



IPUMS Data Training Exercise

An Introduction to IPUMS Time Use

(Exercise 2 for SAS)



Learning goals

- Create and download a ATUS data extract
- Decompress data file and read data into SAS
- Analyze the data using sample code

Summary

In this exercise, you will gain an understanding of how the Time Use dataset is structured and how it can be leveraged to explore your research interests. This exercise will use the Time Use dataset to explore basic frequencies of income, purchases, caring for children and time spent preparing food. You will create data extracts that include the variables ACT_PURCH, FAMINCOME, FOODPREP, and CHILDCARE; then, you will use a sample code to analyze these data.

SAS Code to Review

Code	Purpose
proc freq;	Begins a frequency procedure
proc means;	Begins a means procedure, returns the mean value of a variable
Tables	Required syntax to display frequencies
Where	Selects only specified cases to include in a procedure

Common Mistakes to Avoid

1. Not fully decompressing the data
2. Giving the wrong filepath to indicate the dataset
3. Forget to close a procedure with "run;"
4. Forget to terminate a command with a semicolon ";"

Registering with ATUS

Go to <http://www.atusdata.org/>, click on Login at the top, and apply for access. On login screen, enter email address and password and submit it!

Make an Extract

- On the homepage, go to Build an Extract (on the left column)
- Click on the "Change Samples" box, and select years 2009 and 2011. Keep the defaults "ATUS respondents" and select "Submit sample selections".
- Under the "Time Use" dropdown menu, select "Activity coding structure". Click on the plus sign next to the variable ACT_PURCH to select the variable and add it to our data cart.
- Click on the "Create time use variable" box at the top. Select "Load" next to ACT_HHACT, then the diamond sign next to Household Activities to expand the category.



- Unselect all subcategories except for "Food and Drink Preparation, Presentation, and Clean-up", and click "Save time use variable" at the bottom.
- Name your new variable "FOODPREP" and select "Save time use variable". This selects the time use variable we just created, and adds it to our data cart.

Request the Data

- Click on the "Create time use variable" box again, and this time select the box at the top "Create variable from scratch".
- Select the box next to All, then click on the "Secondary Activity" box at the top.
- Under Secondary Activity, select "Duration of time spent during activity on secondary child care of all children" and then "Save time use variable".
- Name this new variable "CHILDCARE" and label it "Secondary childcare". Then select "Save time use variable" again to select it and add it to the cart.
- Under the Household dropdown menu, click on Geographic and then select the variable REGION.
- Using the drop down menu or search feature, select the following variables and add them to your data cart using the plus symbol to the left of the variables:
 - ACT_PURCH: Consumer purchases
 - FAMINCOME: Yearly family income
 - AGE: Age
 - SEX: Sex
 - FOODPREP: Created variable for time spent preparing food
 - CHILDCARE: Created variable for time with childcare as a secondary activity

Review and submit your extract

- Choose the green "View Cart" at the top.
- Click on the green "Create data extract".
- You will get an email when the data is available to download
- To get to the page to download the data, follow the link in the email, or follow the Download/Revise Extracts link on the homepage.



Getting the data into your statistics software

The following instructions are for SAS. If you would like to use a different stats package, see: <https://ipums.org/support/exercises>

Download the Data

- Follow the link in the email notifying you that your extract is ready, or by clicking on the "Download and Revise Extracts" link on the left-hand side of the IPUMS Time Use homepage.
- Right-click on the data link next to the extract you created.
- Choose "Save Target As..." or "Save Link As..."
- Save into your preferred working directory. This tutorial assumes you will save the file into "Documents" (which should pop up as the default location).
- Do the same thing to save the SAS command file.

Decompress the data

- All IPUMS extracts are compressed. We recommend [7zip](#) for Windows users. Macs can open these types of files without additional software.
- Find the "Documents" folder under the Start menu.
- Double click on the ".dat" file.
- In the window that pops up, press the "Extract" button.
- After the extract has completed, confirm that the Documents folder contains three files that begin with "atus_000##".

Read the data

- Open the "atus_000##.sas" file.
- In the syntax editing window, change the first line from "libname IPUMS ' " to "libname IPUMS '\\Documents...; " using the file directory where you saved your data files.
- After "filename ASCIIDAT", enter the full file location, ending with atus_###.dat;
- Choose "Submit" under the Run file menu.



Analyze the Sample

Part I: Generate a New Variable

1. Create a variable that distinguishes individuals who reported consumer purchases on the day of their interview.

```
data ipums.atus_000##;
  set ipums.atus_000##;
  purchase = 0;
  if act_purch > 0 then purchase = 1;
run;
```

2. What proportion of the sample reported consumer purchases for each year? _____

```
proc freq;
  tables purchase*year;
run;
```

3. Is there a difference in incidence of consumer purchasing between men and women in 2009? _____

```
proc sort;
  by sex;
proc freq;
  tables purchase* year;
  by sex;
run;
```



4. In the sample, when consumer purchases are greater than zero, what is the average amount of time spent on purchases each year? Does it appear the recession had any effect? _____
- _____

```
proc means;  
    var act_purch;  
    class year;  
run;
```

Part II: Using Weights (WT06)

Note on Weights

The ATUS sample design requires use of weights to provide an accurate representation at the national level. Half of the interview days in the sample are weekdays, while the other half are weekends. The weight WT06 adjusts for the disproportional number of weekend days, and should be used to weight time use variables. More specifically, WT06 gives the number of person-days in the calendar quarter represented by each survey response. Also keep in mind that the "Eating and Health," "Well-Being," and "Employee Leave" Modules have weights unique to them.

5. Using weights, what is the average time spent on purchases? _____

```
proc means;  
    var act_purch;  
    class year;  
    weight wt06;  
run;
```



Part III: Relationships in the Data

Go to the ATUS homepage and choose Demographic Variables.

6. What is the range of values for this variable? What values indicate family incomes of \$35,000 and higher? _____

7. What is the average time spent in food preparation across income groups? Is there a trend? _____

```
proc means;  
    var foodprep;  
    class famincome;  
    weight wt06;  
run;
```

8. Does the pattern change when you separate the analysis by year? _____

```
proc means;  
    var foodprep;  
    class famincome;  
    weight wt06;  
    by year;  
run;
```

9. What could be an explanation for the result in parts 7 and 8? _____



IV. Graph the Data

10. Graph the results from 8.

```
proc sgpanel data = ipumsATUS_000##;
  panelby year;
  vbar famincome / stat =mean
    response=foodprep;
run;
```

Note: SAS graph procedures do not allow for WEIGHT options, so graph analyses are at the sample level

V. Relationships in Data Part II

11. The way the variable CHILDCARE is constructed, what activities will it include? _____

12. What are the codes for REGION? Find it under Demographic Variables.

13. What is the average amount of time for adults to be taking care of children as a secondary activity? _____

```
data ipumsATUS_000##;
  set ipumsATUS_000##;
proc means;
  var childcare;
  where age >=18;
  weight wt06;
run;
```



14. Are there differences in means across regions in 2011 in time spent in secondary child care? What about between men and women? _____

```
proc means;  
    var childcare;  
    class region;  
    where age >=18 & year = 2011;  
    weight wt06;  
run;  
  
proc means;  
    var childcare;  
    class sex;  
    where age >=18 & year = 2011;  
    weight wt06;  
run;
```



Answers

Part I: Generate a New Variable

1. Create a variable that distinguishes individuals who reported consumer purchases on the day of their interview.
2. Find a frequency for reported consumer purchases for the sample for each year? 2009: 41.58%; 2011: 40.82%
3. Is there a difference in incidence of consumer purchasing between men and women in 2009? Women: 44.97; Men: 37.08
4. In the sample, when consumer purchases are greater than zero, what is the average amount of time spent on purchases each year? Does it appear the recession had any effect? 2009: 25 minutes; 2011: 24.7 minutes. There appears to be no significant difference between the two years.

Part II: Using Weights (WT06)

Note on Weights

5. Using weights, what is the average time spent on purchases? 2009: 22.7 minutes; 2011: 22.2 minutes.

Part III: Relationships in the Data

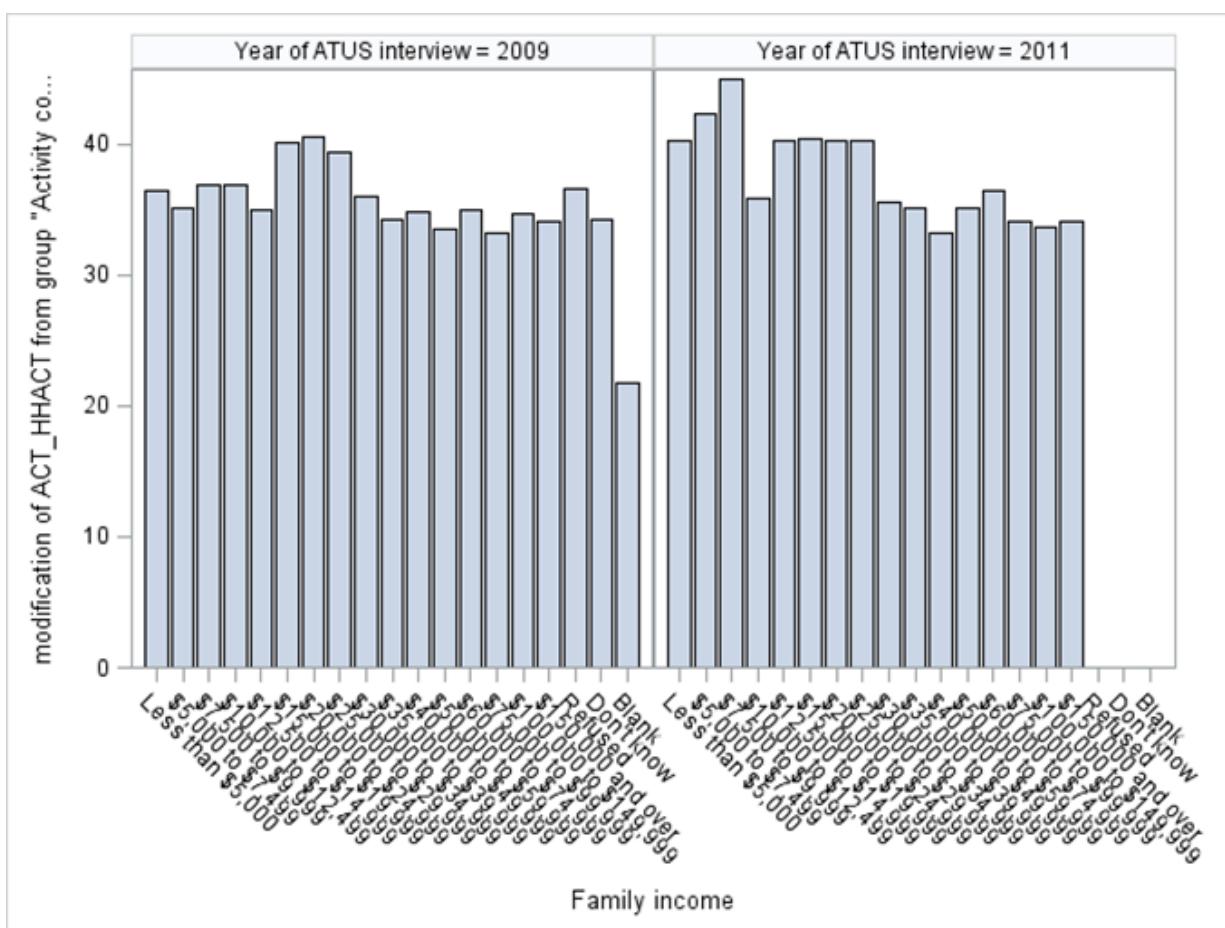
6. What is the range of values for this variable? What values indicate family incomes of \$35,000 and higher? Codes 10 through 16.
7. What is the average time spent in food preparation across income groups? Is there a trend? There appears to be a small peak in income groups 5 through 7, then a slight decline.



8. Does the pattern change when you separate the analysis by year? Not significantly.
9. What could be an explanation for the result in parts 7 and 8? The lowest income group may have slightly lower food prep time because they may work multiple jobs or be single parents with not enough time to dedicate to food preparation, while on the other hand, high paying jobs such as lawyers may have a high opportunity cost of time and also work long hours.

IV. Graph the Data

10. Graph the results from 8.



V. Relationships in Data Part II

11. The way the variable CHILDCARE is constructed, what activities will it include? CHILDCARE should include time in any activity in which the respondent also

reported child care at the same time.

12. What are the codes for REGION? Find it under Demographic Variables.

1: Northeast; 2: Midwest; 3: South; 4: West

13. What is the average amount of time for adults to be taking care of

children as a secondary activity? 101.24 minutes a day.

14. Are there differences in means across regions in 2011 in time spent in

secondary child care? What about between men and women? The

Northeast has the lowest average, while the South has the highest. Women are more

likely to be incorporating childcare into other activities (74.9 for men, 125.5 for

women).

