

.....Using StudentChip to Create Tables

INTRODUCTION

This tutorial illustrates how to use the StudentChip program to analyze our SSDAN census datasets with table analysis (crosstabs) and a few other features. It is not meant to be an exhaustive explanation of StudentChip, but will walk you through the steps required to answer basic questions using the program. This tutorial is broken into the following sections: Accessing StudentChip and Finding a Dataset, Saving Your Output, Cross Tabs, Modifying a Variable, and Exiting the Program.

The example we will use here focuses on the following questions: Are there differences in the earnings of women and men, ages 35-44, in 1990? Do these differences decrease when we look at specific occupations? To investigate these questions we will use the dataset **WORK9-35.DAT**, taken from the 1990 U.S. Census, containing information on women and men ages 35-44 who work full time, year round.

ACCESSING STUDENTCHIP AND FINDING A DATASET

To investigate the above question, we need to, first, access StudentChip, and second, locate the dataset **WORK9-35.DAT**.

To access StudentChip: (1) Put the disk in the drive (2) At the DOS prompt, type a: and press enter on the keyboard, and (3) type chip after the a:\> prompt. (If you experience difficulties, see the Troubleshooting section at the end of this tutorial.) The screen will begin to blink as the program is opening.

Now locating dataset **WORK9-35.DAT** requires knowing how datasets are organized. The datasets on your disk are all contained in the directory **FREYCEN(DIR)** which is subdivided into two subdirectories. The first is titled **CEN5080**, and it contains trend datasets usually spanning the years 1950 to 1980. The second, titled **CEN90**, contains datasets using 1990 census data. A complete list of all datasets in both subdirectories can be found in the *Guide to Datasets* at the end of this book. However, you can always tell a dataset in the **CEN90** subdirectory because it has a single "9" in the name. Therefore, **WORK9-35.DAT** is in the **CEN90** subdirectory, so we will proceed to locate it there.

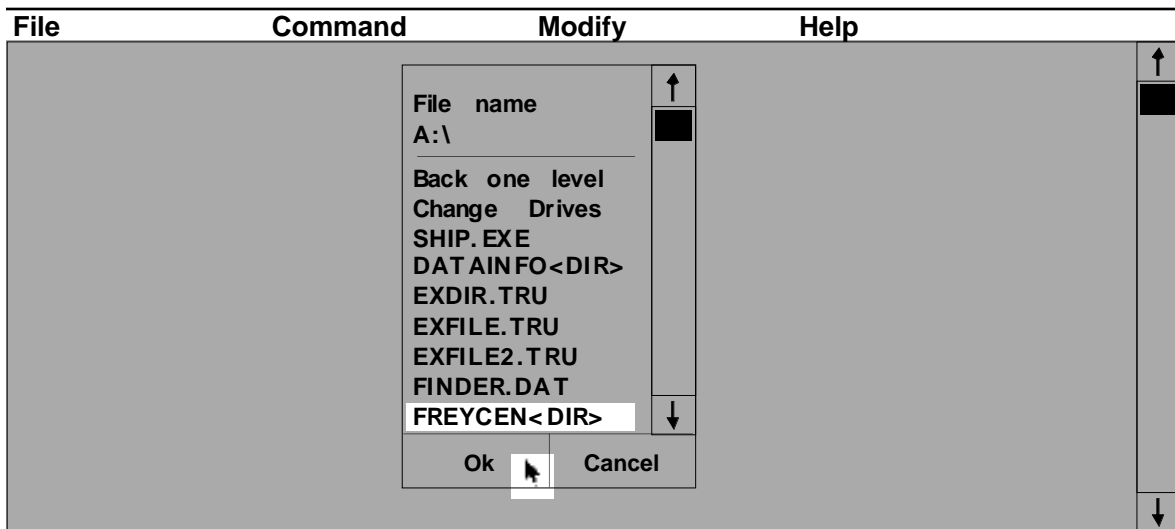
Once you are in the StudentChip program, you will see a screen like this:



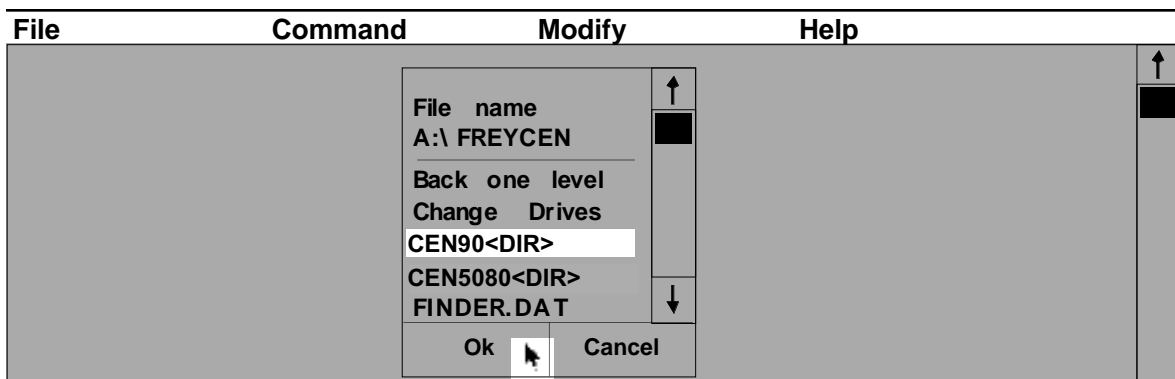
To find a dataset, click on the FILE menu, and select the OPEN command. Your screen will now look like this:



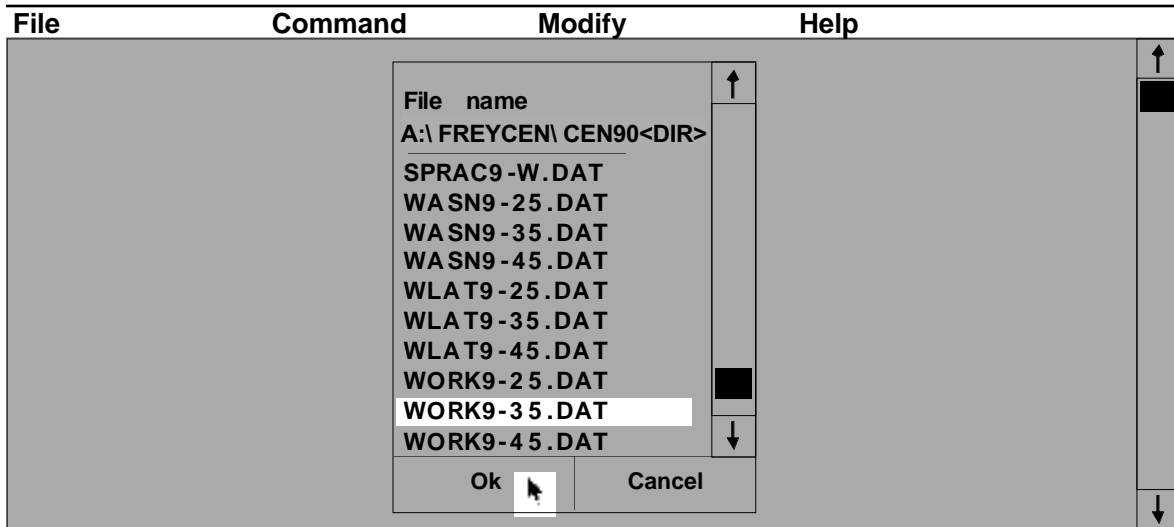
Use your mouse to highlight FREYCEN (DIR) and then select the "OK" button . Your screen will then look like this:



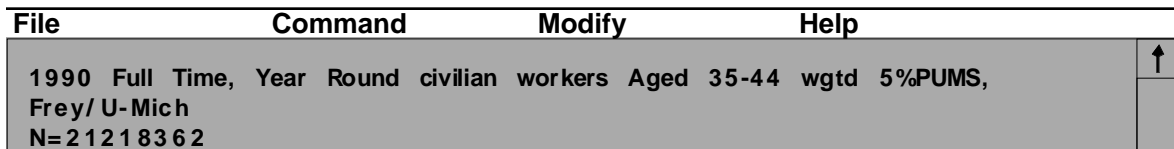
Use your mouse to first highlight CEN90 (DIR) and then to select the "OK" button. Your screen will then look like this:



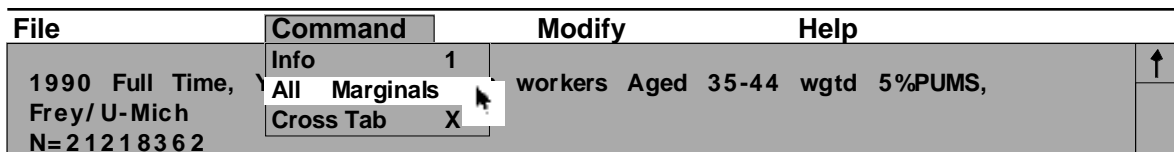
Next, point your mouse to the down arrow key, on the lower right side of the file name screen, and press it until you have scrolled down far enough where **WORK9-35.DAT** is visible. Then highlight this file and select "OK" with your mouse. Your screen will now look like this:



StudentChip will display basic information about the dataset **WORK9-35.DAT**, including its selected population: 1990 Full-time, Year Round civilian workers, and the size of the population. Your screen will now look like this:



You can find out about the variables in the dataset **WORK9-35.DAT** by clicking your mouse on the command menu and selecting ALL MARGINALS under the COMMAND menu (shown below).



The ALL MARGINALS option displays all of the variables and categories included in the dataset. After you have selected the ALL MARGINALS option, here is what the output should look like for the dataset **WORK9-35.DAT** (as shown on next page).

File	Command	Modify	Help
1990 Full Time, Year Round civilian workers Aged 35-44 wgted 5%PUMS, Frey/ U-Mich N= 2 1 2 1 8 3 6 2 All Marginals			
RaceLat			
NLWhite	Black	AllOther	Total
80.3	9.9	9.8	= 100.0 %
Gender			
Male	Female	T o t a l	
61.8	38.2	= 100.0 %	
Educ			
LTHS	HSGrad	SomeColl	CollGrad
			Total

The marginals show that dataset **WORK9-35.DAT** contains five variables: RaceLat (race Latino status), Gender, Educ (education), Occup (occupation) and Earnings. In order to see Occup and Earning, use your mouse to click on the down arrow key (as shown below).

File	Command	Modify	Help
Male Female T o t a l			
61.8 38.2 = 100.0 %			
Educ			
LTHS	HSGrad	SomeColl	CollGrad
9.9	27.3	33.0	29.8
Total = 100.0 %			
Occup			
TopWC	OtrWC	Service	BC
32.8	30.3	8.4	28.6
Total = 100.0 %			
Earning			
<15K	15-25K	25-35K	35-50K
15.9	27.2	23.4	19.2
50K+ Total = 100.0 %			
14.3			

Since we are mainly interested in gender, earnings, and occupation, we will focus on these particular variables for our tables. Note that the earning variable contains five categories: <15K (less than \$15,000), 15-25K (\$15-25,000), 25-35K (\$25-35,000), 35-50K (\$35-50,000), and 50K+ (above \$50,000). Note that 14.3% of the people in this analysis earn more than \$50,000 per year.

The occupation variable contains four categories (see picture above): TopWC (Top White Collar), OthWC (Other White Collar), Service, and BC (Blue Collar). Note that 32.8% of the people are employed in top white collar jobs, which includes managers and professionals.

SAVING YOUR OUTPUT

Before you proceed further with analysis, you need to make an output file. The reason that this is important, is so that when you are done using StudentChip, you will want to have a file containing all of your work. To make an output file, go back and pull down the FILE menu and select the LOG option (as pictured on the following page).

File	Command	Modify	Help
Open... O	T o t a l		
Print file	38.2	= 100.0 %	
Print Screen			
Log			
End log	HSGrad	SomeColl	CollGrad
Clear	27.3	33.0	29.8
Quit Q	Total		= 100.0 %
Occup			
TopWC	OtrWC	Service	BC
32.8	30.3	8.4	28.6
Total		= 100.0 %	
Earning			
<15K	15-25K	25-35K	35-50K
15.9	27.2	23.4	19.2
50K+			Total
14.3			= 100.0 %

After you select the LOG option, your screen will look like this:

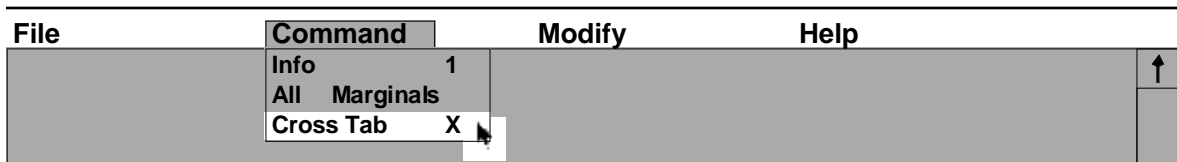
File	Command	Modify	Help						
Male	Female	T o t a l							
61.8	38.2	= 100.0 %							
Educ									
LTHS	Enter the name of output file								
9.9	Filename: Wagegap								
<table border="1"> <tr> <td>Ok</td> <td>(Enter)</td> </tr> <tr> <td>Help</td> <td>(F10)</td> </tr> <tr> <td>Cancel</td> <td>(Esc)</td> </tr> </table>				Ok	(Enter)	Help	(F10)	Cancel	(Esc)
Ok	(Enter)								
Help	(F10)								
Cancel	(Esc)								
Occup									
TopWC									
32.8									
Earning									
<15K	15-25K	25-35K	35-50K						
15.9	27.2	23.4	19.2						
50K+			Total						
14.3			= 100.0 %						

You will be asked to enter a short file name of your choice of either letters or numbers. We have named our output file "Wagegap." Please name your output file and then select the "OK (Enter)" button (also remember the name you gave to your output file!).

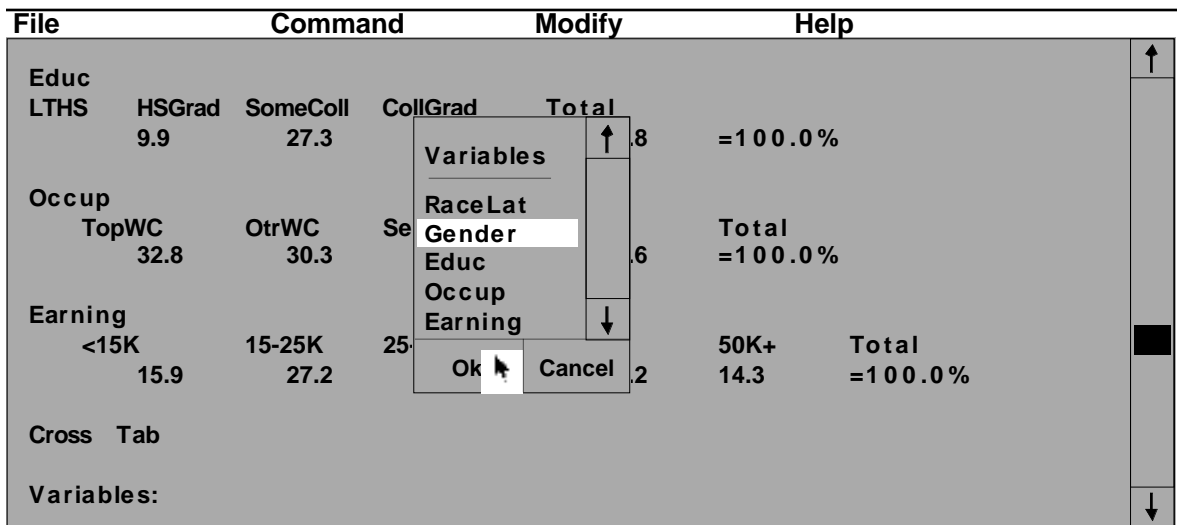
After you are done with your work, but before you exit the program go back to the File menu and select END LOG. This will save the output file, with your chosen name, on your disk. You can later access this file with any word processing program (like Microsoft Word or WordPerfect) or spreadsheet (like Excel) to observe the results of your analysis. You can also print your output file immediately by using your mouse to access the PRINT FILE command which is also found under the FILE menu.

MAKING A CROSSTAB

Returning to our example, we want to use the dataset **WORK9-35.DAT** to compare men's earnings with women's earnings. This requires making a table which cross tabulates GENDER with EARNING. To do this, we will construct a table using the CROSSTAB command located under the COMMAND menu (see picture next page).

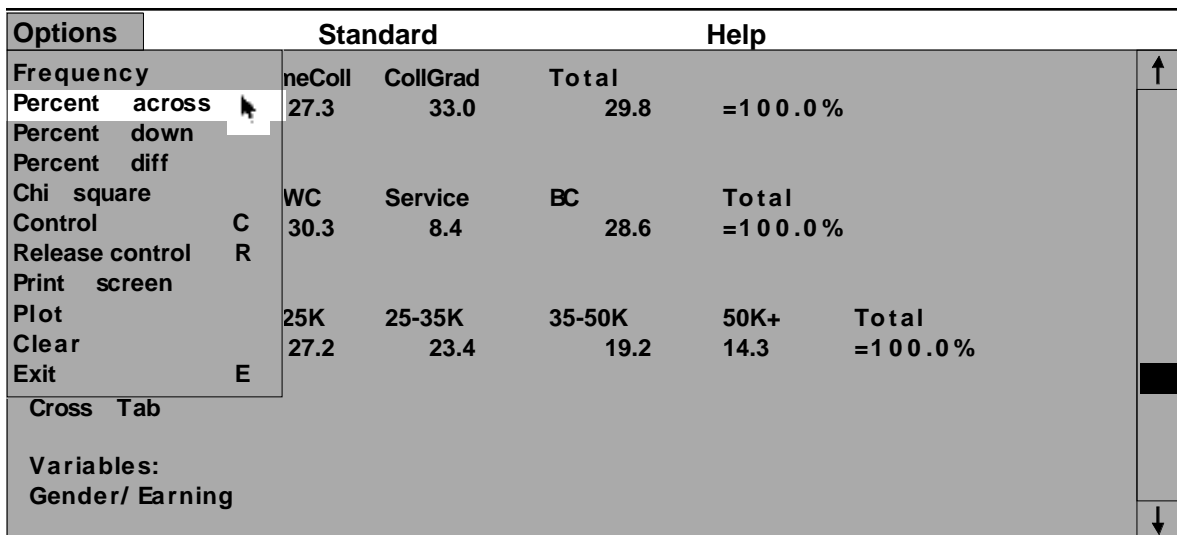


Use your mouse to highlight the variable GENDER, select the OK button, then highlight the variable EARNING, and select the OK button once more. Your screen should now look like this:



(Notice: the first variable you select, GENDER, will be the rows of the table, and the second variable, EARNING, will be the columns of the table.)

Then pull down the OPTIONS menu and select PERCENT ACROSS (see picture below).



(Note: in the exercises, you will sometimes need to use the PERCENT DOWN function which is also located in the OPTIONS menu, directly below the PERCENT ACROSS option).

After selecting the PERCENT ACROSS option, your screen will look like this:

Options	Standard					Help
Variables: Cross Tab						
Variables: Gender/ Earning	<15K	15-25	25-35	35-50	50K+	Total
Female	26.4	36.7	21.0	11.1	4.8	8102575.0
Male	9.5	21.4	24.8	24.1	20.2	13115787.0
All	15.9	28.2	23.4	19.2	14.3	N-21218362.0

The above table shows that of all women, 26.4% earn less than \$15,000, 36.7% earn between \$15,000 and \$25,000, and so on. Note that all of these earnings categories sum to 100%. The "total" category shows the number of women in the sample. Of men, 9.5% earn less than \$15,000, and so on. The "All" row represents the percentage of the entire sample in that earnings category. By analyzing this table, we see that there are actually large differences between men and women in earnings. A larger percentage of women earn less than \$15,000 while a much smaller percentage earn more than \$50,000; only 4.8% of women, compared to 20.2% of men, earn more than \$50,000 per year.

Once you are in StudentChip, there are two levels of menus, which you will notice as you progress through the program. The first level, which we used earlier, allows you to open files, get basic file information like marginals, modify variables, and other basic tasks. It includes: FILE, COMMAND, MODIFY, and HELP. The second level appears while you are doing crosstabs and includes: OPTIONS, STANDARD, and HELP.

While in the second level, you can return to the first level by selecting the EXIT command from the OPTIONS menu, which ends your work within this crosstab and takes you back to the first level of menus. From the first level, you can select a new crosstab with this dataset, open a new dataset (from the FILE menu as discussed earlier) or exit the program by selecting EXIT from the FILE menu.

CROSSTABS THAT "CONTROL" FOR ADDITIONAL VARIABLES

Instead of leaving the crosstab, suppose we want to investigate gender differences in earnings further. Therefore, remain with the second set of menus. We want to see if our observed differences in earnings, between men and women, depend on particular occupations. Therefore we want to compare the earnings of women and men within specific occupations. We call this "controlling" the original table for occupation. In effect, we are looking at earnings differences between men and women under the "controlled" conditions that they have the same occupations. To do this, you simply go to the OPTIONS menu and select CONTROL (see picture below).

Options	Standard					Help
Frequency						
Percent across						
Percent down						
Percent diff	-25	25-35	35-50	50K+	Total	
Chi square						
Control	.7	21.0	11.1	4.8	8102575.0	
Release control	.4	24.8	24.1	20.2	13115787.0	
Print screen						
Plot	.2	23.4	19.2	14.3	N-21218362.0	
Clear						
Exit	-25	25-35	35-50	50K+	Total	

From there, you use your mouse to highlight the variable OCCUP, and then select "OK." Finally, use your mouse to highlight NO MORE, and then select the "OK" button once more. Your screen will now look like this:

Options	Standard					Help
Variables: Cross Tab						
Variables: Gender / Earning	<15K	15-25	25-35	35-50	50K+	Tot al
Female	26.4	36.7	21.0	19.2	14.3	8102575.0
Male	9.5	21.4	24.8	19.2	14.3	13115787.0
All	15.9	28.2	23.4	19.2	14.3	N=21218362.0
Variables for control:						

You then return to the OPTIONS menu and select PERCENT ACROSS again, and this is what you will see:

File	Command				Modify	Help
Gender / Earning						
Occup = TopWC						
	<15K	15-25	25-35	35-50	50K+	Tot al
Female	10.6	29.0	29.6	20.8	10.0	2724857.0
Male	3.8	11.1	19.0	28.4	37.7	4227111.0
All	6.5	18.1	23.2	25.4	26.8	N=6951968.0

This is one of four tables you will get in this example. The first one shows you the earnings specifically for women and men who are in all top white collar jobs (TopWC). What this table tells us is that within this occupational category, while 37.7% of men earn more than \$50,000, only 10% of women earn that much. You would continue by reading the table in the same way as the earlier example.

By clicking the mouse on the down arrow key (located in the bottom right hand corner), or by pressing the RETURN (ENTER) key you can scroll through your new tables that are now specific to people in each occupational category. The tables show the earnings distribution of people with other white collar jobs (OtrWC), then service workers, then blue collar workers (BC).

You could also control for additional variables by selecting more control variables. (For example, if you wanted to control for education in addition to occupation, you would get a table for each combination of education and occupation, totaling 16 tables in all.) Before proceeding, go to the OPTIONS menu and select EXIT. This will take you back to the first level of menus (FILE, COMMAND, MODIFY, HELP).

EXITING THE PROGRAM

After you are done using StudentChip, all you need to do in order to exit is return to the FILE menu and select the QUIT option.

TROUBLESHOOTING

To open StudentChip in Windows 3.1 or Windows NT 3.1, follow these steps:

- In the Program Manager window, select the "File" menu in the pulldown menu bar at the top of the window. Then select "Run...".
- In the "Command Line:" box, type "a:\chip" and click on the "OK" button.

To open StudentChip in Windows 95 or Windows NT 4.0, follow these steps:

- Click on the "Start" button at the bottom left corner of the screen.
- Select "Run..." from the pop-up menu.
- In the "Command Line:" box, type "a:\chip" and click on the "OK" button.

If you do not have a cursor while in Chip, you most likely need to add the following lines of text to the autoexec.bat file on your computer:

```
SET MOUSE=C:\MOUSE
```

```
LOADHIGH C:\MOUSE\MOUSE.exe or instead, possibly MOUSE.COM
```