

Descriptive Statistics

- Descriptive statistics describe the status of variables. How you describe the status of variables depends on the level of measurement of the variable. Recall that SPSS uses Nominal, Ordinal, and Scale (Interval or Ratio).
 - Nominal and Ordinal variables, such as Gender, could be reported as Frequency (% or number of Males and Females).
 - Scale variables, such as Age, could be reported by stating the Minimum, Maximum, Mean, and Standard Deviation (Ages ranged from 18 to 64 years old with an average age of 27 (SD=9.81)).

Calculate Frequency

- Select: **Analyze > Descriptive Statistics > Frequencies**
- Highlight *Gender* on the list and click on the arrow to move *Gender* to the Variable(s) box.
- Highlight *ConfLoHi* on the list and click on the arrow to move *ConfLoHi* to the Variable(s) box
- Be sure that *Display Frequency Tables* is checked
- Select **Charts**
- On the *Frequencies: Charts* box, select: **Bar charts** and **Percentages > Continue > OK.**



- output
- └─ Frequencies
 - └─ Title
 - └─ Notes
 - └─ Active Dataset
 - └─ Statistics
 - └─ Frequency Ta
 - └─ Title
 - └─ Gender
 - └─ ConfLoHi
- └─ Bar Chart
 - └─ Title
 - └─ Gender
 - └─ ConfLoHi

Frequencies

→ [DataSet0]

Statistics

		Gender	ConfLoHi
N	Valid	10	10
	Missing	0	0

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	7	70.0	70.0	70.0
	Female	3	30.0	30.0	100.0
Total		10	100.0	100.0	

ConfLoHi

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	2	20.0	20.0	20.0
	Medium	2	20.0	20.0	40.0
	High	6	60.0	60.0	100.0
Total		10	100.0	100.0	

SPSS Processor is ready

- Notice that a 2nd file is now open.
- Each time you perform an analysis, the output will be added to the output file.
- When you save, you will need to save both your data file (.sav) and your output file (.spo).
- Go to **File > Save As >** (choose a location)
- Type your last name in the *File Name* box.
- Select: **Save**

Review the Output

- Frequencies: the number of valid and missing data entries for *Gender* and *ConfLoHi*
- Frequency Table: the number of data entries for each level of Gender (how many Males and Females) and ConfLoHi (how many Low, Medium, and High) followed by Bar Charts

Calculate Minimum, Maximum, Mean, & Standard Deviation

- Select: **Analyze > Descriptive Statistics > Frequencies** to open *Frequencies*.
- Select: **Reset**
- Highlight *Age*, *GPA*, *HPGPA*, and the 2 questions (*Confidence* and *CompExp*) on the list and click on the arrow to move them to the Variable(s) box.
- Be sure that *Display Frequency Tables* is checked
- Select: **Statistics**. Check **Mean**, **Standard Deviation**, **Minimum** and **Maximum**
- Select: **Continue > OK**



- Output
- Frequencies
 - Title
 - Notes
 - Active Database
 - Statistics
 - Frequency Table
 - Title
 - Gender
 - ConfLoHi
- Bar Chart
 - Title
 - Gender
 - ConfLoHi
- Frequencies
 - Title
 - Notes
 - Active Database
 - Statistics
 - Frequency Table
 - Title
 - Age
 - GPA
 - HSGPA
 - On a scale of 1 to 10 with 10 being the most, how confident are you that you will learn statistics?
 - How many years of computer experience have you had?

→ Frequencies

[DataSet0]

Statistics

		Age	GPA	HSGPA	On a scale of 1 to 10 with 10 being the most, how confident are you that you will learn statistics?	How many years of computer experience have you had?
N	Valid	10	10	10	10	10
	Missing	0	0	0	0	0
Mean		25.2000	3.0830	3.1410	6.8000	5.8000
Std. Deviation		3.35989	.45235	.39204	2.52982	4.18463
Minimum		21.00	2.22	2.50	3.00	1.00
Maximum		31.00	3.90	3.80	10.00	15.00

Frequency Table

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 21.00	2	20.0	20.0	20.0
22.00	1	10.0	10.0	30.0
23.00	1	10.0	10.0	40.0

SPSS Processor is ready

Review the Output

- Frequencies: the number of valid and missing data entries for these variables now includes Mean, Standard Deviation, Minimum, Maximum.
- Frequency Tables: the number of data entries for each level of these variables (one table for each variable). If there are many levels of a variable, the Frequency Table provides information that is very detailed. Instead, the variable's Mean, Standard Deviation, Minimum, and Maximum are typically reported.

Calculate for Multiple Variables

- Determine the frequency of a combination of variables, such as how many of each *Gender* are at each level of *ConfLoHi*:
- Select: **Analyze > Descriptive Statistics > Crosstabs**
- Highlight *Gender* and click on the upper arrow to move *Gender* to the Row(s) box.
- Highlight *ConfLoHi* and click on the lower arrow to move *ConfLoHi* to the Column(s) box.
- Check *Display clustered bar charts*
- Select: **Cells**. Check *Percentages* for **Row, Column,** and **Total**
- Select: **Continue > OK.**



- output
- └─ Frequencies
 - Title
 - Notes
 - Active Database
 - Statistics
 - Frequency Table
 - Title
 - Gender
 - ConfLoHi
- └─ Bar Chart
 - Title
 - Gender
 - ConfLoHi
- └─ Frequencies
 - Title
 - Notes
 - Active Database
 - Statistics
 - Frequency Table
 - Title
 - Age
 - GPA
 - HSGPA
 - On a scale
 - How many
- └─ Crosstabs
 - Title
 - Notes
 - Active Database
 - Case Process
 - Gender * ConfLoHi
 - Bar Chart

➔ **Crosstabs**

[DataSet0]

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * ConfLoHi	10	100.0%	0	.0%	10	100.0%

Gender * ConfLoHi Crosstabulation

			ConfLoHi			Total
			Low	Medium	High	
Gender	Male	Count	0	2	5	7
		% within Gender	.0%	28.6%	71.4%	100.0%
	% within ConfLoHi	.0%	100.0%	83.3%	70.0%	
	% of Total	.0%	20.0%	50.0%	70.0%	
Female	Count	Count	2	0	1	3
		% within Gender	66.7%	.0%	33.3%	100.0%
	% within ConfLoHi	100.0%	.0%	16.7%	30.0%	
	% of Total	20.0%	.0%	10.0%	30.0%	
Total	Count	Count	2	2	6	10
		% within Gender	20.0%	20.0%	60.0%	100.0%
	% within ConfLoHi	100.0%	100.0%	100.0%	100.0%	
	% of Total	20.0%	20.0%	60.0%	100.0%	

SPSS Processor is ready

Review the Output

- Case Processing Summary: the number of valid, missing, and total data entries for *Gender* and *ConfLoHi* (participants that answered both questions)
- Crosstabulation: the number (and percentages) of data entries for each level of both variables (rows are levels of one variable and intersect with columns which are levels of the other variable).
- Works best with nominal or ordinal variables