

# Data Analysis

- A cross-tabulation allows the researcher to see the relationships between the values of two different variables
- One variable is typically the dependent variable (such as **attitude toward the death penalty**) and the other an independent variable (such as **gender**)
- The crosstabs function will provide the number of units (usually people) in each cell as well as row and column percentages

# Data Analysis

- To obtain a crosstab between attitudes toward the death penalty (**DP**) and **gender** click the following:

Analyze

Descriptive Statistics

Crosstabs

--select V6 (DP) on the left side and put it in the **column** box on the right side by first highlighting V6 and then clicking the arrow pointing to the column box

--select V13 (sex) in the same way and put it in the **row** box

--click "Okay"

# SPSS Output Looks Something Like This:

## V13 \* V6 Crosstabulation

Count

		V6		
		Yes	No	Total
V13	Male	36	19	55
	Female	33	18	51
Total		69	37	106

The numbers in the table are the actual number of respondents who answered yes or no—a total of 106.

# Creating a Table for a Research Paper From the SPSS Output

- Always give the table a **table number** and a title
- The table should be **on a page by itself**  
It should immediately follow that page where the data is first referred to in the paper.
- The dependent and independent variables should be **clearly labeled** as well as the values of each variable.

# Example of Table Format for Research Paper

Table 1: The Effect of Sex on Attitudes Toward the Death Penalty

		In Favor of the Death Penalty (actual number of respondents reported)		
		Yes	No	Total
Gender	Male	36	19	55
	Female	33	18	51
Total		69	37	106

# Data Analysis

- While the actual numbers are informative to see, it is typically more valuable to know the **percentages of the values** being examined--those that go down the column particularly (the dependent variable).
- **Example for Column Percentages:**  
What percentage of those who were in favor of the DP were male and what % were female? Was a higher % of males in favor than females?

# Data Analysis

- **Example for Row Percentages:** By looking at row percentages we can report the percentage of males that were in favor of the DP verses the % of males who were against it.
- **If you were using our example as part of your research paper, your research paper should discuss** whether those in favor of the DP were more likely to be male or female and likewise whether those against the DP were more likely to be male or female. You could also report whether more men were in favor of the DP or against it (likewise for women).

# Data Analysis

To obtain percentages in the SPSS output:

1. Get into the crosstabs box where you selected the variables, as shown earlier
2. Click on the “cells” box
3. Under “percentages” on the left side click in the column and row boxes
4. Click “continue”
5. Click “Okay”

# SPSS Output Looks Something Like This:

## V13 \* V6 Crosstabulation

			V6		Total
			Yes	No	
V13	Male	Count	36	19	55
		% within V6	52.2%	51.4%	51.9%
		% within V13	65.5%	34.5%	100.0%
	Female	Count	33	18	51
		% within V6	47.8%	48.6%	48.1%
		% within V13	64.7%	35.3%	100.0%
Total		Count	69	37	106
		% within V6	100.0%	100.0%	100.0%
		% within V13	65.1%	34.9%	100.0%

# Example of Table Format for Research Paper

Table 1: The Effect of Sex on Attitudes Toward the Death Penalty

Column % Row%	Percent In Favor of the Death Penalty*			
	Yes	No	Total	
Gender	Male	52 65 (36)	51 35 (19)	100 (55)
	Female	48 65 (33)	49 35 (18)	100 (51)
	Total	100 (69)	100 (37)	100 (106)

\*Numbers in parentheses are actual numbers of respondents

# Data Analysis

- While you can certainly report and discuss the percentages, you should definitely report whether the difference found appears to be **a real difference or a difference due to sampling error.**
- For example, in our table 52% of males are in favor of the DP while 51% of females are in favor. Are females really less likely to be in favor of DP (by 1%) or is this difference likely to be due to sampling error?
- The **Chi Square statistic** provides an indication of whether the statistics in the table are real differences or due to sampling.

# Data Analysis

To obtain the Chi Square statistic in the SPSS output:

1. Get into the crosstabs box where you selected the variables and the percentages as shown earlier
2. Click on the “statistics” box
3. On the top, left, click the box next to “Chi Square”
4. Click “continue”
5. Click “Okay”

# Data Analysis

6. In the output file that is provided (after clicking “Okay”) look for a box that is titled “**Chi-Square Tests**”
7. Within this box look down the first column for “**Pearson Chi-Square**”
8. On the Pearson Chi-Square row look for the number reported under “**Asymp Sig. (2-sided)**”
9. **Divide the number in half**

# Data Analysis

10. If the resulting number is **less than .05** then you can report that “the differences found in the table are significant differences at the .05 level.” Or, you could say “there is **95% confidence that the differences are real** and not due to sampling error.”
11. If the number is **less than .01** then, similarly, you can report that there is **99% confidence that the differences are real differences** and not due to sampling error.
12. The Chi Square statistic should be reported at the **bottom of the table and in parentheses put (one-sided) to clarify you divided by 2.**

# Example of how to report Chi Square in table for Research Paper

Table 1: The Effect of Sex on Attitudes Toward the Death Penalty

		Percent In Favor of the Death Penalty*	
		Yes	No
Gender	Male	52 (36)	51 (19)
	Female	48 (33)	49 (18)
	Total	100 (69)	100 (37)

\*Numbers in parentheses are actual numbers of respondents  
Pearson Chi-Square = .468 (1-sided)

# Data Analysis

13. In our example, the statistics in the table are not significant. This suggests that the small difference that we find is probably not a real difference **when we generalize our findings to the larger population of males and females.**
  
14. However, you might choose to also perform **a crosstab between sex and V22 (DP for juveniles) and between sex and V21 (DP for adults).** You might find that while sex shows no difference in general (V6) there is a difference between the sexes when considering who is put to death.

# Reporting Data Findings in a Research Paper

- In your research paper you should **compare these findings to similar research** done by researchers in the past—that is past research that you should have already reviewed in your literature review.
- Often times, past research that has found similar results **provides a variety of explanations** for the findings which you can then use as explanations for the current findings.
- If the results are different than those of the past, you will need to **discuss possible reasons** why the findings are different.

# Reporting Data Findings in a Research Paper

- For example—we have not found a significant difference between males and females regarding attitudes toward the DP. Discuss whether this supports previous research or refutes it.
- You should also **provide an explanation** or possible reason(s) for why the findings are similar or not similar to past research.
- In our example, our findings don't support previous research perhaps because those in our sample have more education than those in other studies and more education may be associated with being in favor of the DP.

# Reporting Data Findings in a Research Paper

- Further, you could say that a **second** possible reason why the findings are different from past findings are because the current study did not use a random sample but instead used a “convenience” sample. Consequently, the findings may not support previous research due to a **fairly weak research design**.

# Reporting Data Findings in a Research Paper

- A **third** possible reason for the difference between the current findings and past research is that the **attitudes of males and females towards the DP may be changing over time** so that there now is no longer a difference in attitudes between the sexes.
- **You would explain** that a difference may have existed in earlier studies but now such a difference between the sexes has disappeared. Of course, you'd then want to speculate on why this might be (but be rational not emotional in such an explanation).

# Reporting Data Findings in a Research Paper

- Generally, when reporting the findings you will present multiple possible reasons for the results you have found.
- When you report the findings in your research paper, the **findings section** of your paper should have **sub-headings** just like the literature review with each sub-heading being a different independent variable.

# Reporting Data Findings in a Research Paper

In sum, within the sub-heading section, you should:

1. Briefly **review what past research has found** with regard to the relationship between the independent variable and the dependent variable (that is, a brief summary of the subsection in the literature review to **remind the reader** of what has been found in past).

# Reporting Data Findings in a Research Paper

2. Review what the current data shows and, more specifically, **refer to the table** and the percentages and Chi-Square in the table and discuss what is there.
3. Provide multiple possible explanations for the findings in the table.

# Data Analysis: Recoding Data

Given the size of our sample, **no table should have more than roughly 15 cells** (for statistical reasons that you will learn about next semester).

However, some of the variables have many values. The use of the variable in a crosstabulation would result in the cross tab being more than 15 cells (for example: age).

For these variables, **in order to use crosstabs, you will need to combine values so that you have a manageable number of values.** I have already recoded most if not all of the problem variables.

# Data Analysis: Recoding Data

This was accomplished by **first performing a frequencies on the variable to determine how many respondents answered each value.** The values were then combined so that each of the resulting values had relatively large numbers of cases.

**For example:** In the case of education, there were only a few respondents who reported (1) less than sixth grade or (2) less than high school. Therefore, a new “value” was created which is “High School or less”.

**While we might want to compare those with a HS degree to those with less than a HS degree it is not possible because we don't have enough such people in our sample.** Consequently, the combination.