

## Creating and Interpreting Contingency Tables

### Learning Goals

#### Skills

- You will use basic analysis software (WebCHIP) to access and analyze data.
- You will generate relative frequency distributions in WebCHIP.
- You will generate contingency tables in WebCHIP.
- You will interpret frequencies, row percentages, and column percentages.
- You will describe the results of analyses.

#### Substance

- You will apply course concepts to understand whether and how child poverty varies by family type and one other variable.

### Background

As we have seen in class, contingency tables (also called cross tabs, two-way, or bivariate tables) allow us to summarize and analyze relationships between two qualitative variables. In this exercise, we will use a customized data set made from the 2000 U.S. Census. We will access and analyze data using WebCHIP software found at DataCounts!.

These are the variables we will be using:

Variable name	Description
<b>Imm</b>	<b>Native-born</b> <b>Foreign-born</b>
<b>Pov</b>	<b>Poverty</b> (In poverty: total income of the householder's family is below the poverty threshold at the time of the survey.)  <b>NearPoor</b> (Household income is between 100 and 199% the poverty threshold.)  <b>Middle</b> (Household income is between 200 and 399% the poverty threshold.)  <b>Comf</b> (Household income is at least 400% the poverty threshold)
<b>FamType</b>	<b>MrrdCpl</b> (Married-couple family which includes householder and his or her spouse, as well as any children related to the householder by birth, marriage, or adoption. Such households may also include other relatives or non-relatives.)

	<p><b>MaleFam</b> (Male-headed family, headed by an unmarried male and including one or more children related to the householder by birth, marriage, or adoption. Such households may also include relatives or non-relatives.)</p> <p><b>FemlFam</b> (Female-headed family, headed by an unmarried male and including one or more children related to the householder by birth, marriage, or adoption. Such households may also include relatives or non-relatives.)</p>
<b>Famsize</b>	<p>2 people</p> <p>3 people</p> <p>4 people</p> <p>5 people</p> <p>6+ people</p>

**Part 1: What Do You Think?**

Without conducting any analyses, give your best estimates for each of the following questions.

- What percentage of U.S. children were foreign-born in 2000?

- What percentage of U.S. children lived in or near poverty in 2000?

- Think of your family size growing up. a) How many family members lived in your household with you? (If this number varied over time, you can choose one family size to respond with.) b) What percentage of U.S. children had the same family size as you in 2000?

a)

b)

- Did a higher percentage of U.S. children live in male-headed families or female-headed families in 2000 (see definitions above)?

- If we look at the percentage of children living in poverty for each family type, which family type had the highest percentage of children living in poverty?

**Part 2: Create and Interpret a Relative Frequency Distribution**

- Access WebCHIP 4.0 by going to <https://ssdan.net/datacounts/webchip>.
  - Along the left side are drop-down menus and buttons that we will use to access data and create tables.
  - To the right of the menus and buttons, there is a display area called **Workbook**. This is where the results of your analyses will be displayed.
- Under **Collection**, select **census2000**.
- Under **Dataset**, select **chldpov2k**.
  - Note that a brief description of the data set is generated after you select it.
- Beneath **Variables**: is a list of the variables contained in this data set.
- Click the button **Compute Marginals**, and fill in the table below.

Table 1. Relative Frequency Distribution for U.S. Children, 2000

Variable	Percentage
<b>Nativity</b> Native-born Foreign-born	
<b>Poverty Status</b> In Poverty Near Poverty Middle Income Comfortable Income	
<b>Family Type</b> Married-Couple Male-Headed Female-Headed	
<b>Family Size</b> 2 3 4 5 6+	

Source: wgtd 1% PUMS, Frey/U-Mich for SSDAN

Which of the questions from **Part 1** can we answer with this table? Give the questions and the answers below.

**Part 3: Create and Interpret Contingency Table**

- Using the same collection and dataset as above, scroll down to **Choose Variables**.
- Under **Row**: choose **FamType**.
- Under **Column**: choose **Pov**.
- Under **Generate Table**, click **Frequency**.

If you wanted to calculate the percent of U.S. children living in poverty and part of married-couple families in 2000, what two numbers from the table would you need?

What percent of U.S. children were living in poverty and part of married-couple families in 2000?

- Under **Generate Table**, click **Percent Across**.

Among children living in married-couple families, what percent were living in poverty or near poverty in 2000?

If we look at the percentage of children living in poverty for each family type, which family type had the highest percentage of children living in poverty in 2000?

- Under **Generate Table**, click **Percent Down**.  
You may need to scroll up to find the **Workbook** area.

Among children who were near poor, what percent lived in a married-couple family in 2000?

**Part 4: Choose a Different Row Variable**

- Using the same collection and dataset as above, scroll down to **Choose Variables**.
- Under **Row**: choose **Imm** or **Famsize**.
- Under **Column**: choose **Pov**.
- Under **Generate Table**, click **Percent Across**.

How does the percentage of children in poverty in 2000 vary by native-born/foreign-born or family size?

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