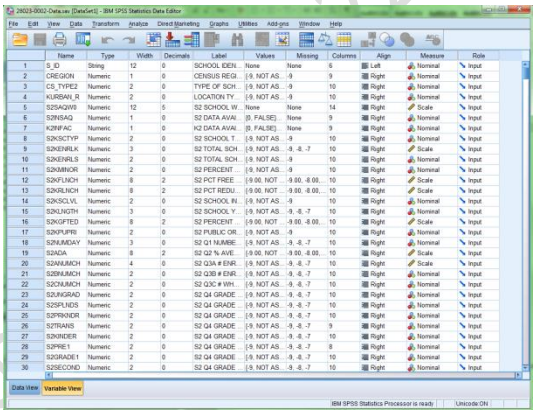
After SPSS is installed on your computer, open the program.

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."

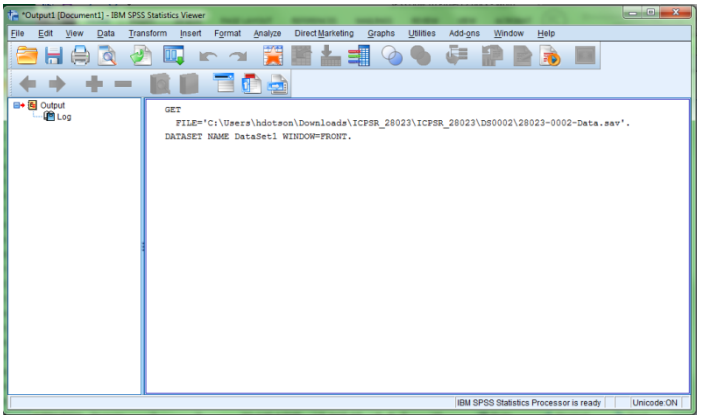


The data in this example is labeled GSSforStats.sav – however your data could have a different name!!!

Once the file is open, you should be able to see all of your data. This is called the "Data Editor" view. I've included a screenshot for what this should look like, using a different data set.



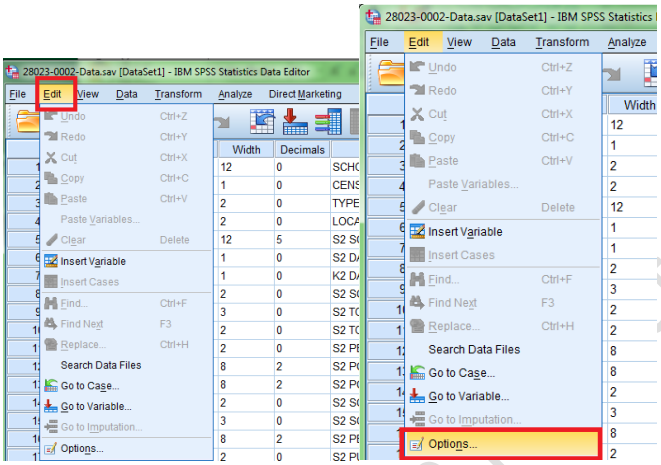
SPSS will also open up another window, called the "Output Viewer." When you run your analyses, they will appear here.



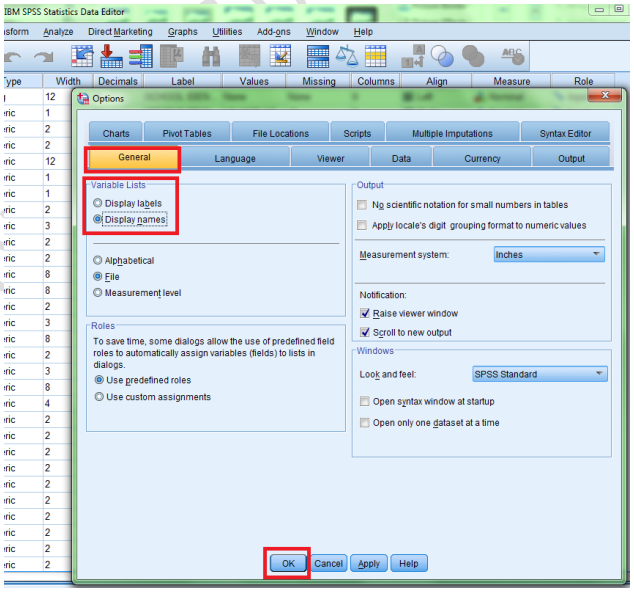
2. How to view Variables by 'Variable Name' rather than 'Variable Label'

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. Next, click "Options."

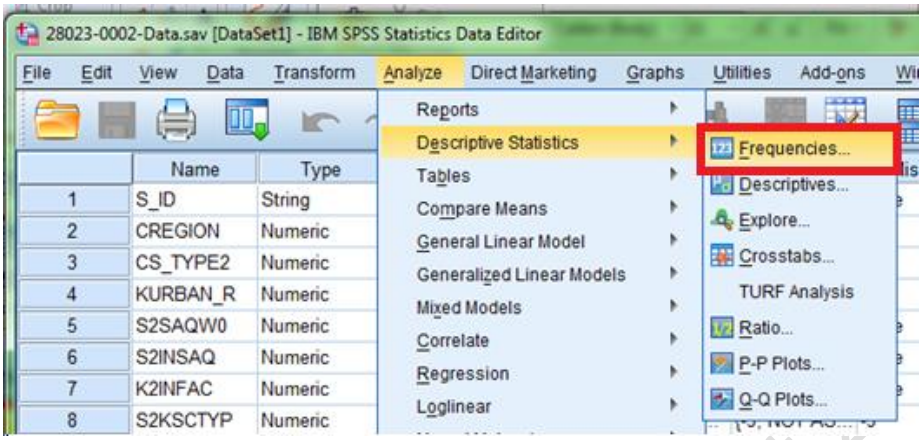


SPSS will bring up a new dialogue window. From here, click on the "General" tab at the top, then look for the "Variable Lists" box. Click on "Display names." Then "OK."

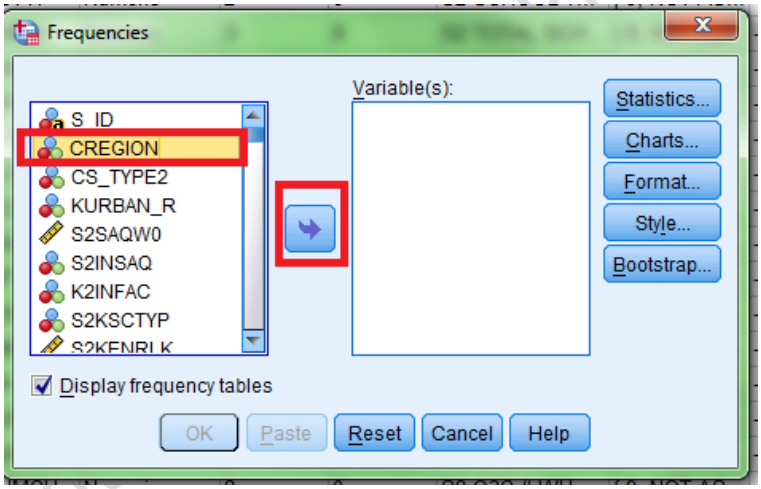


3. How to make frequency distributions

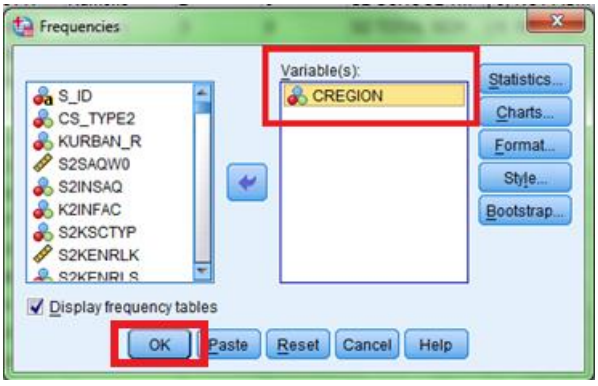
To run a frequency distribution, click on "Analyze", then "Descriptive Statistics", and then "Frequencies…."



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 → arrow.



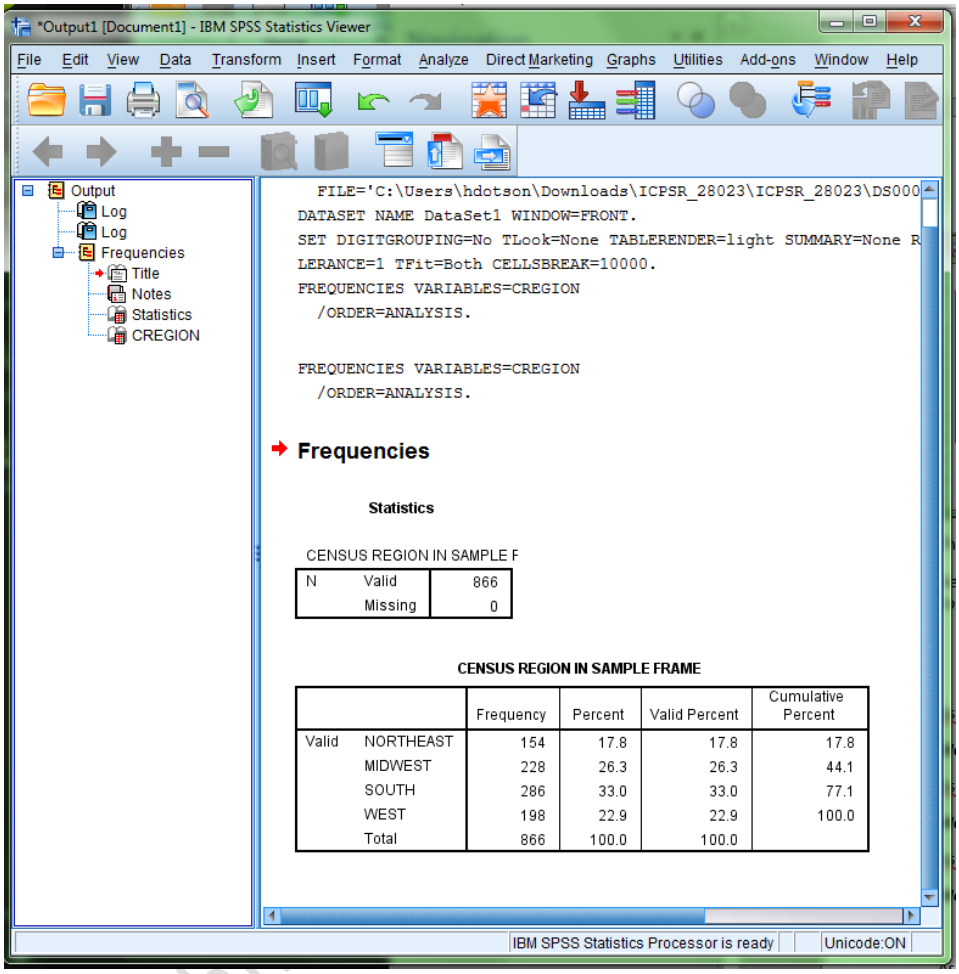
Notice what happens after you click the → arrow:



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.



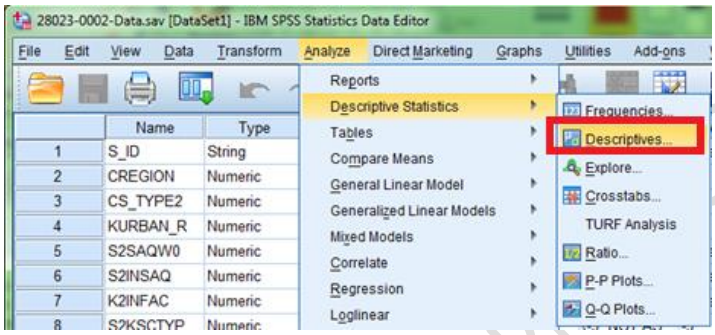
Look at all that has been presented. We can see that N=866. We can also see how many cases were in the Northeast, Midwest, South, and West. We can also see the percent of cases and the cumulative percent. "Valid Percent" should be the same as "Percent" in your data set, since I have manually removed 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

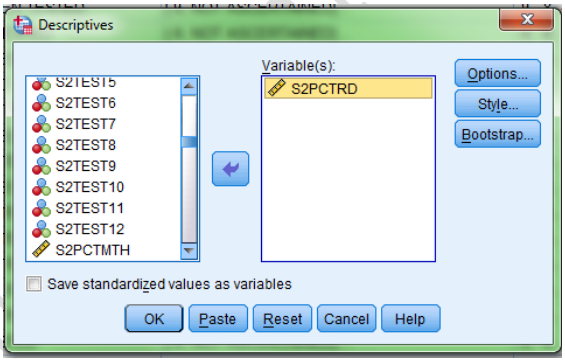
SPSS will also run all of the measures of central tendency and variation you need. However, that does not mean that a particular test is the 'right' one. *It is your job to make sure you use the correct measure of central tendency and measure of variation, depending on the type of variable you have.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

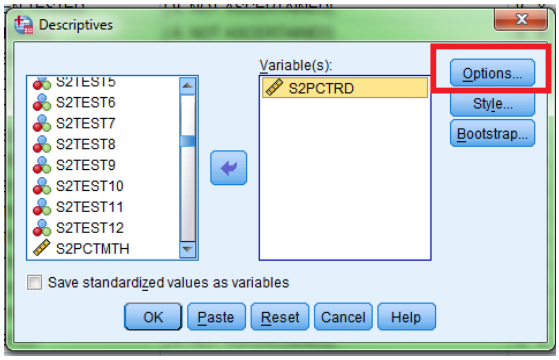
To have SPSS tell you the mean value of a variable, go to the Data Editor view. Then, click on "Analyze", "Descriptive Statistics", then "Descriptives...."



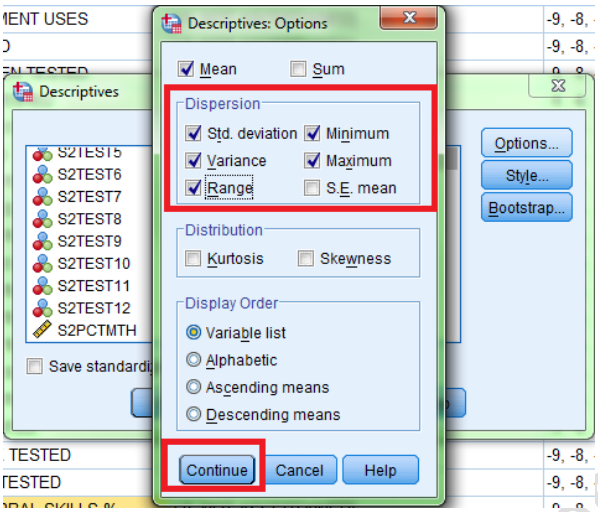
Then, SPSS will bring up the "Descriptives" dialogue. Find the variable you want to analyze, then click the → arrow to bring it to the 'Variables' column. In this case, I will be finding the mean of then S2PCTRD variable.



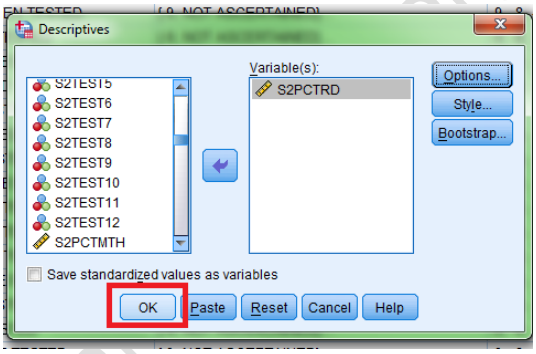
Before analyzing the data, click on "Options." This will allow you to also find out the standard deviation, variance, and range.



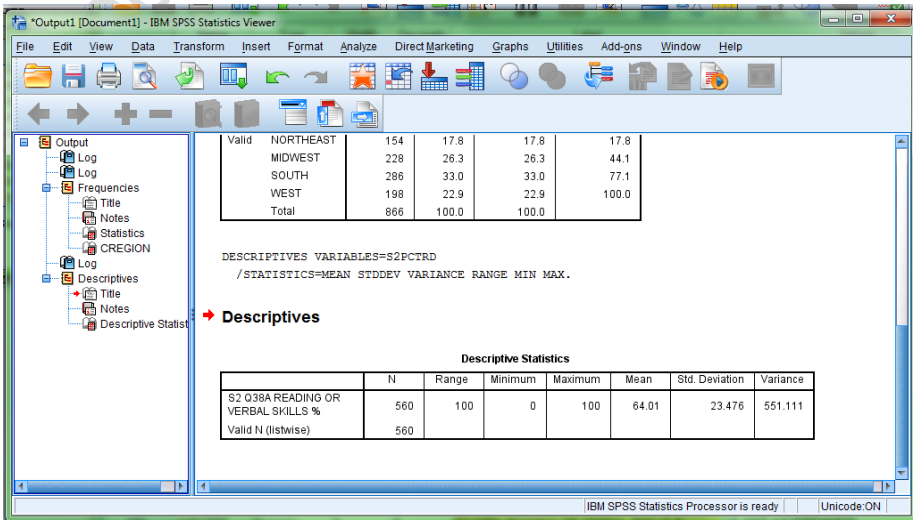
SPSS will bring up a new dialogue. Make sure to check the boxes of everything you would like to know. Once you are finished, click "Continue."



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

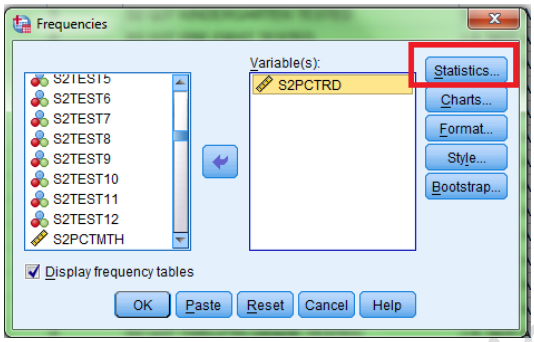


The output will appear in the Output Viewer. Notice that we see the N (560), range = 100, minimum (*which is the smallest score)* = 0, maximum (*which is the greatest score*) = 100, the mean = 64.01, the standard deviation (labeled as *Std. Deviation*) = 23.476, and the variance = 551.111.

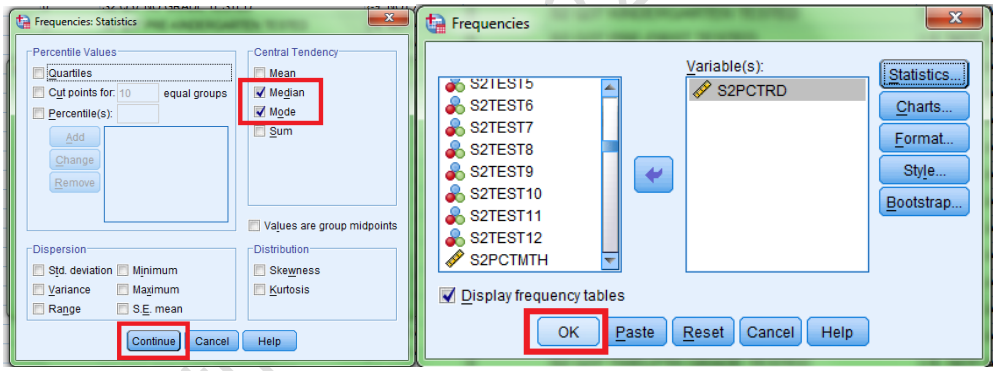


4b. Median and Mode

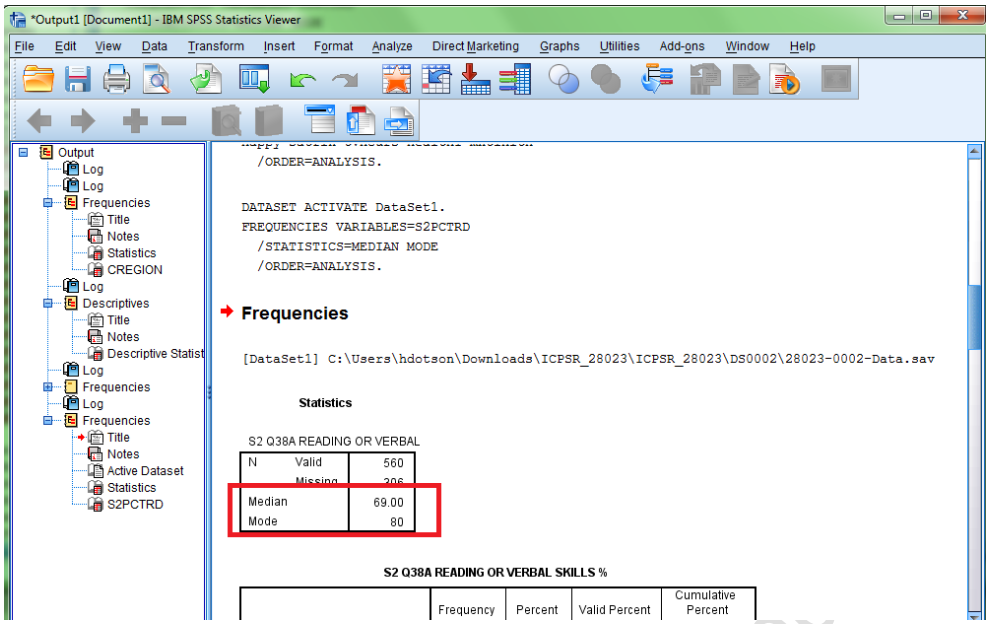
To find the median and the mode, we have to use "Frequencies" just like we had to do to find the frequency distribution. I am going to use the S2PCTRD variable here. Then, click on "Statistics…."



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." Then, click "OK"

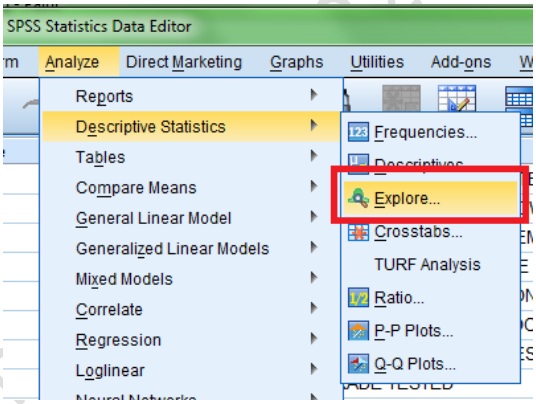


The median and mode will appear in the Output Viewer, in the "Statistics" box. The median is 69 and the mode is 80.

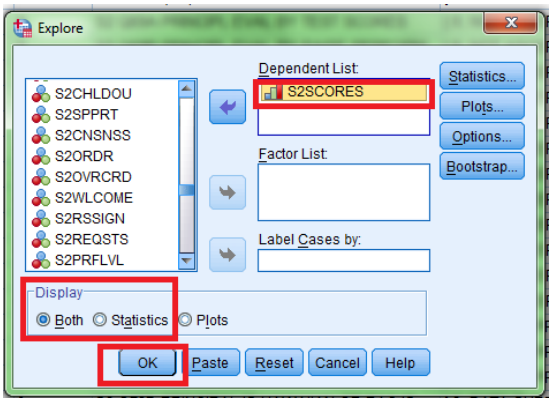


4c. Interquartile Range

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



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.



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

Descriptives

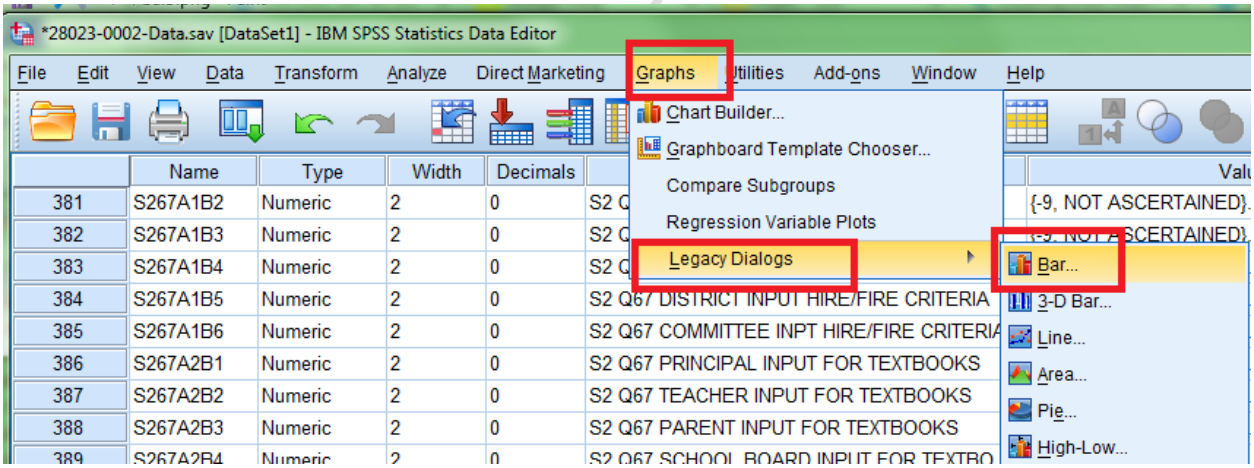
			Statistic	Std. Error
S2 Q69A PRINCIPL EVAL BY TEST SCORES	Mean		2.02	.025
	95% Confidence Interval for Mean	Lower Bound	1.97	
		Upper Bound	2.07	
	5% Trimmed Mean		2.02	
	Median		2.00	
	Variance		.502	
	Std. Deviation		.708	
	Minimum		1	
	Maximum		3	
	Range		2	
	Interquartile Range		1	
	Skewness		-.024	.085
	Kurtosis		-1.002	.171

5. Data Visualizations

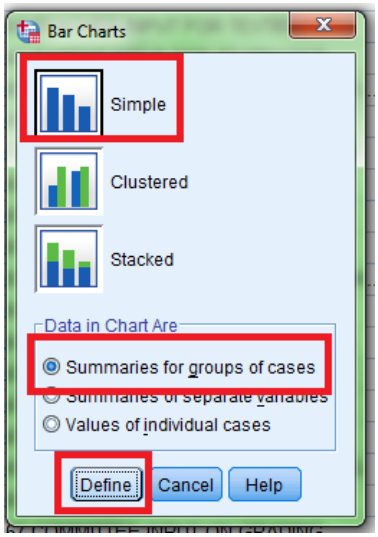
SPSS will also create professional graphics for you, using your own data. The first steps to create graphs in SPSS are the same, regardless of whether you are trying to create a bar chart, pie chart, or a histogram.

5a. Bar Chart

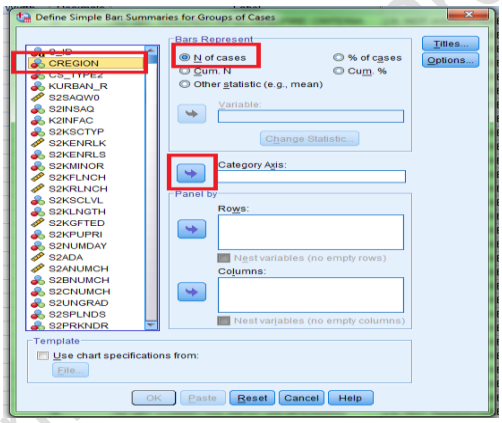
First, return to the Data Editor, click on "Graphs", then "Legacy Dialogs", and then "Bar…."



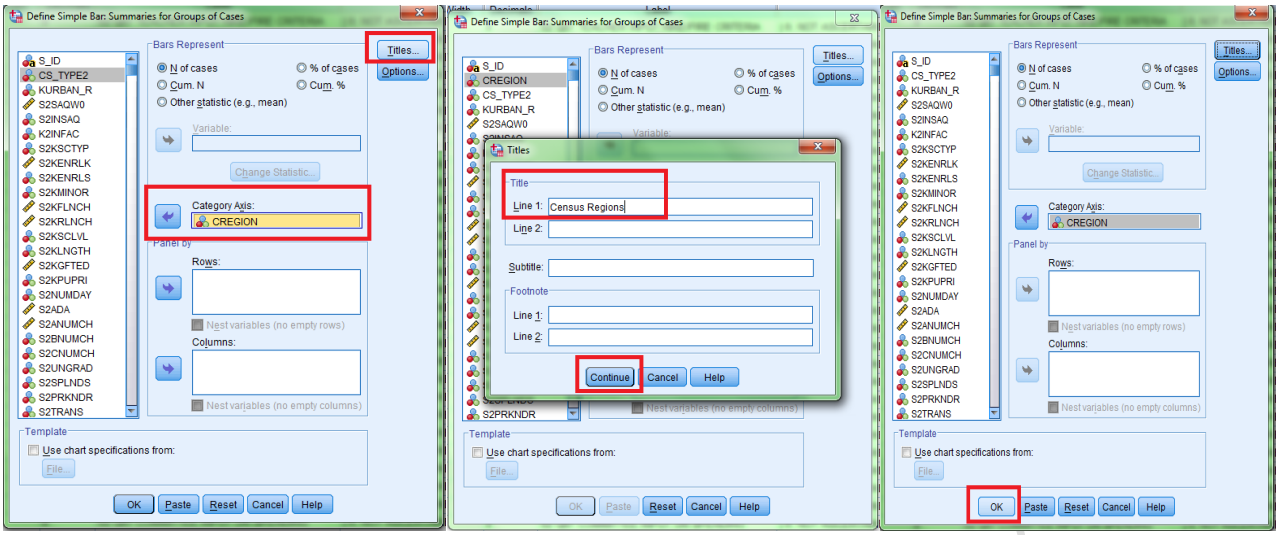
SPSS will bring up the following window. For our purposes, "Simple" is fine. Tell SPSS that you want the data in chart to be "Summaries for groups of cases" and then click "Define."



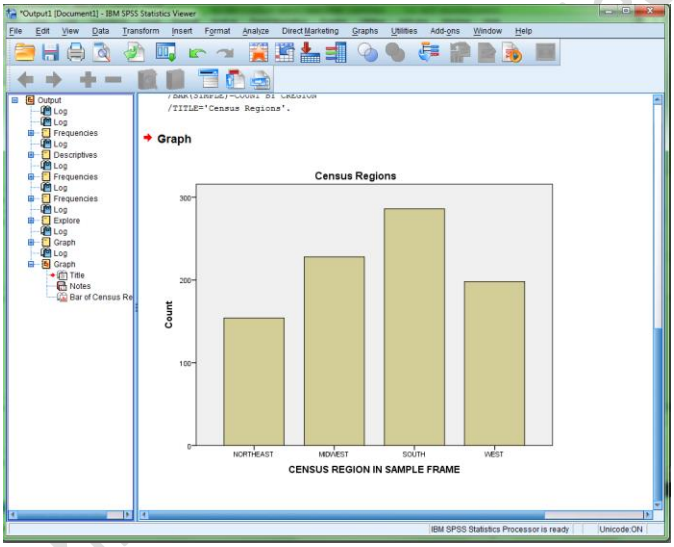
Next, find the variable that you want to use to create a bar chart. I will use CREGION. Click on the → arrow for "Category Axis", after selecting your variable. Make sure you also have "N of Cases" selected for "Bars Represent."



Next, we need to create Titles for our bar chart. Click on "Titles." 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. This will return you back to the Simple Bar dialogue. Click "OK" to create your bar chart.

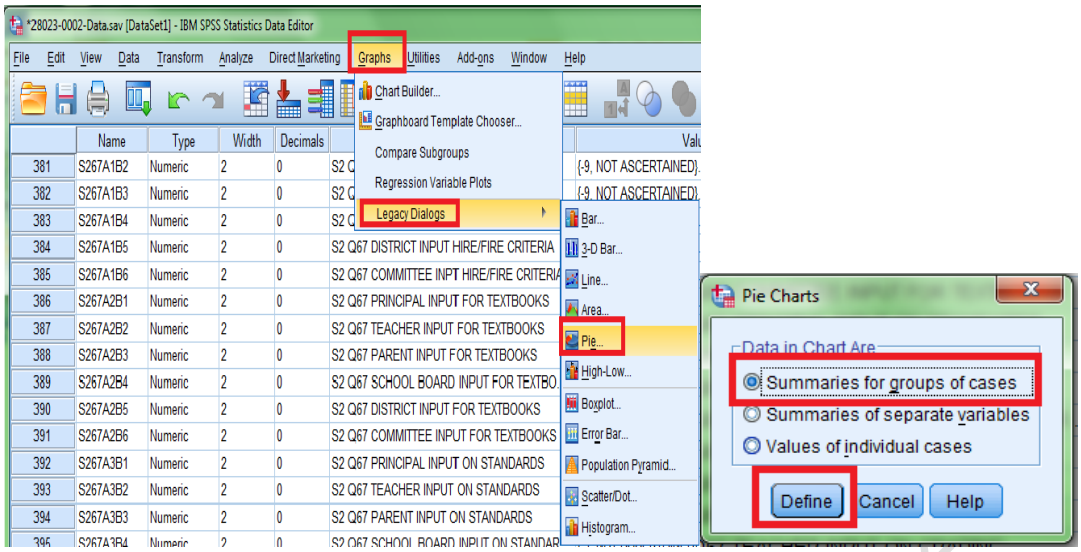


SPSS will display you bar chart in the Output viewer.

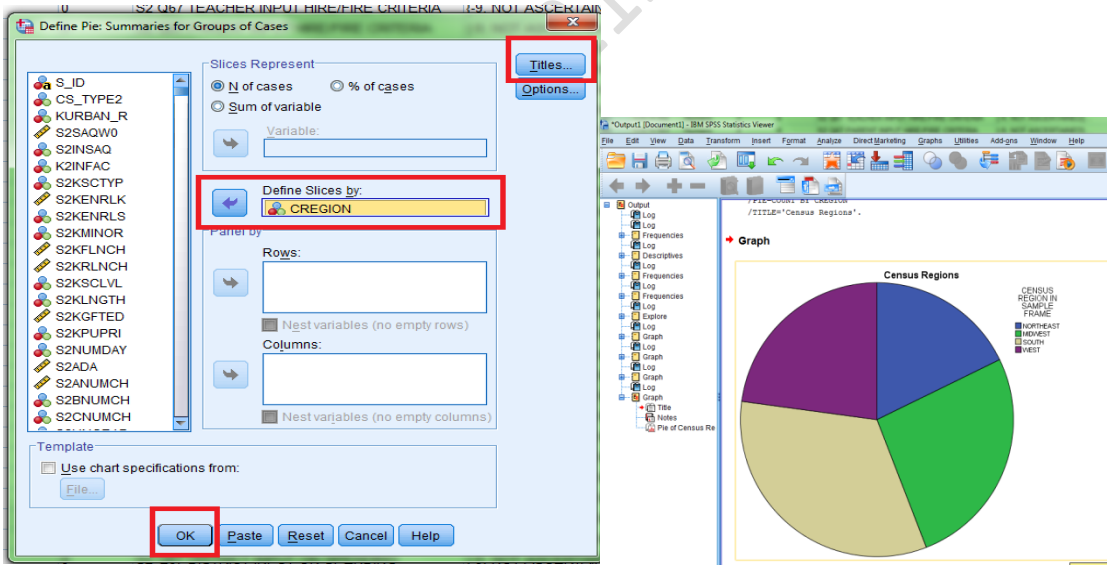


5b. Pie Charts

To create a pie chart, first click on “Graphs”, then “Legacy Dialogs” and finally, “Pie…” SPSS will bring up the following dialogue. Select “Summaries for groups of cases” and then “Define.”

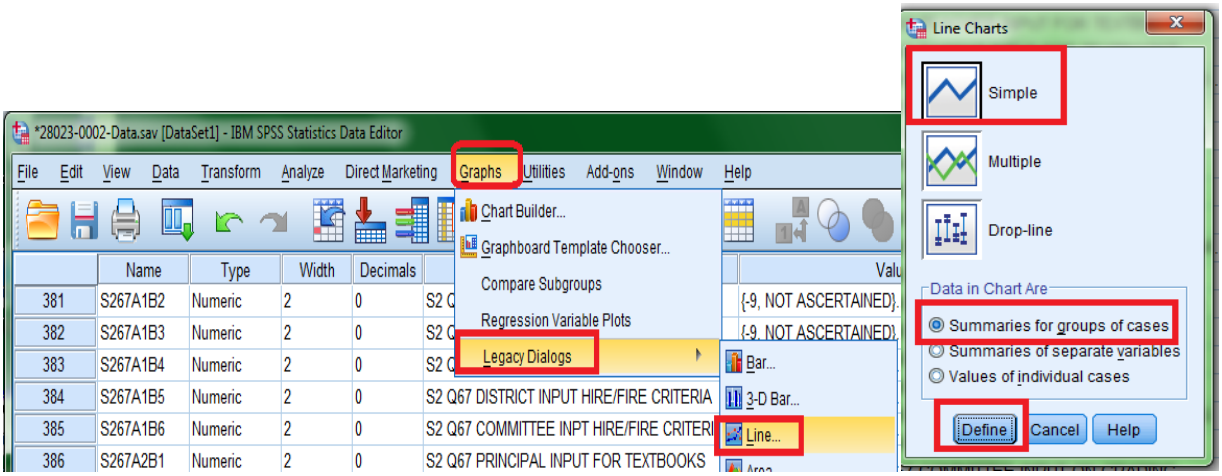


For the most part, the steps are identical to creating a bar chart. Select the variable you want to create a pie chart for, then click the → arrow below "Define Slices by:." Create a title (as you did with a bar chart) and then click "OK." Your pie chart will appear in the Output Viewer.



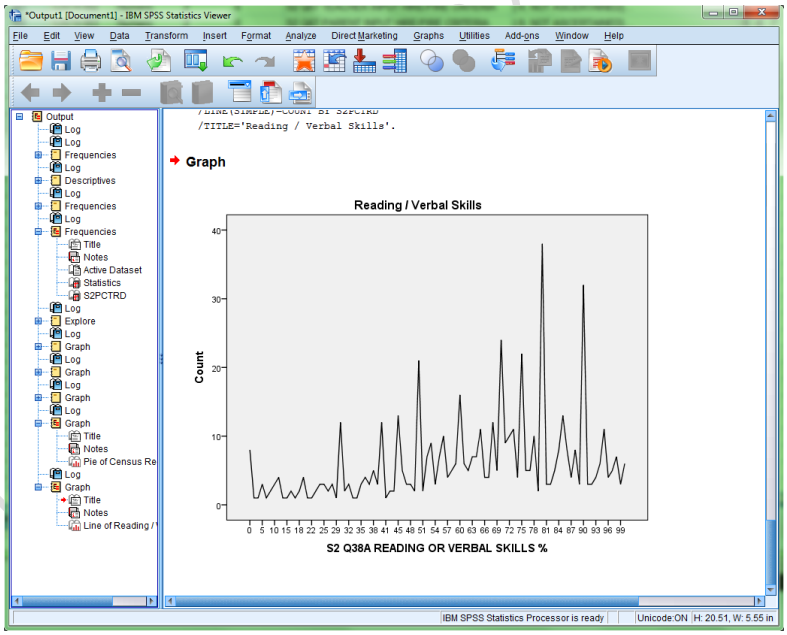
5c. Line Graphs

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



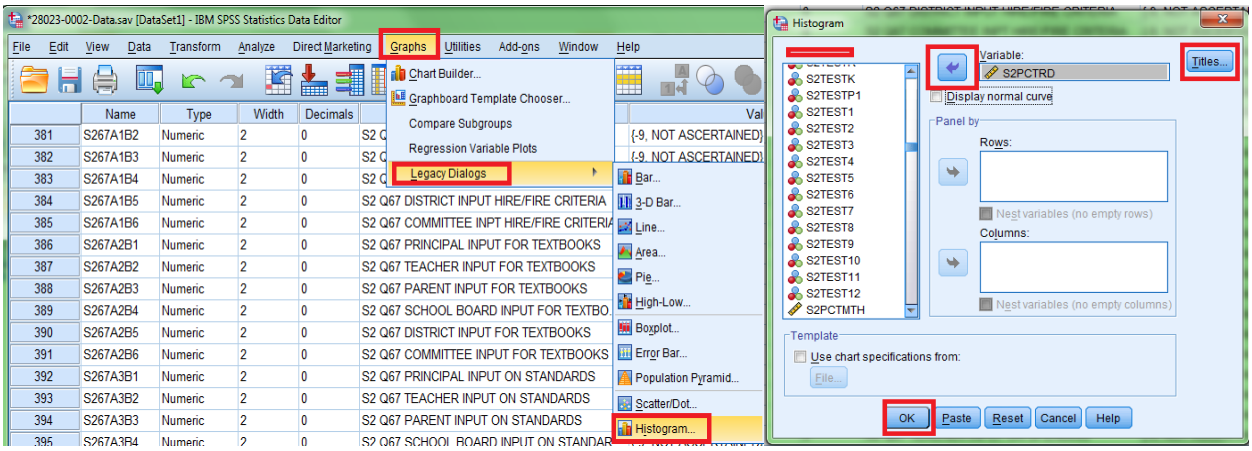
SPSS will bring up a familiar dialogue. For this, select the variable you want to create a line graph for, then click the → arrow next to "Category Axis." In this example, I am going to use the S2PCTRD variable from earlier. Make sure you create a "Title", and then when you are finished, click OK.

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

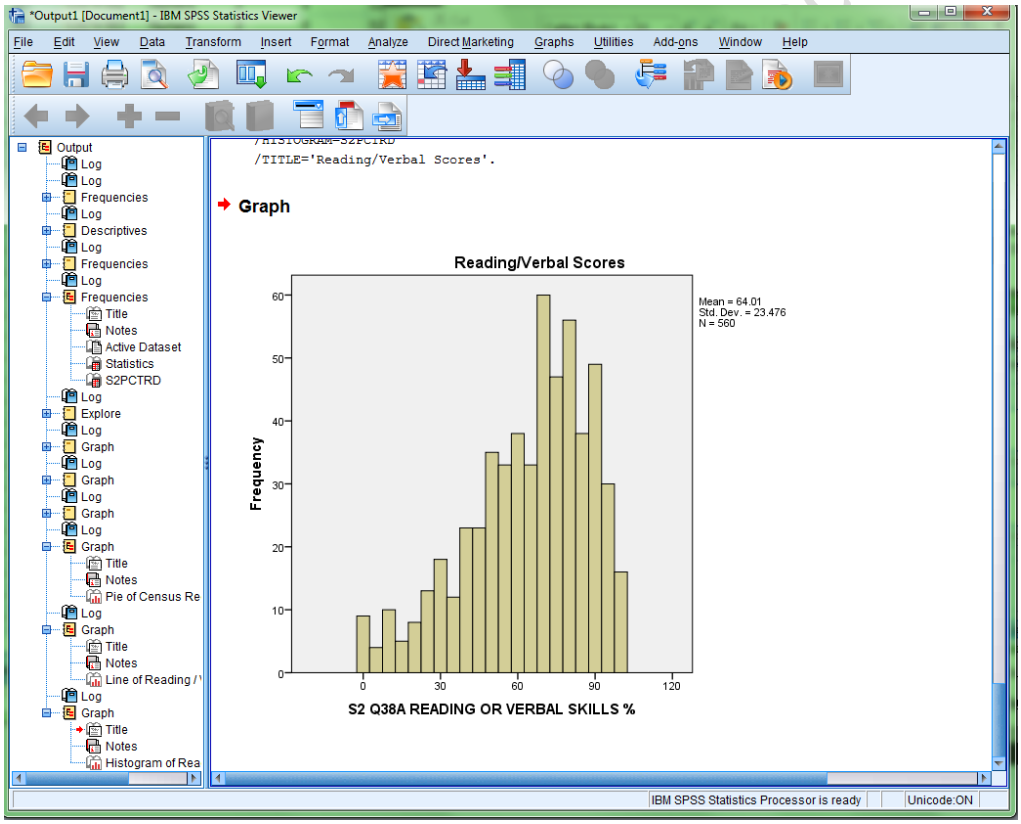


5d. Histograms

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



SECTION D: RUBRIC

NOMINAL VARIABLE (If an inappropriate variable is selected, you will receive half credit for this section.)				
Frequency Distribution. FULL CREDIT: The frequency distribution includes all required components. The table has a title. All numeric values are correct. The categories / class-intervals presented are arranged in a logical order. If class-intervals should be used, they have been used appropriately. HALF CREDIT: The frequency distribution table does not include all required components. It may be missing a title, or have some numeric values missing or incorrect. NO CREDIT: More than one required component is missing.	5	2.5	0	
Graph. FULL CREDIT: The selected graph is the MOST appropriate for the variable's level of measurement. It is legible. A reasonable title was included. HALF CREDIT: The selected graph is reasonable, but not the most appropriate for the variable's level of measurement. It may be missing a title. NO CREDIT: More than one required component is missing.	5	2.5	0	
Central Tendency. FULL CREDIT: The measure of central tendency is the most precise choice for the variable's level of measurement. The numeric value and/or selected category is correct. The description and application demonstrate mastery of the subject. Half Credit: The measure of central tendency is not the most precise choice for the variable's level of measurement, but the description is apt. NO CREDIT: The numeric value / category is not at all correct for the measure of central tendency reported. The description reflects incomplete understanding of measures of central tendency.	5	2.5	0	
Variability. FULL CREDIT: The measure of variability is the most precise choice for the variable's level of measurement. The numeric value and/or selected category is correct. The description and application demonstrate mastery of the subject. Half Credit: The measure of variability is not the most precise choice for the variable's level of measurement, but the description is apt. NO CREDIT: The numeric value / category is not at all correct for the measure of variability reported. The description reflects incomplete understanding of measures of variability.	5	2.5	0	
Reflection. CHECK-PLUS. Response demonstrates mastery of subject matter. The interpretation is between 5 to 7 sentences. It uses appropriate statistical language. It is clear and thorough. The author interprets 1) the graphic, 2) the measures of central tendency and variability, 3) the sample and population implicated. CHECK. Typical effort. Response demonstrates average, though correct, understanding of subject matter. The interpretation is superficial or contains fewer-than-required sentences. CHECK-MINUS. Below-average effort. Response demonstrates incomplete or incorrect understanding of subject matter. The interpretation is less than effective.	10	7.5	5	0
ORDINAL VARIABLE (If an inappropriate variable is selected, you will receive half credit for this section.)				
Frequency Distribution. FULL CREDIT: The frequency distribution includes all required components. The table has a title. All numeric values are correct. The categories / class-intervals presented are arranged in a logical order. If class-intervals should be used, they have been used appropriately. HALF CREDIT: The frequency distribution table does not include all required components. It may be missing a title, or have some numeric values missing or incorrect. NO CREDIT: More than one required component is missing.	5	2.5	0	
Graph. FULL CREDIT: The selected graph is the MOST appropriate for the variable's level of measurement. It is legible. A reasonable title was included. HALF CREDIT: The selected graph is reasonable, but not the most appropriate for the variable's level of measurement. It may be missing a title. NO CREDIT: More than one required component is missing.	5	2.5	0	
Central Tendency. FULL CREDIT: The measure of central tendency is the most precise	5	2.5	0	

choice for the variable's level of measurement. The numeric value and/or selected category is correct. The description and application demonstrate mastery of the subject. Half Credit: The measure of central tendency is not the most precise choice for the variable's level of measurement, but the description is apt. NO CREDIT: The numeric value / category is not at all correct for the measure of central tendency reported. The description reflects incomplete understanding of measures of central tendency.				
Variability. FULL CREDIT: The measure of variability is the most precise choice for the variable's level of measurement. The numeric value and/or selected category is correct. The description and application demonstrate mastery of the subject. Half Credit: The measure of variability is not the most precise choice for the variable's level of measurement, but the description is apt. NO CREDIT: The numeric value / category is not at all correct for the measure of variability reported. The description reflects incomplete understanding of measures of variability.	5	2.5	0	
Reflection. CHECK-PLUS. Response demonstrates mastery of subject matter. The interpretation is between 5 to 7 sentences. It uses appropriate statistical language. It is clear and thorough. The author interprets 1) the graphic, 2) the measures of central tendency and variability, 3) the sample and population implicated. CHECK. Typical effort. Response demonstrates average, though correct, understanding of subject matter. The interpretation is superficial or contains fewer-than-required sentences. CHECK-MINUS. Below-average effort. Response demonstrates incomplete or incorrect understanding of subject matter. The interpretation is less than effective.	10	7.5	5	0
INTERVAL RATIO VARIABLE (If an inappropriate variable is selected, you will receive half credit for this section.)				
Frequency Distribution. Frequency Distribution. FULL CREDIT: The frequency distribution includes all required components. The table has a title. All numeric values are correct. The categories / class-intervals presented are arranged in a logical order. If class-intervals should be used, they have been used appropriately. HALF CREDIT: The frequency distribution table does not include all required components. It may be missing a title, or have some numeric values missing or incorrect. NO CREDIT: More than one required component is missing.	5	2.5	0	
Graph. FULL CREDIT: The selected graph is the MOST appropriate for the variable's level of measurement. It is legible. A reasonable title was included. HALF CREDIT: The selected graph is reasonable, but not the most appropriate for the variable's level of measurement. It may be missing a title. NO CREDIT: More than one required component is missing.	5	2.5	0	
Central Tendency. FULL CREDIT: The measure of central tendency is the most precise choice for the variable's level of measurement. The numeric value and/or selected category is correct. The description and application demonstrate mastery of the subject. Half Credit: The measure of central tendency is not the most precise choice for the variable's level of measurement, but the description is apt. NO CREDIT: The numeric value / category is not at all correct for the measure of central tendency reported. The description reflects incomplete understanding of measures of central tendency.	5	2.5	0	
Variability. FULL CREDIT: The measure of variability is the most precise choice for the variable's level of measurement. The numeric value and/or selected category is correct. The description and application demonstrate mastery of the subject. Half Credit: The measure of variability is not the most precise choice for the variable's level of measurement, but the description is apt. NO CREDIT: The numeric value / category is not at all correct for the measure of variability reported. The description reflects incomplete understanding of measures of variability.	5	2.5	0	

Reflection. CHECK-PLUS. Response demonstrates mastery of subject matter. The interpretation is between 5 to 7 sentences. It uses appropriate statistical language. It is clear and thorough. The author interprets 1) the graphic, 2) the measures of central tendency and variability, 3) the sample and population implicated. CHECK. Typical effort. Response demonstrates average, though correct, understanding of subject matter. The interpretation is superficial or contains fewer-than-required sentences. CHECK-MINUS. Below-average effort. Response demonstrates incomplete or incorrect understanding of subject matter. The interpretation is less than effective.	10	7.5	5	0
Style and Flow. Project is polished, well-organized, and easy-to-follow. Contains few errors.	10	7.5	5	0

SECTION E: EXAMPLE PROJECT

The following example contains demonstrates how PART 2 might look. Remember, your full project will contain THREE total parts (representing three different variables).

PART TWO: Ordinal Variable: Highest Year of School Completed

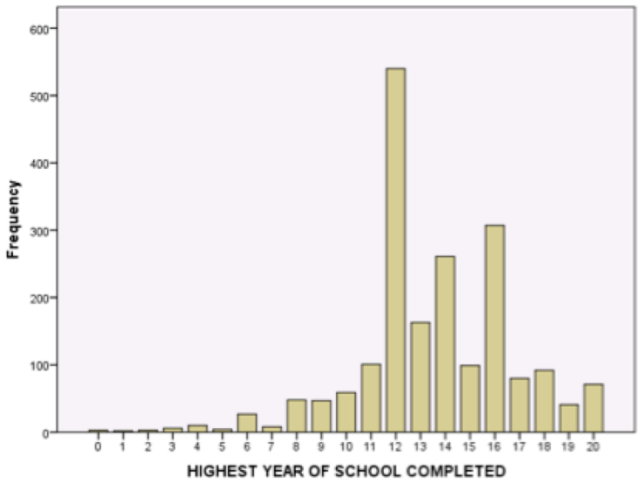
1. Frequency Table

Table 1: Highest Year of School Completed, N=1972

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	.2	.2	.2
	1	2	.1	.1	.3
	2	3	.2	.2	.4
	3	6	.3	.3	.7
	4	10	.5	.5	1.2
	5	4	.2	.2	1.4
	6	27	1.4	1.4	2.8
	7	8	.4	.4	3.2
	8	48	2.4	2.4	5.6
	9	47	2.4	2.4	8.0
	10	59	3.0	3.0	11.0
	11	101	5.1	5.1	16.1
	12	540	27.4	27.4	43.5
	13	163	8.3	8.3	51.8
	14	261	13.2	13.2	65.0
	15	99	5.0	5.0	70.0
	16	307	15.6	15.6	85.6
	17	80	4.1	4.1	89.7
	18	92	4.7	4.7	94.3
	19	41	2.1	2.1	96.4
	20	71	3.6	3.6	100.0
	Total	1972	99.9	100.0	
Missing	DK	1	.1		
	NA	1	.1		
	Total	2	.1		
Total		1974	100.0		

2. Visualization -- Bar Chart

FIGURE 1: Highest Year of School Completed, N=1972



3. Measure of Central Tendency:

HINT: You'll be reporting ONE best measure for your variable -- I'm going to report all three here. If you report all three for each of your variables, you will lose points.

- The **median** is 13 years of education. The median is the best measure of central tendency for _____ types of variables because _____. A value of 13 indicates that _____.
- The **mode** is 12 years of education. The mode is the best measure of central tendency for _____ types of variables because _____. A value of 12 indicates that _____.
- The **mean** is 13.53 years of education. The mean is the best measure of central tendency for _____ types of variables because _____. A value of 13.53 indicates that _____.

4. Measure of Variability:

HINT: You'll be reporting ONE best measure for your variable -- I'm going to report all three here. If you report all four for each of your variables, you will lose points.

- The **range** is 20 years. The range is the best measure of variability for _____ types of variables because _____. A value of 20 indicates that _____.
- The **IQR** is 4. The IQR is the best measure of variability for _____ types of variables because _____. A value of 4 indicates that _____.
- The **standard deviation** is 3.12. The standard deviation is the best measure of variability for _____ types of variables because _____. A value of 3.12 indicates that _____.
- The **variance** is 9.78. The variance is the best measure of variability for _____ types of variables because _____. A value of 9.78 indicates that _____.

5. RESULTS/REFLECTION:

In addition to your discussion of which measures of central tendency and variation you selected (2-3 sentences), you should discuss what the frequencies indicate about you class, U.S. citizens, and people more globally (you can focus on the globe or in other countries, but please avoid baseless and racist generalizations -- DATA DATA DATA!). My data indicate that the most frequent year of completion of school is 12 years (which suggests high school completion). It also appears as though more people have completed more than 12 years of school than fewer than 12 years of school. I believe years of education completed may be related to parent's socioeconomic status (the higher the status may have resulted in more schooling completed by respondent) and parent's education level (i.e., the more schooling completed by parent may have resulted in more schooling completed by respondent). My sample is a random sample of over 1000 US citizens and my results likely reflect the education levels of the US population; however may not reflect the global population which may be different due to types of education and different norms and values across countries.