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PROMOTION AND DEVELOPMENT OF TIME-USE SURVEY

What type of gender analyses can be done with data from the American Time Use Survey? *

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I. INTRODUCTION

1. The American Time Use Survey (ATUS) is the first federally administered, continuous survey on time use in the United States. The goal of the ATUS is to measure how people divide their time among life's activities. In addition to information about time use, the ATUS includes a wealth of demographic, household, labor force, and other information about each respondent. ATUS data can be used to produce nationally-representative estimates of time use for the civilian noninstitutionalized U.S. population age 15 and over as well as for various subgroups. The survey is sponsored by the Bureau of Labor Statistics and is conducted by the U.S. Census Bureau.

* This paper has been prepared at the invitation of the secretariat.

2. The ATUS provides a rich data set for gender-related analyses. Data collection began in January 2003 and the first annual data set was released in September 2004. Although the survey is relatively new, several researchers have already used the ATUS data to explore gender-related themes. This paper provides an overview of the ATUS and potential applications for the data in analyzing gender-related topics. The first section provides information about the survey design and data; the second section discusses various techniques for analyzing ATUS data; and the final section provides an overview of gender-related topics that can be addressed using ATUS data, as well as some analyses currently being undertaken.

II. ATUS SURVEY DESIGN AND DATA

3. In the ATUS, individuals are randomly selected from a subset of households that have completed their participation in the Current Population Survey (CPS), the monthly labor force survey in the United States. The sample is drawn monthly and interviews are conducted nearly every day of the year. Specific subpopulations—such as blacks, Hispanic, and households with children—are oversampled to ensure they are adequately represented in the data. After an individual is selected to participate in the ATUS, he or she is assigned a specific day of the week about which to be interviewed; to ensure reliable estimates for weekend days and weekdays, the sample is split between weekend days and weekdays.

4. Census Bureau interviewers use Computer Assisted Telephone Interviewing (CATI) to conduct a one-time interview with respondents about how they spent their time on the previous day, their “diary day.” Interviewers use conversational interviewing techniques to collect information about each activity respondents did over the 24-hour period from 4 a.m. on the diary day to 4 a.m. on the interview day. Respondents are asked to identify only their main or “primary” activities. For most activities, respondents are asked where they were and whom they were with.¹ Specifically, they are asked to identify their location (when not travelling) or their mode of transport (when travelling), and who was in the room with them (when at home) or who accompanied them (when away from home). After collecting the diary information, interviewers ask a series of questions to obtain additional information on work-related activities, childcare², volunteering, and trips away from home for two or more nights in a row.

5. During the ATUS interview, interviewers also update selected information that previously had been collected in the CPS. They ask respondents about their labor force status as well as that of their spouses or unmarried partners. Interviewers also update information about respondents’ household composition, including respondents’ relationships to other household members and selected demographic information about all household members.

6. Following the interview, each of the respondents’ verbatim activity reports is coded into one of more than 400 unique activity codes, each of which falls under one of 17 major-tier activity categories. These codes are later re-combined into meaningful categories for analysis and publication. However, the activity coding classification system was designed to enable data users to create their own activity combinations to suit their analytical needs. Shelley (2005) describes the development of the ATUS activity coding system.

7. Data collected during the ATUS interview, as well as from the final CPS interview, are released annually. So far, three ATUS data sets have been released covering the period January

2003 to December 2005. In total, these files contain information provided from over 47,000 interviews. These data sets can be analyzed separately or combined to support more detailed analyses of smaller subpopulations. With detailed information about respondents' demographic, household, and labor force characteristics, as well as their time use on weekdays and weekend days, the ATUS data sets are flexible and can be used to explore gender-related and other topics.

8. In addition to annual releases of the core ATUS interview data, the Bureau of Labor Statistics (BLS) plans to release files containing data collected in modules (a series of questions designed to obtain more detailed information about a time-use related topic) that are periodically added to the core survey for a limited length of time. The Economic Research Service of the U.S. Department of Agriculture currently is sponsoring a Food and Eating module. This module collects data on eating and drinking as a secondary activity, grocery shopping and food preparation patterns, food stamp eligibility, school meal programs, and height and weight.

III. ANALYSIS TECHNIQUES

9. ATUS data are used to produce estimates such as the number of hours women spend providing primary childcare and the share of the population doing housework on an average weekday or sleeping at a particular hour. This section highlights some of the various techniques for analyzing the ATUS data.

10. **Population.** Estimates for a population include responses from all individuals in the selected group, whether or not they did a particular activity on their diary day. These time-use estimates reflect how many population members engaged in an activity and the amount of time they spent doing it. The most basic and frequent use of time-use data is to generate estimates of the average time spent doing selected activities by population and labor force groups. ATUS news releases, for example, include information on time-use patterns by sex, age, race, ethnicity, educational attainment, labor force status, class of worker, and occupation, among others (Bureau of Labor Statistics, 2005). Gender-related population analyses include comparisons of time use of mothers and fathers, working men and women, or single-parent households and dual-parent households.

11. **Participants.** Estimates for participants include responses only from individuals who engaged in a particular activity on their diary day, and include the average time spent doing the activity—such as the average time individuals who provided childcare on their diary day spent caring for children. One also can calculate how participants in a particular activity spent the remainder of the day, such as how individuals who worked on their diary day spent their nonwork time. ATUS analyses for participants are limited as they include only individuals who report the activity on their diary day, rather than a broader group that would include those who do the activity with less-than-daily frequency. For example, individuals who report volunteering on their diary day are only a subset of all individuals who volunteer.

12. **Time of day.** Time-of-day analyses examine time use at a point in time or during a specific interval of the day. For example, one can analyze the times at which men and women prepare meals, do housework, or provide childcare. One also can identify individuals who do shift work by analyzing when individuals report working (Polivka, 2005). In the United States,

women are more likely than men to work part time. A time-of-day analysis can provide information about when women who are employed part time usually work.

13. Where and with whom. ATUS data can be used to calculate time spent at various locations (such as at home, a workplace, and at school) or using different modes of transport (such as driving a car, truck, or motorcycle; taking a boat or ferry; and riding a bus). This information is particularly useful for analyzing travel modes, patterns, and times, and for evaluating the prevalence of work at home. By using the “who” data, analyses of the time spent alone or with others—such as a spouse, children, or friends—are possible. For example, at the ATUS Early Results Conference in December 2005, Kristin Mammen used the ATUS “who” information in conjunction with childcare activity codes to analyze total time spent with children in “Fathers’ Time Investment in Children: Do Sons Get More?”

14. International comparisons. International comparisons can be used to examine differences in time-use patterns between countries. For example, one can compare nonmaterial measures of well-being (such as hours of leisure time) for American men and women and men and women from other countries (Joyce and Stewart, 1999). The Multinational Time Use Study (MTUS) maintains a data base of international time use data that have been harmonized to enable comparisons between countries. The 2003 ATUS data set is included in the MTUS database and plans are underway to add subsequent ATUS data sets to the MTUS.³

15. Time trends. Trend analyses can be done to study how time allocation changes over time. Because only three years of ATUS data are available, developing trend analyses solely using ATUS data is of limited value at this time. However, researchers currently are working on a project to harmonize ATUS data files with those from historic U.S. time-use studies done by the University of Michigan and the University of Maryland. When complete, the data will be available in an American Heritage Time Use Study (AHTUS) database and will include one time-use data set per decade from the 1960s to the present decade.⁴

IV. USE OF ATUS TO ADDRESS GENDER-RELATED SOCIOLOGICAL AND ECONOMIC TOPICS

16. Using the techniques described above, ATUS data can be used to explore various gender-related sociological and economic topics. Researchers can examine how men and women, mothers and fathers, and other groups allocate their time between various activities, and examine participation rates to determine which groups are more likely to do particular activities. Although ATUS time diaries are collected for only one household member, it is still possible for researchers to examine intra-household allocation of time. For example, one may compare the activities of all employed husbands with all non-employed wives to examine the division of labor in married-couple households (Schwartz, Herz, and Frazis, 2002). Bianchi, et al., used historical U.S. time-use studies to examine trends in the time men and women spend doing housework (2000). Friedberg and Webb used ATUS data to study household bargaining and leisure time (2005) and Mathiowetz and Oliner used ATUS data in their analysis of the gender gap in adult care giving (2005).

17. ATUS data can be used as an input to calculations of the value of nonmarket work, or production that is not done for pay. Although the ATUS has not identified a standard definition

of nonmarket work, such activities typically include housework and household maintenance, food preparation, and child and adult care that individuals do for themselves or their households, but for which they could hire others to do; it also typically includes volunteering. Nonmarket work has a gender dimension in that many nonmarket work activities are home-based and traditionally have been done by women. One criticism of the U.S. National Income and Product Accounts (NIPA) is that while nonmarket production is an important part of production processes, it is not accounted for in the NIPA because money is not exchanged. Accounting for nonmarket production in the national accounts, many argue, could improve analysts' understanding of U.S. production—including trends over time—and allow for more accurate comparisons between production levels in the United States and other countries (Abraham and Mackie, 2004; Joyce and Stewart, 1999). Researchers currently are analyzing ATUS data to determine whether they can be used as one of several inputs to alternative measures of aggregate output, income, and productivity for the United States. Pho and Payson have used ATUS in their research on the contribution of volunteer labor to non-profit output (2005), and Landefeld, et al., has evaluated the feasibility of incorporating ATUS data into a satellite input-output model household production account at the Bureau of Economic Analysis (2005).

18. While individuals are not tracked over time in the ATUS, researchers can compare time-use patterns of different groups to understand the impact of decisions or events. For example, in her analysis of parents' time investments in their children, Bianchi (2000) compared work times of single and married women, with and without young children. One also can compare how mothers and fathers employed full time, part time, or not employed balance the time demands of work and children. (See Krantz-Kent, 2005.)

19. Single-parent-headed households and older Americans are two population groups with a disproportionately high number of women. Researchers can use ATUS data to examine issues related to their well-being and, for single mothers, to that of their children. For example, one can examine whether single mothers spend more or less time doing leisure activities or sleeping than mothers in dual-parent households. Researchers also can focus on older women's time spent alone and with others, in addition to time spent travelling from place to place, to evaluate their degree of social contact.

20. After several years of ATUS data have been released, or by using data in the AHTUS database, researchers can analyze changes in men's and women's time allocation in the context of broad social trends and developments. For example, Bianchi (2000) examined maternal employment and time investments in children in the context of women's widespread movement into the workforce in the last decades of the twentieth century. It is well-known that American women are marrying and having children later in life today than they were a generation ago; researchers can examine the implications of these trends on young women's time use. If fewer of today's young women are spending time raising children than in years past, for example, then one might ask how they are instead spending their time.

V. CONCLUSIONS

21. The ATUS and time-use data in general are rich resources for studying a range of gender-related topics: family patterns and the division of labor within a household; activities traditionally considered women's work, including time spent doing nonmarket productive

activities; the impact of decisions or events on men's and women's time use; time use of single parents, older Americans, or other groups that have a disproportionate share of either men or women; long-run gender-related trends and their implications for time use; and other topics. The ATUS, in particular, offers improved opportunities for doing groundbreaking gender-related research because of its large sample size; its wealth of demographic, household, and labor force variables; its continuous operations, and its flexible activity classification system.

22. For more information about the American Time Use Survey, consult the Bureau of Labor Statistics ATUS homepage at: <http://www.bls.gov/tus/>.

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ENDNOTES

¹ Respondents are not asked where they were or whom they were with when they report these activities: sleeping, grooming, private activities, and when they did not remember or refused to answer. In addition to these activities, respondents are not asked who they were with while working or attending high school.

² Respondents are asked to identify times when they had a child under age 13 "in their care"; this information is used to calculate estimates of time spent providing "secondary childcare."

³ The MTUS database is available on the Internet at: <http://iserwww.essex.ac.uk/mtus/>. It is in the process of being moved to a new website: <http://www.timeuse.org/>.

⁴ The AHTUS data files will be available on the Internet at: <http://www.timeuse.org/>. In addition to ATUS data, the AHTUS will include historic data from these years: 1965-66, 1975-76, 1985, and 1992-94.
