

American Time Use Survey (ATUS) Data Dictionary:
2010 Well-being Module Data
Variables collected in the ATUS Well-being Module
November 2011

The ATUS Well-being Module is sponsored by the National Institute on Aging.
The ATUS is sponsored by the Bureau of Labor Statistics and conducted by the U.S. Census Bureau.

Important Information about the Well-being Module Data Dictionary

Introduction

The National Institute on Aging sponsored the Well-being (WB) Module of the American Time Use Survey (ATUS). The ATUS is sponsored by the Bureau of Labor Statistics and conducted by the U.S. Census Bureau. The purpose of this document is to provide information about the variables available on the ATUS WB Module data files: the WB Respondent file and the WB Activity file. The WB Module data files are currently available for 2010 and contain information gathered from the 2010 ATUS interviews. All WB Module questions were asked at the end of the ATUS interview.

This data dictionary lists all the variables available on the WB files and their valid values. It also provides directions on how to read the data dictionary.

Two other data dictionaries describe the basic ATUS data files. The first describes the ATUS-CPS file, which contains data from the Current Population Survey (CPS) files for those selected to be surveyed for ATUS and members of their households. (The information on the ATUS-CPS file was collected two to five months before the ATUS interview and may have been out of date at the time of the ATUS survey.) The second is the ATUS interview data dictionary which describes the variables available on four files: the Roster file, the Activity file, the Who file, and the Respondent file. These variables were collected and assigned in the ATUS interview.

Two other data dictionaries describe additional ATUS data files. The first describes the ATUS Survey Methodology data, made up of the Case History file and the Call History file. The second describes the Trips file.

Each of these additional data dictionaries describes variables from an individual year. They are available on the ATUS Web site at <http://www.bls.gov/tus/dictionaries.htm>.

ATUS WB Module Data Files

The following data files include data available from the ATUS interviews.

1. WB Respondent File

This file contains case-specific variables collected in the WB Module (that is, variables for which there is one value for each respondent). These include, for example, general health information, how well-rested the respondent felt on his diary day (the day about which he was interviewed), and WB Module respondent-level statistical weights. There is one record for each WB Module respondent.

Below is a simplified example. The TUCASEID identifies each household, and TULINENO identifies each individual within the household. The example contains responses from 5 individuals; note that the respondent always has TULINENO=1. (All records on the WB Respondent file have TULINENO=1 because only one person in the household responded to the ATUS.) In the example, each respondent has a corresponding statistical weight (WUFINLWGT) for use in generating estimates representative of the U.S. civilian, noninstitutionalized population age 15 and over. The respondent-level weight WUFINLWGT should be used instead of the ATUS statistical weight TUFINLWGT when using WB Module data. Some ATUS respondents did not complete the WB Module and so there are fewer WB Module respondents than ATUS respondents; WUFINLWGT accounts for this minimal nonresponse.

All ATUS respondents are selected to participate in the WB Module. However, if an insufficient number of questions are answered, the person is not included as a WB Module respondent. See Appendix A for a description of how these cases are determined.

This example also demonstrates that each respondent has corresponding values denoting general health status (WEGENHTH) and how well-rested the respondent felt (WEREST). The actual WB Respondent file contains additional variables as well as many more lines.

TUCASEID	TULINENO	WUFINLWGT	WEGENHTH	WEREST
20100101100605	1	4040229.08	5	2
20100604101229	1	1438440.99	4	1
20100807100994	1	3151945.82	2	4
20100908101868	1	1621125.07	1	3
20101211101129	1	14724370.75	3	1

2. WB Activity File

In the WB Module, the survey randomly selects 3 activities reported by each respondent. For each selected activity, the respondents were asked 7 questions related to quality of life (5 affect questions, 1 question about how meaningful the activity was, and 1 question about whether the respondent was interacting with anyone during the activity). The order of the 5 affect questions was randomly determined for each respondent. This file includes the activity-level information collected in the WB Module, including activity number and information about how the respondent felt during the selected activities.

There is one record for each activity selected for the module. The activities must meet the following selection criteria:

- The activity must be at least 5 minutes in duration
- The following activities and responses are not eligible for selection:
 - Sleeping (0101xx)
 - Grooming (0102xx)
 - Personal Activities (0104xx)
 - Don't know/Can't remember (500106)
 - Refusal/None of your business (500105)

A simplified example of the WB Activity file appears below. This is an illustration of one respondent's day. Because only one person was interviewed per household, each TUCASEID on the WB Activity file identifies a respondent. Each activity is identified by an activity number (TUACTIONITY_N). In the example, each activity has corresponding values denoting how happy the respondent felt during the activity (WUHAPPY) and whether the respondent was interacting with anyone during the activity (WUINTERACT) in addition to the activity-level statistical weight (WUFNACTWT). The actual WB Activity file contains more variables describing the feelings associated with each selected activity as well as many more lines than does the example below.

TUCASEID	TUACTIONITY_N	WUHAPPY	WUINTERACT	WUFNACTWT
20100101102152	2	3	2	12059879.6
20100101102152	7	1	2	2009974.4
20100101102152	13	6	1	4019965.4

WB Activity Weights

The WB Module activity weight variable WUFNACTWT is designed to estimate average levels of affect for the population during activities eligible for the module. They can also be used to estimate population averages for functions of affect such as "U-indexes" (Krueger 2007)¹. The weights account for differences between activities in the fraction of time spent in eligible activities. They also account for differences between persons in the probability of having a specific eligible activity selected due to variation in the number of eligible activities.

As an example of their use in estimation, the average level of pain that persons experienced during their eligible activities during a day (\bar{P}) can be estimated as

$$(1) \quad \bar{P} = \frac{\sum_i \sum_k w_{ik} P_{ik}}{\sum_i \sum_k w_{ik}}$$

where i denotes respondent, k denotes sampled activity, P denotes the reported level of pain, and w_{ik} denotes the weight attached to activity k for respondent i .

The weights are person-day based rather than time based—that is, equation (1) estimates the average affect level across the population of person-days. Accordingly, this formula cannot be applied to estimate the average level of affect during a minute of a specific type of activity--the average level of pain while working for pay, for example. Denote this average as \bar{P}^* . An unbiased estimate of \bar{P}^* can be generated by modifying WUFNACTWT by multiplying it by the total amount of time in eligible activities (WRTELIG) and applying equation (1), restricted to observations of the activity of interest:

$$(2) \quad \bar{P}^* = \frac{\sum_i \sum_k I_{ik} w'_{ik} P_{ik}}{\sum_i \sum_k I_{ik} w'_{ik}} = \frac{\sum_i T_i \sum_k I_{ik} w_{ik} P_{ik}}{\sum_i T_i \sum_k I_{ik} w_{ik}}$$

where w' denotes the modified weights, T_i denotes WRTELIG for respondent i , and I_{ik} is an indicator variable for the activity of interest.

For example, in 2010, the estimate for the average level of pain that employed persons experienced during all eligible activities was 0.78, where 0 is no pain at all and 6 is pain as bad as it can be. Modifying

¹ Krueger, Alan B. 2007. "Are We Having More Fun Yet? Categorizing and Evaluating Changes in Time Allocation." Brookings Papers on Economic Activity, Vol. 2007, No. 2, pp. 193-215.

the weights and calculating the average level of pain during work activities (0501) resulted in an estimate of 0.83 (although the difference between these estimates is not statistically significant)². See Appendix B for an illustration of the calculation of these estimates.

Some activity weights are assigned a value of zero. If an insufficient number of questions were answered for the activity, a weight of zero was assigned. See Appendix A for a discussion of the assignment of the activity weights.

WB Module weights – general recommendations

- Estimates using the general health questions (those on the WB respondent file) and not any of the WB module activity data should use WUFINLWGT.
- Estimates using only the WB Module activity data should use WUFNACTWT.
- Estimates using data from the WB Module respondents in conjunction with the activity-level WB Module data should use WUFNACTWT.

3. WB Replicate weights files

The WB Replicate Weights files contain weights necessary for generating standard errors for WB Module estimates. The WB Respondent Replicate weights file contains one record for each individual who responded to the WB Module. The WB Activity Replicate weights file contains one record for each activity selected for the WB Module. Technical information about the WB Replicate weights files can be found in the text document that is enclosed in the WB Module Replicate Weights zip files. See Chapter 7 of the ATUS User's Guide (<http://www.bls.gov/tus/atususersguide.pdf>) for guidance on calculation of standard errors using the replicate weights

² The WB activity replicate weights were used to calculate the standard errors for these estimates. See Chapter 7 of the ATUS User's Guide (<http://www.bls.gov/tus/atususersguide.pdf>) for guidance on calculation of standard errors using the replicate weights.

WB Module Naming Conventions and Definitions

WB Module variables are named according to specified rules. Variables with a first character of “W” (for Well-being) were collected or created through the WB Module interview questions. Variables with a first character of “T” (for time use) were collected or created through the ATUS interview. There are only three “T” variables on the WB Module files. These are the ATUS case ID (TUCASEID); the ATUS person line number (TULINENO) and the ATUS activity number (TUACTIVITY_N); these variables are used to link WB files to ATUS files.

The second and third characters of the name identify the type of variable, and the remaining characters consist of a descriptive name. The rules regarding the first two or three characters are described in the table below:

Abbreviation	Variable Type	Definition
U	Unedited Variable	An unedited variable generally is produced by the Computer Assisted Telephone Interview (CATI) instrument, either collected or assigned during the interview.
E	Edited Variable	<p>An edited variable is one that has gone through an editing process (a process checking for consistency). Values of edited variables are almost always equal to values of the corresponding unedited variables. Data differ when a value is allocated or imputed by the processing system based on allocation rules specified in ATUS processing. Allocations are typically performed when the unedited variable contains a value of blank, "don't know," or "refused."</p> <p>An edited version of a variable exists only if that variable goes through an editing process. If there are no edits for a variable, then only an unedited version of that variable exists.</p>
RT	Summary Variable	These variables summarize the amount of time respondents spent doing selected activities. For example, WRTELG is the total time the respondent spent in all activities eligible to be selected for the WB Module,
X	Allocation Flag	Each edited variable has a corresponding allocation flag indicating the nature of the allocation. For example, if WUHBP is "don't know," WEHBP would be allocated, and this would be indicated by a WXHBP value of 42. See the section below on allocation flags for the standard list of values.

Using these rules, variables can be more readily understood based on their names. For example, the variable WEREST can be broken down as follows:

- The first character “W” indicates that this variable was collected or created through the ATUS WB Module interview questions
- The second character “E” indicates that this variable went through an editing process; it also means there will be a corresponding allocation flag, WXREST, to indicate the nature of the allocation
- The final part of the variable name, “REST,” is descriptive and, in this case, refers to how well-rested the respondent felt when he woke up.

Not all WB Module variables are on the files. When there is an edited variable, the corresponding unedited variable is usually omitted from the files. If an unedited variable is included on the files, an edited version does not exist.

Allocation Flags

For every edited variable (or all "E" variables), there is a corresponding allocation flag whose second character is "X." All remaining characters of the two variables' names are the same. For example, WXGENHHTH is the allocation flag for WEGENHHTH.

All allocation flags have the following list of possible values:

- 0 Value – no change
- 1 Blank – no change
- 2 Don't know – no change
- 3 Refused – no change
- 10 Value to value
- 11 Blank to value
- 12 Don't know to value
- 13 Refused to value
- 20 Value to longitudinal value
- 21 Blank to longitudinal value
- 22 Don't know to longitudinal value
- 23 Refused to longitudinal value
- 30 Value to allocated longitudinal value (unused)
- 31 Blank to allocated longitudinal value (unused)
- 32 Don't know to allocated longitudinal value (unused)
- 33 Refused to allocated longitudinal value (unused)
- 40 Value to allocated value
- 41 Blank to allocated value
- 42 Don't know to allocated value
- 43 Refused to allocated value
- 50 Value to blank
- 52 Don't know to blank
- 53 Refused to blank

Each digit of these valid values identifies how and why edited variables were allocated.

The first digit indicates how the allocation was made to the "E" (or edited) variable.

First Digit	
0 or Blank	No change between "U" variable and "E" variable
1	"E" variable changed to a value
2	"E" variable changed to a longitudinal value (the corresponding value from the CPS data)
3	"E" variable changed to an allocated longitudinal value (the corresponding allocated value from CPS data) - unused
4	"E" variable changed to allocated value
5	"E" variable changed to a blank

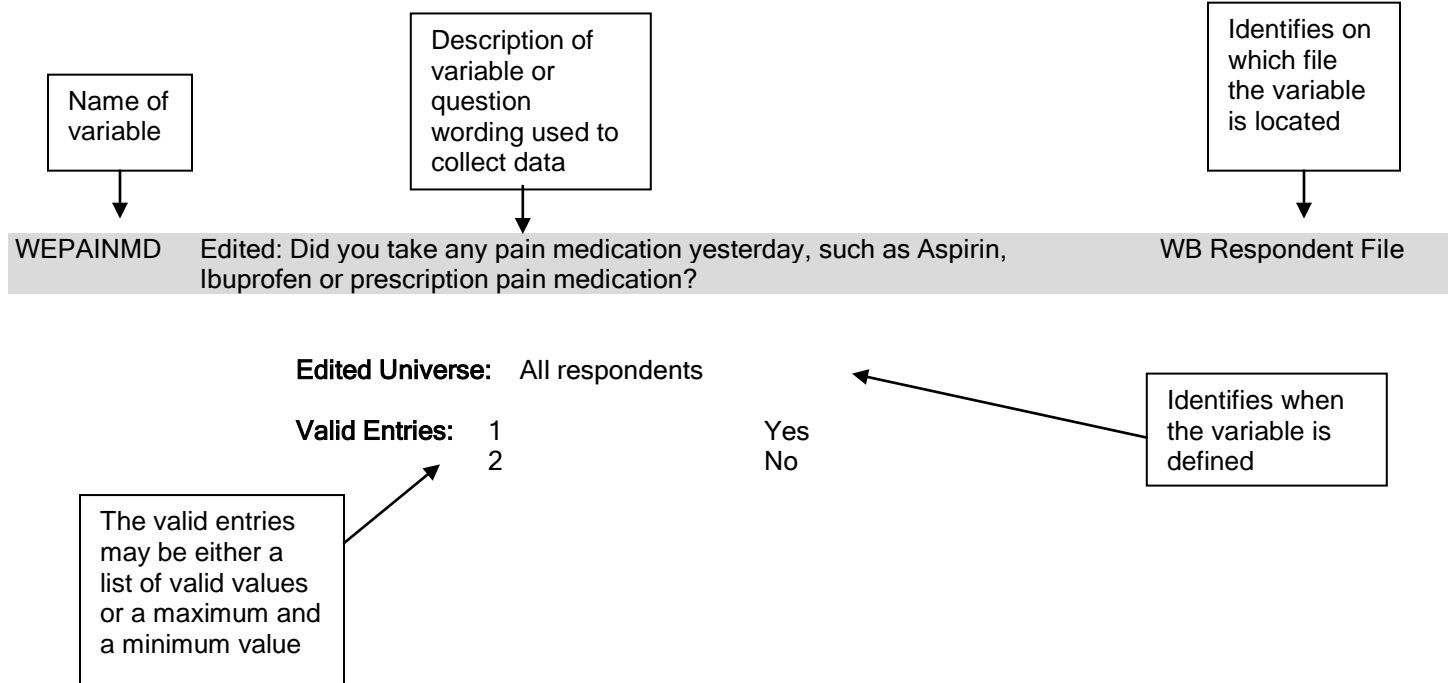
The second digit indicates why the "U" variable was allocated, whether the value was an unacceptable one, missing, don't know, or refused.

Second Digit	
0	"U" variable was equal to some value
1	"U" variable was blank (or -1)
2	"U" variable was don't know (or -2)
3	"U" variable was refused (or -3)

Organization of the Data Dictionary

Variables are listed in the data dictionary in alphabetical order.

Below is a sample entry from the ATUS Well-being Module data dictionary:



Valid Values

Each variable has a number of valid values or a range of valid values. For example, the variable WEGENHTH (general health) has five valid values: 1 for excellent, 2 for very good, 3 for good, 4 for fair, and 5 for poor. The variable WRTELG (total time spent in all eligible activities), on the other hand, has a range of valid values – any entry between 5 and 1440 is considered valid. Individual valid values or a range of valid values are listed under each variable in the data dictionary.

Many ATUS variables have the following possible valid values:

Value	Description
-1	Blank
-2	Don't know
-3	Refused

Since so many variables have these possible values, they are not shown as valid entries for each variable.

TUCASEID, the primary identification number for ATUS, does not have either a list of valid values or a range of valid values.

Linking WB Module files to other ATUS Data Files

Each of the WB Module data files contains useful information, but in order to produce most estimates, the files must be linked to other ATUS files. All of the data files contain the variables TUCASEID, which is the ATUS identification number. Two other variables that can be used for linking in conjunction with TUCASEID are TULINENO (person line number) and TUACTIONITY_N (activity line number).

File	Linking Variables
WB Module data files	
WB Respondent file	TUCASEID TULINENO (always equal to 1 on the WB Respondent file)
WB Activity file	TUCASEID TUACTIONITY_N
WB Respondent-level Replicate Weights file	TUCASEID
WB Activity-level Replicate Weights file	TUCASEID TUACTIONITY_N
Basic ATUS data files	
Respondent file	TUCASEID TULINENO (always equal to 1 on the Respondent file)
Roster file	TUCASEID TULINENO
Activity file	TUCASEID TUACTIONITY_N
Who file	TUCASEID TUACTIONITY_N TULINENO
ATUS-CPS file	TUCASEID TULINENO
Activity Summary file	TUCASEID
Additional ATUS data files	
Case History file	TUCASEID
Call History file	TUCASEID
Trips file	TUCASEID
Replicate Weights file	TUCASEID

The ATUS files can also be linked to CPS files. More information is available in the ATUS-CPS data dictionary, available online at <http://www.bls.gov/tus/dictionaries.htm>.

2010 ATUS Data Dictionary: Public Well-being module Data

Name	Description	File
TUACTIVITY_N	Activity line number	Activity File, Who File, WB Activity File
	Valid Entries: 1 91	Min Value Max Value
TUCASEID	ATUS Case ID (14-digit identifier)	All Files
TULINENO	ATUS person line number	ATUS-CPS File, Respondent File, Roster File, Who File, WB Respondent File
	Valid Entries: 1 30	Min Value Max Value
	* Note: The person selected to be interviewed for ATUS is always TULINENO = 1	
WEGENHTH	Edited: Would you say your health in general is excellent, very good, good, fair, or poor?	WB Respondent File
	Edited Universe: All respondents	
	Valid Entries: 1 2 3 4 5	Excellent Very Good Good Fair Poor
WEHBP	Edited: In the last five years, were you ever told by a doctor or other health professional that you have hypertension, also called high blood pressure, or borderline hypertension?	WB Respondent File
	Edited Universe: All respondents	
	Valid Entries: 1 2	Yes No
WEPAINMD	Edited: Did you take any pain medication yesterday, such as Aspirin, Ibuprofen or prescription pain medication?	WB Respondent File
	Edited Universe: All respondents	
	Valid Entries: 1 2	Yes No
WEREST	Edited: When you woke up yesterday, how well-rested did you feel? Did you feel very rested, somewhat rested, a little rested, or not at all rested?	WB Respondent File
	Edited Universe: All respondents	
	Valid Entries: 1 2 3 4	Very Somewhat A little Not at all
WRTELIG	Total time spent in all activities eligible to be selected for Well-being module	WB Respondent File
	Edited Universe: All respondents	
	Valid Entries: 5 1440	Min Value Max Value

Name	Description	File
	* Note: Includes time spent in all activities except 0101xx, 0102xx, 0104xx, 500105, and 500106	
WUFINLWGT	Well-being module respondent weight	WB Respondent File
	Valid Entries: 0 9999999999	Min Value Max Value
WUFNACTWT	Well-being module activity weight	WB Activity File
	Valid Entries: 0 9999999999	Min Value Max Value
	* Note: For each activity, if the data are missing, or the respondent refuses to answer or reports "don't know" to 4 or more of the affect questions (WUHAPPY, WUPAIN, WUSAD, WUSTRESS, WUTIRED), meaningful (WUMEANING), or interaction (WUINTERACT) question, a value of 0 is assigned to the activity weight for that activity.	
WUHAPORD	Order of WUHAPPY	WB Activity File
	Valid Entries: 1 5	Min Value Max Value
	* Note: For each respondent to the Well-being module, the order of the affect questions (WUHAPPY, WUPAIN, WUSAD, WUSTRESS, and WUTIRED) was assigned randomly.	
WUHAPPY	From 0 to 6, where a 0 means you were not happy at all and a 6 means you were very happy, how happy did you feel during this time?	WB Activity File
	Valid Entries: 0 6	Min Value Max Value
WUINTERACT	Were you interacting with anyone during this time, including over the phone?	WB Activity File
	Valid Entries: 1 Yes 2 No	
WUMEANING	From 0 to 6, how meaningful did you consider what you were doing? 0 means it was not meaningful at all to you and a 6 means it was very meaningful to you.	WB Activity File
	Valid Entries: 0 6	Min Value Max Value
WUPAIN	From 0 to 6, where a 0 means you did not feel any pain at all and a 6 means you were in severe pain, how much pain did you feel during this time if any?	WB Activity File
	Valid Entries: 0 6	Min Value Max Value
WUPNORD	Order of WUPAIN	WB Activity File
	Valid Entries: 1 5	Min Value Max Value
	* Note: For each respondent to the Well-being module, the order of the affect questions (WUHAPPY, WUPAIN, WUSAD, WUSTRESS, and WUTIRED) was assigned randomly	
WUSAD	From 0 to 6, where a 0 means you were not sad at all and a 6 means you were very sad, how sad did you feel during this time?	WB Activity File
	Valid Entries: 0 6	Min Value Max Value
WUSADORD	Order of WUSAD	WB Activity File
	Valid Entries: 1 5	Min Value Max Value

Name	Description	File
	<p>* Note: For each respondent to the Well-being module, the order of the affect questions (WUHAPPY, WUPAIN, WUSAD, WUSTRESS, and WUTIRED) was assigned randomly.</p>	
WUSTRESS	From 0 to 6, where a 0 means you were not stressed at all and a 6 means you were very stressed, how stressed did you feel during this time?	WB Activity File
	<p>Valid Entries: 0 Min Value 6 Max Value</p>	
WUSTRORD	Order of WUSTRESS	WB Activity File
	<p>Valid Entries: 1 Min Value 5 Max Value</p> <p>* Note: For each respondent to the Well-being module, the order of the affect questions (WUHAPPY, WUPAIN, WUSAD, WUSTRESS, and WUTIRED) was assigned randomly.</p>	
WUTIRED	From 0 to 6, where a 0 means you were not tired at all and a 6 means you were very tired, how tired did you feel during this time?	WB Activity File
	<p>Valid Entries: 0 Min Value 6 Max Value</p>	
WUTRDORD	Order of WUTIRED	WB Activity File
	<p>Valid Entries: 1 Min Value 5 Max Value</p> <p>* Note: For each respondent to the Well-being module, the order of the affect questions (WUHAPPY, WUPAIN, WUSAD, WUSTRESS, and WUTIRED) was assigned randomly.</p>	
WXGENHTH	WEGENHTH: allocation flag	WB Respondent File
	* Note: See introduction for allocation flag values	
WXHBP	WEHBP: allocation flag	WB Respondent File
	* Note: See introduction for allocation flag values	
WPAINMD	WEPAINMD: allocation flag	WB Respondent File
	* Note: See introduction for allocation flag values	
WXREST	WEREST: allocation flag	WB Respondent File
	* Note: See introduction for allocation flag values	

Appendix A

Determination of Well-being Module respondents

Some ATUS respondents are not counted as Well-being (WB) Module respondents. To be counted as a completed interview for the WB Module, the respondent had to meet the following criteria:

1. Answer at least 4 of the 7 questions about the activity for at least 1 of the 3 activities selected, where the 7 questions include the 5 affect, the meaningful, and the interaction questions
2. Answer at least 1 of the final 4 general health questions

For each activity, if the respondent did not provide answers for at least 4 of the 7 questions about the activity, the Well-being activity weight was assigned a value equal to 0. If all 3 activities had activity weights equal to 0, the case was not counted as a completed interview for the WB Module, and no information about the respondent was included on any of the WB Module files.

A simplified example of the Well-being activity file appears below. This illustrates the assignment of a Well-being activity weight when fewer than 4 of the 7 questions about the activity were answered. For TUCASEID equal to 20100101100605, and TUACTIONITY_N equal to 5, the only questions receiving answers were WUSAD, WUTIRED, and WUSTRESS. The remaining questions for that activity have values of -3 (Refused). Consequently, this activity received a weight (WUFNACTWT) equal to 0. Note that the other activities for which this respondent provided answers had values for all of the 7 questions, and the activity weights have non-zero values.

Well-being Activity file

TUCASEID	TUACTIONITY_N	WUMEANING	WUINTERACT	WUHAPPY	WUSAD	WUTIRED	WUPAIN	WUSTRESS	WUFNACTWT
20100101100605	5	-3	-3	-3	0	3	-3	0	0
20100101100605	2	6	2	3	0	0	0	0	1584404.114
20100101100605	3	6	2	0	0	0	4	0	5941512.398
20100111090591	6	-3	-3	-3	0	-3	0	-3	0
20100111090591	10	-3	-3	-3	-3	-3	-3	-3	0
20100111090591	3	6	2	6	0	6	0	5	185636.9856
20101111101356	10	6	1	6	0	3	0	0	1097574.813
20101111101356	24	2	1	4	0	4	0	4	6585431.208
20101111101356	8	0	1	6	0	3	0	2	26341707.16
20101211101424	14	-3	-3	-3	-3	-3	-3	-3	0

20101211101424	3	-2	2	6	0	0	0	0	136758.0381
20101211101424	6	-2	2	5	0	0	0	0	547027.6668
20101211102463	8	-3	-3	-3	-3	-3	-3	-3	0
20101211102463	9	-3	-3	-3	-3	-3	-3	-3	0
20101211102463	5	-3	-3	6	0	0	-3	0	207667.5408

A simplified example of the Well-being respondent file is shown below for the same cases. This file includes responses to the final 4 health questions (WEPAINMD, WEGENHTH, WEHBP, WEREST). However, the file presents the edited versions of these variables only. Thus, one cannot determine with these variables whether the respondent provided an answer to at least 1 of the final 4 questions. The values for the allocation flags (WXPAINMD, WXHBP, WXREST, WXGENHTH) can identify which questions did have original responses, and which ones were assigned allocated values (See page 7). A value of 0 indicates that the no change was made to the unedited response and a value of 43 indicates that the value was changed from Refused (-3) to a value. While some of these cases show that allocations were made for some of the final 4 questions, none of the cases had allocated values for all of the final 4 questions. All of these cases are considered completes and information about the respondent and the affects for these activities are included on the Well-being files.

Well-being Respondent file

TUCASEID	WEPAINMD	WEGENHTH	WEHBP	WEREST	WXPAINMD	WXHBP	WXREST	WXGENHTH	WUFINLWGT
20100101100605	1	5	1	2	0	43	0	0	4040229.077
20100111090591	2	2	2	2	0	0	0	0	1587197.1
20101111101356	2	3	2	2	0	0	0	0	8414713.307
20101211101424	2	3	1	3	43	43	0	43	1602012.479
20101211102463	1	5	1	1	0	0	0	0	3971670.711

Appendix B

Example - Use of Well-being activity weights

This example shows how to create estimates for the average level of pain for all activities for the selected employed respondents. It uses equation (1) shown on page 4. The data shown here are taken from the following files: ATUS activity, Well-being respondent, and Well-being activity files. Each TUCASEID shows 3 selected activities, the level of pain experienced during those activities (WUPAIN) and the activity weight (WUFNACTWT). The weighted level of pain for each activity is shown in the last column. The sum of these weighted pain variables is shown at the bottom. The sum of all the activity weights for these activities is also shown at the bottom. The average level of pain is then calculated as the ratio of the two – the result here is 1.82. This result differs from the result shown in the introduction because data from only a few cases are used here, whereas the full set of WB Module respondents was used to calculate the result shown on page 5.

All Activities included

TUCASEID	WRTEG	TUACTIVITY_N	TUACTDUR24	TRTIER2	WUPAIN	WUFNACTWT	WUFNACTWT*WUPAIN
20100111090800	990	3	30	0202	0	3102100.939	0
20100111090800	990	8	10	1803	0	1034033.646	0
20100111090800	990	10	10	1812	0	1034033.646	0
20100504101233	915	3	15	1101	0	738343.6526	0
20100504101233	915	6	30	1101	0	1476691.809	0
20100504101233	915	7	180	0501	0	8860146.351	0
20100504101244	1155	5	30	1101	3	5665414.799	16996244.4
20100504101244	1155	6	405	0501	3	76483187.03	229449561.1
20100504101244	1155	10	5	0701	3	944235.7998	2832707.399
20100504101368	690	3	10	1102	0	1060949.657	0
20100504101368	690	11	32	1805	2	3395027.191	6790054.381
20100504101368	690	12	198	0501	0	21006734.4	0
20100504101440	955	10	5	1805	1	390005.9575	390005.9575
20100504101440	955	11	205	0501	1	15990251.7	15990251.7
20100504101440	955	16	240	0501	1	18720293.41	18720293.41
Total						159901450	291169118.3
Average level of pain							1.82

Using the same cases, this example illustrates the use of equation (2) shown on page 4 for estimating the average level of pain for a specific activity. In this case, if the activity is working (TRTIER2=0501), an indicator variable (I_{ik}) is set equal to 1 and is 0 otherwise. Multiplying the activity weights by WRTELG, one can create estimates for the average level of pain for this group of cases for work activities only. In this case, the average level of pain during this activity is 2.07. This result differs from the result shown in the introduction because data from only a few cases are used here.

Work only (TRTIER2 = 0501)

TUCASEID	WRTELG	TUACTIVITY_N	TRTIER2	WUPAIN	WUFNACTWT	WUFNACTWT* WRTELG	I_{ik}	I_{ik} *WUFNACTWT* WRTELG*PAIN	I_{ik} *WUFNACTWT* WRTELG
20100111090800	990	3	0202	0	3102100.939	3071079929	0	0	0
20100111090800	990	8	1803	0	1034033.646	1023693310	0	0	0
20100111090800	990	10	1812	0	1034033.646	1023693310	0	0	0
20100504101233	915	3	1101	0	738343.6526	675584442.2	0	0	0
20100504101233	915	6	1101	0	1476691.809	1351173005	0	0	0
20100504101233	915	7	0501	0	8860146.351	8107033911	1	0	8107033911
20100504101244	1155	5	1101	3	5665414.799	6543554093	0	0	0
20100504101244	1155	6	0501	3	76483187.03	88338081022	1	265014243066	88338081022
20100504101244	1155	10	0701	3	944235.7998	1090592349	0	0	0
20100504101368	690	3	1102	0	1060949.657	732055263.6	0	0	0
20100504101368	690	11	1805	2	3395027.191	2342568762	0	0	0
20100504101368	690	12	0501	0	21006734.4	14494646738	1	0	14494646738
20100504101440	955	10	1805	1	390005.9575	372455689.4	0	0	0
20100504101440	955	11	0501	1	15990251.7	15270690378	1	15270690378	15270690378
20100504101440	955	16	0501	1	18720293.41	17877880204	1	17877880204	17877880204
Total								298162813648	144088332253
Average level of pain for work activities only									2.07