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.

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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/

Code	Variable Description	Response Categories
q133	Age	Count in years
q132	Gender	Man/Woman 🔪
	Race	
RACE1	White (e.g., Caucasian, European, Irish, Italian,	0=no; 1=yes
	Arab, Middle Eastern)	
RACE2	Black or African-American (e.g., Negro, Kenyan,	0=no; 1=yes
	Nigerian, Haitian)	$\langle \rangle$
RACE3	Asian or Asian-American (e.g., Asian Indian,	0=no; 1=yes
	Chinese, Filipino, Vietnamese or other Asian	0 V
	origin groups)	
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,	0=no; 1=yes
	Cuban)	
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

Socio-Demographic Data

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
a11	When children grow up	3 categories
1		
a13	Economic perspectives	4 categories of agreement
-1 -		
	Important aspects of life	
a14a	Job	Range 0 to 10
a14b	Travel	Range 0 to 10
q14c	Internet	Range 0 to 10
a14d	Cell Phone	Range 0 to 10
014e	Free time	Range 0 to 10
q_{14c}	Help others	Range 0 to 10
<u>q141</u> α14σ	Own home	Range 0 to 10
$\frac{q_1 + g}{a_1 4 h}$	Good education	Range 0 to 10
	Own car	Range 0 to 10
$q_{1}q_{1}$	Money in old age	Range 0 to 10
$q_1 + j$	Good health	Range 0 to 10
q14K	Safa from crima	Range 0 to 10
q141	Sale nom crime	Kalige 0 to 10
-	Country's Problems	\sim
a21a	Country's Froblems	A astagorias
q21a	Community and it is a log dama	4 categories
q210	Door quality schools	4 categories
q21c	Ain pollution	4 categories
q21e	Air pollution Weter reliation	4 categories
q211		4 categories
q21g	Safety of food	4 categories
q_{21n}	Traffic	4 categories
q211		4 categories
q21j	Electricity shortages	4 categories
-		
	How important are each to get ahead	D 0 (10
q66a	Good education	Range 0 to 10
qoob	WORK hard	Range U to 10
q660	Know the right people	Range U to 10
qood	Give bribes	Range U 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
ļ	··· · · · ·	
	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---

Cothman

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

Q132 Which best describes your gender? (code q132)

- O Man
- O Woman

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

- U 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
- Decific Islander/Native Hawaiian
- □ Hispanic/Latino (e.g., Mexican, Puerto Rican, Cuban)

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

- O Married
- O Legal civil union
- Widowed
- O Divorced
- O Separated
- O 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.

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

- **O** In paid work
- **O** Unemployed and looking for a job
- **O** In education (not paid for by employer), in school, student even if on vacation
- **O** Apprentice or trainee
- **O** Permanently sick or disabled
- O Retired
- O 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
- O Conservative
- O Moderate
- **O** Liberal
- O 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
- \Box motorcycle or scooter
- radio

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

- O Yes
- O 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)

- **O** Spread of nuclear weapons
- Religious and ethnic hatred
- AIDS and other infectious diseases
- Pollution and other environmental problems
- **O** 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)

- **O** Better off
- **O** Worse off
- O 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 О
- **O** Mostly agree
- O Mostly disagree
- Completely disagree

Q14 (a to 1)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

project 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	O	0	О	О
corrupt political leaders	0	~ •	О	O
poor quality schools	0	0	О	0
air pollution	0	0	О	0
water pollution	0	0	О	0
safety of food	0	0	О	0
health care	0	0	О	0
traffic	0	0	О	0
electricity shortages	0	0	Ο	0

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	0	0
get news and information about politics	Ο	0
make or receive payments	0	О
get information about health and medicine for you or your family	O	О
look for or apply for a job	0	Ο
stay in touch with family and friends	O	Ο
get information about fovernment or public services	0	Ο
take an online class or an online course that leads to a certificate	O	0

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				
0	0	0				
O	0	0				
O	0	0				
O	0	Ο				
О	o	О				
	None O O O O	Type of InfluenceNoneBadOOOOOOOOOOOOOOOO				

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)

- **O** Trade and business ties between countries
- Our government's economic policies
- **O** How much workers are paid
- Our educational system
- **O** Our tax system
- O 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)

- **O** High taxes to fund programs for poor
- **O** Low taxes to encourage investment and growth
- O 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)

- O Very Satisfied
- O Somewhat Satisfied
- **O** Somewhat Dissatisfied
- Very Dissatisfied

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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

cothman standard

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.

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	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
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3	CS_TYPE2	Numeric	2	0	TYPE OF SCH	(9, NOT AS	. 9	10	All Right	💰 Nominal	> Input
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5	S2SAQW0	Numeric	12	5	S2 SCHOOL W.	None	None	14	All Right	/ Scale	> Input
6	S2NSAQ	Numeric	1	0	S2 DATA AVAI	(0, FALSE)	None	9	ill Right	🚓 Nominal	> Input
7	K2NFAC	Numeric	15	0	K2 DATA AVAL	[0, FALSE]	None	9 .	All Right	Nominal	> Input
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9	S2KENRLK	Numeric	3	0	S2 TOTAL SCH.	(-9, NOT AS	.9, -8, -7	10	3 Right	/ Scale	> Input
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12	S2KFLNCH	Numeric	8	2	S2 PCT FREE	(-9.00, NOT	-9.00, -8.00, -	10	ill Right	# Scale	> Input
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15	S2KLNGTH	Numeric	3	0	S2 SCHOOL Y	[-9, NOT AS	-9, -8, -7	10	I Right	& Nominal	> Input
16	S2KGFTED	Numeric	8	2	S2 PERCENT	(-9.00, NOT	-9.00, -8.00,	10	3 Right	# Scale	> Input
17	S2KPUPRI	Numeric	2	0	S2 PUBLIC OR	(-9, NOT AS	-0	10	all Right	& Nominal	> Input
18	S2NUMDAY	Numeric	3	0	S2 Q1 NUMBE	(-9, NOT AS	-9, -8, -7	10	Right .	& Nominal	> input
19	S2ADA	Numeric	8	2	S2 Q2 % AVE	[-9.00, NOT	-9.00, -8.00,	10	III Right	/ Scale	> Input
20	S2AMUMCH	Numeric	4	0	S2 Q3A # ENR	(-9, NOT AS	9, 8, 7	10	I Right	# Scale	S Input
21	S29NUMCH	Numeric	2	0	\$2 Q38 # ENR	[-9, NOT AS	9, 8, 7	10	週 Right	& Nominal	> Input
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23	S2UNGRAD	Numeric	2	0	S2 Q4 GRADE	[9, NOT AS	9, 8, 7	10	Right Right	& Nominal	> Input
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25	S2PRKNDR	Numeric	2	0	S2 Q4 GRADE	[9. NOT AS	9, 8, -7	10	RE Right	& Nominal	> Input
26	SZTRANS	Numeric	2	0	S2 Q4 GRADE	(-9. NOT AS	-9, -8, -7	9	38 Right	& Nominal	> Input
27	S2KINDER	Numeric	2	0	S2 Q4 GRADE	[9. NOT AS	-9, -9, -7	10	All Right	& Nominal	> Input
28	S2PRE1	Numeric	2	0	S2 Q4 GRADE	-9, NOT AS	-9, -8, -7	8	I Right	& Nominal	> Input
29	S2GRADE1	Numeric	2	0	S2 Q4 GRADE	0. NOT AS	0, 0, 7	10	I Right	& Nominal	> Input
30	S2SECOND	Numeric	2	0	S2 Q4 GRADE	(-9, NOT AS	-9, -8, -7	10	🗃 Right	🚓 Nominal	> Input

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."

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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."



3. How to make frequency distributions

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

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6	S2INSAQ	Numeric	Com	erate		P-P P	lots	в
7	K2INFAC	Numeric	Regr	ession			lote	9
8	S2KSCTYP	Numeric	Logli	inear	1	Q-QP	01 70	

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.

Variable(s): CREGION CS_TYPE2 KURBAN_R SSSAQW0 SSINSAQ KZINFAC SSKSCTYP SSKSCT	Frequencies		×
	S ID CREGION CS_TYPE2 KURBAN_R S2SAQW0 S2INSAQ K2INFAC S2KSCTYP S2KENIRI K Display frequency table	Variable(s):	<u>Statistics</u> <u>C</u> harts <u>F</u> ormat <u>Styl</u> e <u>B</u> ootstrap

Notice what happens after you click the \rightarrow arrow:

💑 S_ID	-	Variable(s):	Statistics
KURBAN_R S2SAQW0 S2INSAQ K2INFAC S2KSCTYP S2KSCTYP S2KENRLK S2KENRLS	*		Eormat Style Bootstrap

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.

1 *Output1 [Document1] - IBM SPSS Stat	istics Viewer		-		-			X		
<u>File E</u> dit <u>V</u> iew <u>D</u> ata <u>T</u> ransform	Insert Forma	it <u>A</u> nalyze	Direct <u>M</u> ark	eting <u>G</u> rap	hs <u>U</u> tilities	Add- <u>o</u> ns	Window	<u>H</u> elp		
😑 🗄 🖨 🙇 🤌	🛄 🗠		📰 📰	*			•			
+ + + - 1										
Image: Second Statistics FILE='C:\Users\hdotson\Downloads\ICFSR_28023\ICFSR_28023\DS Image: Statistics Frequencies Image: Statistics Frequencies Image: Statistics FREQUENCIES VARIABLES=CREGION Image: Statistics Frequencies Image: Statistics Statistics Image: Statistics Frequencies Image: Statistics Statistics Image: Statistics CENSUS REGION IN SAMPLE F Image: Statistics Image: Statistics Image: Statistics CENSUS REGION IN SAMPLE F Image: Statistics Image: Statistics Image: Statistics Image: Statistics										
		С	ENSUS REGIO	N IN SAMPL	E FRAME		:			
			Frequency	Percent	Valid Percen	t Peri	ent			
	Valid NOF	THEAST	154	17.8	17.8	3	17.8			
	MID	VEST	228	26.3	26.3		44.1			
	WES	T I	286	33.0 22.0	33.0	ζΙ.	100.0			
	VVEST 198 22.9 22.9 100.0 Total 866 100.0 100.0									
			IBM SP	SS Statistics	Processor is	ready	Unicode	e:ON		

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...."

e <u>E</u> di	t <u>View D</u> ata	Transform	Analyze	Direct Marketing	Graphs	Utilities	Add-ons		
			Repo	orts	×.				
_	1 (my 14	• -	Desc	criptive Statistics		Frequencies			
	Name	Type	Table	es		Desc	intiues		
1	S_ID	String	Compare Means				iparea		
2	CREGION	Numeric	Con	Constral Linear Model					
3	CS_TYPE2	Numeric	Con	Constalized Linear Medels			rosstabs		
4	KURBAN_R	Numeric	Gene	stanged Enteat mode	15	TURF	Analysis		
5	S2SAQW0	Numeric	Miger	Mixed Models					
6	S2INSAQ	Numeric	Com	elate	- 1	P-P P	lots		
7	K2INFAC	Numeric	Regr	ession	1	ELOOR	late		
8	S2KSCTYP	Numeric	Logli	near	- N	Q-QP	1013		

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.

	Variable(s):	Options Style Bootstrap
Save standardized values as varia	ables <u>R</u> eset Cancel Help)

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

Descriptives	
SZIESI5 SZEST6 SZEST6 SZEST7 SZEST9 SZEST10 SZEST11 SZEST11 SZEST12 SZEST12	 Variable(s): Options Bootstrap
Save standardi <u>z</u> ed va	lues as variables Paste Reset Cancel Help

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.

Descriptives		<u> </u>								
S21ES15 S2TEST6 S2TEST7 S2TEST8 S2TEST9 S2TEST10 S2TEST10 S2TEST11 S2TEST12 ✓ S2PCTMTH	Variable(s):	Options Style Bootstrap								
Save standardized values as variables										

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.

*Output1 [Document1] - IBM SP	SS Statis	stics Viewer					<u>er 1818</u>					X
<u>File Edit View Data Tr</u> a	ansform	n <u>I</u> nsert	F <u>o</u> rmat	Analyze	Dire	ct <u>M</u> arketing	<u>G</u> raphs	<u>U</u> tilities	Add- <u>o</u> ns	Window Help)	
😑 🗄 🖨 🗟 🤞	2					▙		• 4	•			
* * * -	Q		7									
🗉 🖲 Output		Valid N	IORTHEAST		154	17.8	17.	8	17.8			<u>~</u>
Log		N	IDWEST		228	26.3	26.	3	44.1			
		S	OUTH		286	33.0	33.	0	77.1			
E Title		v	VEST		198	22.9	22.	9	100.0			
- R Notes		Т	otal		866	100.0	100.	0				
Construction C												
						Des	criptive Stat	listics				
					Ν	Range	Minimum	Maximum	n Mean	Std. Deviation	n Variance	
		S2 Q38A F VERBAL S	READING OF SKILLS %	2	560	100	0	100	64.01	23.47	5 551.111]
Valid N (listwise)				560							J	
1 P												
	IBM SPSS Statistics Processor is ready Unicode:ON											

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"

Frequencies: Statistics		Frequencies
Percentile Values Quartiles Cut points for: 10 equal groups Percentile(s): Add Change Remove Bergenetile(s): Dispersion Std. deviation Minimum Variance Magimum Range SE_mean Continue Cancel	Central Tendency Median Median Sum Values are group midpoints Distribution Skewness Kurtosis Help	Variable(s): S2TEST6 S2TEST7 S2TEST7 S2TEST8 S2TEST9 S2TEST10 S2TEST11 S2TEST12 ✓ Display frequency tables OK Paste Reset Cancel Help

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...."

SPS	S Statistics [Data Editor						
m	<u>A</u> nalyze	Direct <u>M</u> arketing	<u>G</u> raphs	<u>U</u> tilities	Add- <u>o</u> ns	W		
-	Repo	rts	•					
	D <u>e</u> sci	riptive Statistics	- F	123 <u>F</u> requ	encies	I		
	Ta <u>b</u> le	s			intivoc			
	Co <u>m</u> p	oare Means		A Explo	re			
	Gene	ral Linear Model		Crosstabs				
	Gene	rali <u>z</u> ed Linear Model	s 🕨		Analyeie	Ē		
	Mixed	Models	•		Analysis	E		
	<u>C</u> orre	late	•	Ratio.	-			
	<u>R</u> egre	ession	•	<u>P-P P</u>	lots			
(—	L <u>o</u> glir	near	۰.	🛃 <u>Q</u> -Q P	lots			
-	Moure	Mahuarka	h.					

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.

S2 Q69A PRINCIPL EVAL	Mean		2.02	.025	
BY TEST SCORES	95% Confidence Interval	Lower Bound	1.97		
	for Mean	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

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...."

						(_				
*28023-0002-Data.sav [DataSet1] - IBM SPSS Statistics Data Editor												
	<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	ng	<u>G</u> raphs	<u>I</u> tilities	Add- <u>o</u> ns	s <u>W</u> indow	<u>H</u> elp	
	🔁 🗄			¥ 🎬		Chart B	uilder oard Tem	plate Cho	oser			
l		Name Type Width Decimals					Compa	ro Subaro				Val
	381	S267A1B2	Numeric	2	0	S2 C	Compare Subgroups				{-9, NOT A	SCERTAINED}
	382	S267A1B3	Numeric	2	0	S2 C	Regres	sion Varia	ible Plots		1-1-3. NOT A	SCERTAINED}
	383	S267A1B4	Numeric	2	0	S2 C	<u>L</u> egacy	Dialogs			<u> </u> <u>B</u> ar	
	384	S267A1B5	Numeric	2	0	S2 C	067 DISTRIC		HIRE/FIF	RE CRITERIA	11 <u>3</u> -D Bar	
	385	S267A1B6	Numeric	2	0	S2 C	067 COMMI	TTEE INP	T HIRE/F	FIRE CRITER	1/ 🔜 Line	
l	386	S267A2B1	Numeric	2	0	S2 C	067 PRINCI	PAL INPU	T FOR T	EXTBOOKS		
	387	S267A2B2	Numeric	2	0	S2 C	Q67 TEACH	ER INPUT	FOR TE	XTBOOKS		
	388	S267A2B3	Numeric	2	0	S2 C	067 PAREN		FOR TEX	TBOOKS	<u>е</u> Рі <u>е</u>	
	389	S267A2B4	Numeric	2	0	S2 0	067 SCHOO				High-Low.	

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."

🛃 Bar Charts
Simple
Clustered
Stacked
⊤Data in Chart Are
Summaries for groups of cases
 Summanes of separate variables Values of individual cases
Define Cancel Help

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 Ban Summaries for Groups of Cases Define Simple Ban Summaries Define Simple Ban Summaries Define Simple Ban Summaries Define Ban Summaries De	BP65 (Options) No a) a)
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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.

Sub Represent Totals Sub Represent Totals Sub Represent No drass O drass O drass O drass Sub Represent O drass O drass O drass O drass Sub Represent O drass O drass O drass O drass O drass Sub Represent O drass O drass O drass O drass O drass O drass Sub Represent O drass S Solution	😭 Define Simple Bar: Summaries for Groups of Cases	Midth Desimele II Desimele II Desimele II Desimele III De	🙀 Define Simple Bar: Summaries for Groups of Cases
	S.D. M of cases % of cases KUREANUR Other glatistic (e.g., mean) Other glatistic (e.g., mean) SZNAWO Other glatistic (e.g., mean) Other glatistic (e.g., mean) SZNAWO SZNAWO Variable: SZNAWO Variable: Variable: SZNAWO Category Agis: Variable: SZNAWO Category Agis: Variable: SZNAWO Category Agis: Variable: SZNAWO Category Agis: Variable: SZNAWO Variable: Variable: SZNAWO <td>Cercion Subtle: Continue Cancel Heip Content specifications from: Second Reset Cancel Heip</td> <td>SUPPE2 SUPPE2 SUPPE2</td>	Cercion Subtle: Continue Cancel Heip Content specifications from: Second Reset Cancel Heip	SUPPE2 SUPPE2

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."

*28	023-0002-	Data.sav (Data	aSet1] - IBM SPS	S Statistics	Data Editor							
<u>F</u> ile	<u>E</u> dit <u>V</u>	<u>/</u> iew <u>D</u> ata	Transform	Analyze	Direct <u>M</u> arketi	ng <u>G</u> raphs	<u>U</u> tilities	Add- <u>o</u> ns	<u>W</u> indow	<u>H</u> elp		
				1		<u>C</u> hart	Builder Iboard Ten	iplate Choo	ser			
		Name	Туре	Width	Decimals	Comr	are Subor	nins			Valu	
38	11 S	267A1B2	Numeric	2	0	S2 C	are oubgit			{-9, NOT ASCERT	RTAINED}.	
38	2 S	267A1B3	Numeric	2	0	S2 G	ession vari	able Plots		{-9. NOT ASCERT	TAINED}	
38	13 S.	267A1B4	Numeric	2	0	S2 C Lega	cy Dialogs			🚹 Bar		
38	14 S	267A1B5	Numeric	2	0	S2 Q67 DISTR	ICT INPUT	HIRE/FIRE	CRITERIA	11 3-D Bar		
38	15 S.	267A1B6	Numeric	2	0	S2 Q67 COM	AITTEE INF	T HIRE/FI	RE CRITERI	Line	7	
38	16 S	267A2B1	Numeric	2	0	S2 Q67 PRINC	IPAL INPU	JT FOR TE	XTBOOKS	Area		Pie Charts
38	17 S.	267A2B2	Numeric	2	0	S2 Q67 TEAC	HER INPU	T FOR TEX	TBOOKS	nie nie		
38	18 S	267A2B3	Numeric	2	0	S2 Q67 PARE	NT INPUT	FOR TEXT	BOOKS			Data in Chart Are
38	19 S	267A2B4	Numeric	2	0	S2 Q67 SCHO	OL BOAR	D INPUT FO	OR TEXTBO	High-Low		Summaries for groups of cases
39	10 S	267A2B5	Numeric	2	0	S2 Q67 DISTR	ICT INPUT	FOR TEXT	BOOKS	📕 Boxplot		O Summaries of senarate variables
39	1 S	267A2B6	Numeric	2	0	S2 Q67 COM	NITTEE INF	PUT FOR T	EXTBOOKS	🔢 Error Bar		Values of individual cases
39	2 S	267A3B1	Numeric	2	0	S2 Q67 PRINC	IPAL INPU	JT ON STA	NDARDS	Population Pyram	nid	values of individual cases
39	13 S.	267A3B2	Numeric	2	0	S2 Q67 TEAC	HER INPU	T ON STAN	IDARDS	Scatter/Dot		
39	14 S	267A3B3	Numeric	2	0	S2 Q67 PARE	NT INPUT	ON STANE	ARDS	Histogram		Cancel Help
30	16 S	267A3R4	Numeric	2	٥	S2 067 SCH0	OI ROAR	n inplit n	N STANDAR			

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...." 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.

											¢	🔒 Line C	harts 🛛
												\sim	Simple
*28023-000)2-Data.sav (Dat	aSet1] - IBM SPS	S Statistics D	ata Editor									
<u>F</u> ile <u>E</u> dit	<u>V</u> iew <u>D</u> ata	<u>T</u> ransform	<u>A</u> nalyze	Direct <u>M</u> arketi	ng	<u>G</u> raphs	<u>U</u> tilities	Add- <u>o</u> ns	<u>W</u> indow	<u>H</u> elp		\sim	Multiple
				*		💼 <u>C</u> hart 🛄 Graph	Builder board Ten	nplate Cho	oser		6	ĮĮĮ	Drop-line
	Name	Туре	Width	Decimals		Comp	ora Quhar	oune			Valu		
381	S267A1B2	Numeric	2	0	S2 C	Comp	are oubyr	oups		{-9, NOT ASCERTAIN	ED}.	_Data ir	n Chart Are
382	S267A1B3	Numeric	2	0	S2 C	Regre	ssion Vari	able Plots		-9. NOT ASCERTAIN	ED}	Sun	mmaries for <u>g</u> roups of cases
383	S267A1B4	Numeric	2	0	S2 (<u>L</u> egad	y Dialogs		- F	1 Bar		O Sun	mmaries of separate <u>v</u> ariables
384	S267A1B5	Numeric	2	0	S2 Q	67 DISTR	CT INPUT	THIRE/FIR	E CRITERIA	1 3-D Bar		O vai	ues of individual cases
385	S267A1B6	Numeric	2	0	S2 Q(67 COMN	ITTEE IN	PT HIRE/F	IRE CRITER	Line.		D	efine Cancel Help
386	S267A2B1	Numeric	2	0	S2 Q	67 PRINC	IPAL INPI	UT FOR TE	EXTBOOKS	Aron	Ļ		

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.



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.

*28023-00	102-Data.sav [Data	aSet1] - IBM SPS	S Statistics D	Data Editor						ſ	t a	Histogram	<u></u>	TOT	DIOTIN	
<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	ng <u>G</u> raphs	<u>U</u> tilities	Add- <u>o</u> ns	<u>W</u> indow	<u>H</u> elp					Г		Variable:
					ha La Cha	t Builder hboard Te	mplate Cho	ioser				S2TESTK	*		Displ	S2PCTRD
	Name	Туре	Width	Decimals	Con	inare Subo	rouns		Val		•	S2TEST1		E.	Panel b	V.
381	S267A1B2	Numeric	2	0	S2 C		richie Diete		{-9, NOT ASCERTAINED]	}		S2TEST2				Rows:
382	S267A1B3	Numeric	2	0	S2 G	ression val	nable Plots		{-9. NOT ASCERTAINED]	8		S2TEST4		1		
383	S267A1B4	Numeric	2	0	S2 C Leg	acy Dialogs	3	•	🚹 <u>B</u> ar			S2TEST5			¥	
384	S267A1B5	Numeric	2	0	S2 Q67 DIST	RICT INPU	T HIRE/FIF	RE CRITERIA	1 3-D Bar		•	S2TEST6				
385	S267A1B6	Numeric	2	0	S2 Q67 CON	MITTEE IN	IPT HIRE/F	FIRE CRITER	A 🛃 Line			S2TEST8				Nest variables (no empty rows)
386	S267A2B1	Numeric	2	0	S2 Q67 PRIN	CIPAL INF	PUT FOR T	EXTBOOKS	Area			S2TEST9				Cojumns:
387	S267A2B2	Numeric	2	0	S2 Q67 TEA	HER INPU	UT FOR TE	XTBOOKS				S2TEST10			-	
388	S267A2B3	Numeric	2	0	S2 Q67 PAR		FOR TEX	TBOOKS	Pi <u>e</u>			S2TEST11				
389	S267A2B4	Numeric	2	0	S2 Q67 SCH		RD INPUT I	FOR TEXTBO	High-Low			S2PCTMTH	*			Nest variables (no empty columns)
390	S267A2B5	Numeric	2	0	S2 Q67 DIST	RICT INPU	T FOR TE	KTBOOKS	🗰 Boxplot			Template				
391	S267A2B6	Numeric	2	0	S2 Q67 CON	MITTEE IN	PUT FOR	TEXTBOOKS	Error Bar			Use chart sp	ecificatio	onst	from:	
392	S267A3B1	Numeric	2	0	S2 Q67 PRIN	CIPAL INF	UT ON ST.	ANDARDS	Population Pyramid			File				
393	S267A3B2	Numeric	2	0	S2 Q67 TEA	HER INPU	UT ON STA	NDARDS	Scatter/Dot				_	_	1	
394	S267A3B3	Numeric	2	0	S2 Q67 PAR	ENT INPUT	T ON STAN	IDARDS	Histogram				ОК		<u>P</u> aste	Reset Cancel Help
395	S267A3B4	Numeric	2	0	S2 067 SCH	DOI BOAR	RD INPUT (ON STANDA		U				_		

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	5	2.5	0	
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.				
Graph. FULL CREDIT: The selected graph is the MOST appropriate for the variable's level of	5	2.5	0	
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.				
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	5	2.5	0	
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				
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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	
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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	10	7.5	5	0
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.				
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		
		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		
	Valid	11	101	5.1	5.1	16.1		
		12	540	27.4	27.4	43.5		
XV		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			
		DK	1	.1				
	Missing	NA	1	.1				
		Total	2	.1				
	rotal		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 **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 ______.
- 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 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.

al pop se countries.