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In-depth review on time-use surveys

Note by the German Federal Statistical Office

Summary

The Bureau of the Conference of European Statisticians selected at its October 2009 meeting the topic of time-use surveys in different countries for an in-depth review by the Bureau in 2010 (ECE/CES/2010/46). The purpose of the review is to provide an overview of international statistical work in the area, identify challenges and propose a way forward.

Furthermore, the Bureau decided to discuss the topic of time-use surveys at the Conference's 2010 June plenary session to get input from the members of the Conference to the review. The note to provide basis for the discussion is prepared by the German Federal Statistical Office with inputs from Finland and United States. Following the discussion at the plenary session of the Conference, the topic will be reviewed in-depth by the Bureau in November 2010.

Contents

I. Introduction

1.   The availability of time use data is increasing and numerous countries have conducted time use surveys (TUS) in the last decades. Mainly in the developed countries the TUS by now form part of the fundamental statistics on the working and living conditions of the members of society. The history of collecting information about time use goes back into the late 19th century. The conduct of large scale TUS started at the beginning of 1900 in different countries like England, France, the United States, the Soviet Union and even Japan. Of major interest was e.g. the measurement of the time use of factory workers.

2.   A major development, especially for the international comparability of TUS, was the research work of Alexander Szalai, who coordinated one of the first multinational studies on time use in the 1960s. The project was founded by the UNESCO, and TUS were conducted in 12 countries. This project set out the scheme for data collection, which even today is still used in almost every TUS. Nevertheless, the international comparability of national TUS is still limited due to different sample designs, coding and recording periods, among other things. To minimize this problem, efforts have been made to achieve a certain harmonisation. In particular, Eurostat and the UN Statistical Commission published recommendations for coherent TUS, which will be presented later in the report.

3.   The main purpose of the in-depth review on TUS is to improve the coordination of statistical activities in the UNECE region and to identify new challenges. The report will first present various purposes of TUS. Thereafter, the three concepts of TUS in Germany, Finland and the United States as well as the lessons learned by the countries will be described and compared at the end. Thirdly, the in-depth review will examine the activities relating to TUS at the European and international level. The chapter focuses on the efforts of Eurostat for coherent TUS in Europe and the guidelines for "Harmonised European Time Use Surveys" (HETUS), the initiatives of the UN, and the international data archives. Conclusions will be drawn from the experience gained at national and international level and possible areas of follow-up work for the UN will be identified in the last chapter.

II. The purpose of Time Use Surveys

4.   What distinguishes TUS from other surveys is the measurement of time. The single focus of TUS is to study the frequency and the duration of human activities. Additional variables of interest are the ones that influence the time use of households and household members. Time use surveys provide a detailed overview of the social behaviour of the members of a society and, depending on the sample design of TUS, conclusions can be drawn on the correlation of group membership with time use. But conducting a TUS is more than aggregating data on individual and group time use. The data can be used to answer different questions of social and economic relevance.

A. Describe living conditions

5.   First of all, the results of TUS conducted over several years can reveal and describe the living conditions of a society and identify social changes in the society. The amount of time used for other activities than work and housework is often used as an index to measure living standards.

B. Social and political interest

6.   The results of TUS can also be of social and political interest. They give information about the willingness of individuals to engage in political and

community activities and volunteer work. Furthermore, the data provide information about the demand of citizens for new capacities of the public service or traffic systems. But social policy issues can be backed up by the data as well. The amount of time spent on, for example, childcare, the care of elderly people or continuing education and detailed information on the situation of gender equality in a society are of high relevance in the decision-making process and social planning.

C.   Verification and interpretation of data

7.   Time use data can also be used for the verification and interpretation of data available from other surveys. Contradictory results of different surveys can be explained or hypotheses drawn from data can be supported or refuted. Differing results, for example, on working hours or on time used for commuting can be explained and verified. For example, in the United States, TUS data on work hours were compared to hours-worked data from the Current Population Survey (CPS), which is main source of information about the U.S. labour force.[1] The data on time use are also helpful in interpreting price index data. It has been argued that the low inflation rate is due to the fact that people are willing to wait longer for services or look for bargains and that therefore people substitute time for money.

D.   Estimate non-market work

8.   Furthermore, the data of TUS make an important contribution to valuing non-market work. A long-time criticism of the System of National Accounts (SNA) is the concentration on productive activities taking place in the market economy and the neglect of nonmarket work. Accordingly, the SNA excludes most of the activities in the household which affect the wellbeing of the household members. To take these achievements into consideration, different countries have started to value these activities through a Household Satellite Account. In Finland, the time use data were used in the Finnish Household Satellite Account of 2005 to calculate the input of labour. Household Satellite Accounts could be useful support for the conventional accounts and provide important information to better understand the economy and the source of economic growth. For example, the increased participation of women in the labour market has resulted in a higher demand for market products and services which were previously produced or offered by households/families. The increase of market work has caused a rise in GNP and income and distorted the results and trends.

E.   Assess quality of life

9.   Time use surveys can be used for an exhaustive assessment of the quality of life and its development. So far, quantifiable measures like real income have been used by analysts to assess the quality of life of individuals. But this approach proceeds from the assumption that a higher salary means a better quality of life although this depends on individual preferences. High salary jobs often imply long working hours and less leisure time. The measurement of the quality of life and wellbeing is an important issue in the current statistical discussion. This topic was raised in particular when the Stiglitz-Sen-Commission presented its recommendations on how to measure economic performance and social progress.

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[1]   See the following paper: http://www.bls.gov/mlr/1999/08/art1full.pdf

III.   Time Use Survey

10.   In the following chapter, the concepts and implementation of the TUS in Germany, Finland and the United States will be presented and at the end the results will be discussed.

11.   The following table helps to get a better overview and a better understanding of the similarities and differences of TUS in the countries mentioned.

	Germany	Finland	United States
Sample design	- last TUS conducted in 2001/2002 - 5,400 households - overrepresentation of minority groups of the society - all the population over 10 years of age	- last TUS conducted in 2009/2010 - 4,500 households and their members over 9 years of age	- since 2004: 2,200 cases per month - continuous survey on time use with a monthly sample and interviews throughout the year - randomly selected individuals from households that have completed their final interviews for the Current Population Survey (The CPS is United State's labour force survey.) - one member per household - the civilian non-institutional population over 14 years of age
Time allocation	- time use recorded on three days: two weekdays, one day at the weekend - all the members of the household record their time use on the same days (HETUS) - all seasons of the year are covered throughout the year	- follows the HETUS recommendations: one sample day is a weekday, one sample day at the weekend. - all the members of the household record their time use on the same days (HETUS) - all seasons of the year are covered throughout the year	- one interview about the previous day's activities; information about who was with the respondent and the respondent's location are collected for most activities
Collection method	- collection of data through time use diaries - respondents report their time use continuously and in their own words - reporting of time use in 10 minute slots - recording of primary and secondary	- collection of data through time use diaries - respondents report their time use continuously and in their own words - reporting of time use in 10 minute slots	- phone calls using computer-assisted-telephone-interviewing technology -collection of data through time use diaries (via phone) - respondents review their time use - except for childcare, secondary

	activities - details on the place of and on company during the activities are asked for - additional household and individual questionnaires with questions on frequently performed activities, household durables and demographic features	- recording of primary and secondary activities - details on company during the activities are asked for - additional household and individual questionnaires through computer-assisted interviews using the Blaise software; - to save costs half of the interviews are face-to-face (CAPI) and half of the interviews are by telephone (CATI)	activities are not collected - information on household composition, demographics, and labour force status are also collected in the survey - government agencies can sponsor a 5-minute module of additional questions that are asked at the end of the survey
Coding of the activities	- uses an individual coding system slightly different from HETUS - uses a three-tier, three-digit coding system with some differences from HETUS at the third level of the coding system - different categories and different assignment of activities to categories than in HETUS - classification is partly rougher and partly even more detailed and cannot be directly compared to HETUS	- coding list is based on the HETUS classification, but is slightly more detailed and includes also own national codes - coding list aligned to HETUS - coded into 146 categories from which a more detailed tabulation classification of 130 is formed	- modified Australian classification system - three-tier, six-digit coding system

A.   Germany

12.   The Federal Statistical Office of Germany conducted its last TUS in 2001/2002. In this second survey, highest priority was given to the comparability of the results with the data of the first German TUS in 1991/1992. But at the same time, changes in the sample design and collection method were made to follow the recommendations of Eurostat for harmonised European time use surveys. The data were collected throughout the year to avoid seasonal variations and to catch the influence of seasonal and climatic conditions on time use. The total sample size was therefore evenly divided across the whole year.

1.   Concept

13.   In Germany, the data on time use were collected by using a diary in which the participants recorded their activities in their own words for three days – two weekdays and one Saturday or Sunday. In a diary, data can be easily collected over a number of days and of each member of the household. Furthermore, the respondents can record primary and secondary activities. The description of the activities in the participants' own words guarantees a huge variety of activities and facilitates the right classification of the activities during the coding. As the respondents were only asked to record the beginning and the end of an activity, it was easier to record the duration as well as the frequency of the activities and the daytime of the activity.

14.   The German TUS included 5 400 households and 12 600 persons. All members of a household over the age of ten were asked to record the course of their day. The duration of the activities was indicated on a time scale showing ten minute intervals. Besides the primary activity, the respondents were asked to enter any secondary activity as well as the place of the activity and who was with them during the activity. Background information on the structure and environment of the household and the personal situation of the household members was collected in two questionnaires. The household questionnaire asked about the household composition, housing situation and infrastructure of the housing environment. The personal questionnaire with questions about the individual situation, the labour force participation, on possible community and voluntary work had to be completed by each member of the household.

15.   The activities described by the respondents were classified by means of an activity list, which was based on a list of more than 230 activities.

16.   In general, there are three different coding schemes, which share similarities as they all evolved from the classification first developed by Alexander Szalai for the Multinational Time Use Project of the 1960s. All subsequent activity codes are typically arranged into mutually exclusive behaviour groups that cover all aspects of human activity. The main coding schemes are: *Eurostat classification system*, *Australian classification system* and the *United Nations international trial classification system*:

      a)   The *Eurostat classification system* is described in the guidelines for Harmonised European Time Use Surveys (HETUS) and offers international comparability. Nevertheless, it is possible for countries to depart from the suggestions for HETUS and to adjust the coding system to national particularities. The HETUS coding system is a three-digit code which allows a member state to add further categories to describe national conditions;

      b)   The overall structure of the *Australian classification system* is very similar to Eurostat's, but the first-tiered categories relate to a four-fold typology developed by Dagfinn As in the 1970s which is subdivided into "necessary", "committed", "contracted" and "free" activities. The aim of the classification is to adjust the other classifications'

uneven distribution of time within the major categories by redefining some of the primary categories;

c)   The *United Nations international trial classification system* was developed in 1997 to provide an international coding system for analysing and understanding the time use in various societies. The main feature of the UN scheme is its clear economic conceptualisation, and its design is oriented on the special needs of developing countries.

17.   The German classification followed the recommendations of Eurostat. The coding of the recorded activities was achieved through a three-digit, three-level classification, the first level of which consisted of ten superior activities including a category for travel times and unclear time use. The superior activities were complemented by an additional category to code the place and means of transportation. All the reported primary and secondary activities were coded and classified.

18.   In line with the preceding TUS in Germany, the sample design was based on a quota method. The reasons why the design was chosen by the Federal Statistical Office were the advantages it offered for an easier implementation of the sample and that the results of the TUS could be broken down into different household types including those which had only a small share in the population. In general, to achieve this breakdown with acceptable results, an overrepresentation of the characteristics of these specific households would have been required which would have involved considerable efforts if Germany had opted for random sampling. The survey was then conducted across Germany by the Federal Statistical Office in cooperation with the statistical offices of the federal states.

19.   Every survey instrument was tested through a multi-method-pretest and the results were, if necessary, considered in the revision of the instruments. The Blaise software was used for processing the data after the TUS. To guarantee the availability of a first dataset shortly after the survey period, the data of the TUS were coded and processed successively.

20.   Germany intends to implement a new TUS after the Census in 2011. Discussions have already started at the national level about implementing and financing the new TUS.

2.   Lessons learned

21.   Different elements of the TUS in Germany have proven to be successful:

a)   The combined use of diaries and additional household questionnaires instead of personal interviews showed only slight disadvantages. The use of diaries/household questionnaires accompanied by intensive assistance given to the participating households by telephone was a useful and efficient method for the German TUS;

b)   The changes in the sample design and time allocation have revealed some new findings. The inclusion of household members from the age of ten years as recommended by Eurostat (instead of twelve years) showed significant differences in the time use of minors. The inclusion of this age group was therefore important to illustrate the time use of the entire population. Additionally, it was of high importance to include the foreign population in Germany in the survey. For cost reasons, the survey documents could not be translated. As a result, only foreigners with a sufficient knowledge of German were able to participate in the survey. Although the response rate was low and, therefore, the results were not very detailed, interesting and important data were collected;

c)   The introduction of a special column for means of transport for every primary activity in the diary has proven to be successful. In the first TUS in 1991/1992, respondents did not report the time spent on travelling. The modification resulted in a more complete picture of time use in the TUS in 2001/2002;

d)   The continuous data collection throughout the year instead of the four survey waves (October/November, January/February, March/April and June/July) of the 1991/1992 TUS has also proven successful. The changes in the time allocation ensured that the summer and Christmas vacations as well as the other holidays were no longer underrepresented. As the diaries were also kept on these exceptional days, the data collection throughout the entire year produced a more valid representation of time use;

e)   The ten minute intervals for recording time use have shown to be effective. Germany has made the experience that smaller intervals, as used in the TUS in 1991/1992, were too detailed and demanding for the respondents to record their activities. The change in the time intervals had no significant effect on the average duration of activities;

f)   An equally important lesson learned from the German TUS is the influence of the diary design. During the analysis of the data of the 1991/1992 TUS, it was found that an above-average change of activities occurred every 90 minutes. This could be explained through the structure of the diary. In the first TUS, every page of the diary covered 90 minutes of time (e.g. a page started at 7:30 a.m. and ended at 8:55 a.m.). Respondents often rounded the time spent on an activity for easier recording, and consequently the number of activity changes peaked towards the end of a diary page. This led to a redesign of the diaries. In the second TUS, one page of the diary covered four hours of time and it seemed like this design had no influence on the rhythm of the activity change.

B.   Finland

22.   The TUS conducted by the Finnish Statistical Institute is very similar to the German TUS, as shown in the table above. Currently, Statistics Finland is conducting its fourth TUS from April 2009 to May 2010 after those of 1979, 1987-1988 and 1999-2000. Over the years, changes in the TUS can be identified. The most important change implemented in the last survey was the modification of the sample design. Since 1999/2000 Statistics Finland has conducted the TUS at household level while the first two surveys were conducted at the level of the individual person. Thus, Statistics Finland complies with the guidelines of Eurostat.

1.   Concept

23.   Similar to the German TUS, in 2009/2010 the data have been collected through time use diaries accompanied by interviews with the respondents. These interviews have been computer-assisted using Blaise software. Due to the budget restriction half of the interviews have been conducted face-to-face (CAPI) and the other half by telephone (CATI). The respondents were asked to keep a diary for one weekday and one day of the weekend. The primary and secondary activities have to be reported in ten-minute intervals. The TUS includes all the members of a household older than ten years and the whole survey sample covers 4,500 households all over Finland. Statistics Finland uses, in accordance with the HETUS guidelines, a weekly diary to deal with employed household members. Employed persons are asked to report on their work activities in this diary.

24.   The respondents are asked to report about their activities in their own words and to record whether they were alone or in company and with whom, for instance that they were with members of the household or friends during the activity. In contrast to Germany, Statistics Finland does not ask for separate information about the location of the activity or the way the respondent travelled. Information about the place of where activities took place is inferred from other diary information during the coding of the data.

25.   Statistics Finland collects background information about the household through a household interview and about the background of individuals through an individual interview. For additional information the TUS of Finland draws upon data from registers.

26.   The Finnish coding follows Eurostat's recommendations on classification systems but with certain deviations. Altogether, Statistics Finland agreed on 146 categories into which the recorded primary and secondary activities are broken down. From these classifications the most detailed tabulation of 130 categories is formed. For data entry, the Blaise software is used, and to minimize the amount of time needed, data coding and the entry of the data into a file at Statistics Finland are combined. The coders were trained for a week and at the beginning the coding process was checked by the project researchers. To ensure that coding is performed along the same lines, regular meetings of the coders have been organised by Statistics Finland in the ongoing TUS.

27.   For sufficient financial means, Statistics Finland relies on external funding. Funds are received from the Social Security Institution, the National Consumer Research Centre, the Central Union for Child Welfare in Finland, and different ministries. Because of the cooperation of different institutions, the needs of these partners were taken into account when the design of the questionnaires was discussed.

2.   Lessons learned

28.   Statistics Finland has drawn the following lessons:

        a)   The transition from a sample of individual persons to a sample of households in the last two TUS raised the non-response rate but enabled a new way of studying the internal division of work in families and households. It also made it possible to calculate the added up time use of household members for Household Satellite Account;

        b)   The interviews by telephone increased the number of interviews conducted but produced a higher diary non-response rate than face-to-face interviews. The personal contact enables thorough guidance and strengthens the respondents' commitment to returning the diary to the interviewer;

        c)   The sample of the time use survey is divided evenly over a period of 12 months. To retain the interviewers' skills in conducting the survey, only half of the group (80 persons) participates in conducting the survey. In addition to the initial training, events to sustain their motivation are organised half-way through the fieldwork.

C.   United States

29.   Since 2003, the American Time Use Survey (ATUS) has been sponsored by the Bureau of Labor Statistics (BLS) and conducted by the U.S. Census Bureau on an ongoing basis, with data collected nearly everyday of the year. ATUS data for over 85,000 individuals interviewed in 2003 to 2008 currently are available. The data are released annually.

1.   Concept

30.   In contrast to Germany and Finland, the BLS collects data from only one individual per household.

31.   Respondents are selected from households that completed the last interview of the U.S. labour force survey—the Current Population Survey (CPS). Not only are these individuals familiar with the construction of interviews, but this enables an advanced selection of respondents based on their demographic and other characteristics. Similar to the German sample, the ATUS sample was designed to produce reliable estimates for

minorities and families with/without children.[2] The ATUS sample is also stratified by the day of the week: half of the sample is asked about their time use on a weekday and half of our sample is asked about their time use on a weekend day. This is done to facilitate analyses of time use on weekdays and weekend days. The sample size of each subgroup differs in order to produce the desired strata.

32. Also in contrast to the two European examples, the BLS opted for a less costly way of data collection. As in Canada, the surveys are conducted using Computer Assisted Telephone Interviewing (CATI) technology instead of using a paper diary approach. This decision has had several implications:

a) The method of using telephone interviews lowers the cost of the TUS compared to the use of in-person interviews and paper diaries. Another implication of this method is its centralized collection of data. This implies an easier monitoring of the interviewers and an improved quality of the data collection process;

b) On the other hand, with a very high certainty telephone interviews preclude the collection of data from all members of the household. Although questions to obtain background information can be asked on the telephone, it is difficult to collect reliable data on secondary activities.

33. Accordingly, secondary activities except childcare are not included in the ATUS. Other secondary activity information has been collected on a temporary basis. The design of the ATUS allows government agencies to sponsor a five-minute module of questions that are asked after the regular ATUS questions have been completed. In 2006 to 2008, information about secondary eating and secondary drinking were collected as a part of a module on Eating and Health.

34. The ATUS includes questions that collect information about the respondent's household composition, labour force status and use of time. If the respondent is married, information about the labour force status of the respondent's spouse is also collected. The ATUS uses a three-tiered, six-digit coding system, with 17 major activity categories. Each reported activity is assigned a 6-digit activity code. ATUS data can be linked to data on a range of topics that were collected as a part of the Current Population Survey.

2. Lessons learned

35. Following lessons could be mentioned:

a) The ATUS has benefited considerably from the publication of the data files and the documentation. As a result, the data have become more reliable and the documentation clearer as mistakes have been identified and corrected and as other changes have been made based on feedback from researchers;

b) The continuous collection of time use data also has numerous benefits. The staffs of the BLS and U.S. Census bureau are very familiar with the TUS, its production process and the handling of the data. In contrast to Germany and Finland, data from multiple years can be easily combined to conduct in-depth analyses. Any issues that arise – whether they refer to data problems, activity coding, or something else – can be quickly addressed. Additionally, the BLS can more easily respond to the needs of data users and can provide them with new products within a short time. Further, interviewer training is well-established and the BLS and U.S. Census Bureau periodically provide both initial and refresher training to ATUS interviewers and coders.

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[2] Following stratification where chosen: Race and Hispanic origin, presence and age of children, number of adults for households without children.

IV. Summary of the comparison of Time Use Surveys

36. Conducting TUS has been very similar in Germany and Finland. Their sample designs, methods of data collection and classifications comply with the recommendations of Eurostat. Certainly, there are differences, for example, as regards the detailed coding to include national characteristics.

37. The comparison between the TUS conducted in Europe and the United States reveals substantial differences:

a) The BLS has a different sample design and method of data collection;

b) The American coding system which is mostly based on the Australian classification system shows some differences to the European system;

c) The fact that the European TUS presented are similar and there are differences to the American TUS indicates possible challenges for an international initiative on TUS. The different concepts have consequences for the data gained and their comparability as well as their usefulness for the presented purposes of TUS;

d) It will be difficult to adopt stricter guidelines on TUS as it is in the interest of every country that they be in line with national concepts to guarantee the comparability with former data.

V. Overview of international initiatives and activities relating to Time Use Surveys

38. For an increasing number of countries all over the world data on time use exist and by 2002 such data were available for 62 developed and developing countries. As the comparability of the data of different countries suffered due to heterogeneous concepts, methodology and aggregation, various initiatives were launched to coordinate the methods to conduct TUS.

A. Eurostat

39. As in other parts of the world, a huge variety of methodologies were used by the different European member states to conduct TUS. This meant that most of the European studies were not compatible. To solve this problem Eurostat launched a number of pilot studies in the years 1996/97 which resulted in the publication entitled "Harmonized European Time Use Surveys" (HETUS). In this guideline Eurostat gave recommendations on the sample design, diary days, survey forms, activity coding lists, interviewers, the data coding, and estimators. Eurostat suggested that the member states use a self-administrated diary to record data in ten minutes intervals as is done by Germany and Finland. Based on experiences and developments of the last years, modifications of the European guidelines were requested. In 2008, revised guidelines were published. Around the year 2000 about 20 European countries conducted TUS according to the recommendations of HETUS. To present the results, Statistics Finland and Statistics Sweden developed - with financial support of the European Commission - a web-tool for producing user defined tables on the organisation and activities of everyday life in fifteen European countries (https://www.h2.scb.se/tus/tus/default.htm).

40. Despite this effort, the time use data of the member states are not yet fully comparable as the guidelines of HETUS concentrate on the production of output harmonised data. With a focus on the output, there is room for deviations on the part of the

member states. Interview questions can be compiled nationally and additional time use categories can be addressed. Several member states have deviated from the European standards, mostly to keep the results comparable to earlier TUS.

B. United Nations Statistics Division

41.   The United Nations Statistics Division (UNSD) also developed a *"Guide to Producing Statistics on Time Use: Measuring Paid and Unpaid Work"*. As mentioned above, the recommended methodology guidelines mainly focus on TUS in developing countries. It is especially important for developing countries to conduct TUS as nonmarket production, which takes mainly place in the private households, is of high relevance in these countries.

42.   The main approach of the guide is to advise countries on how to undertake TUS and to harmonise the method for wide national use. The guidelines of the UNSD build on the harmonised approach of Eurostat. As the guidelines are not prescriptive, the guide rather discusses the lessons learned from TUS already conducted and presents the advantages and disadvantages of the different options. The question of measuring secondary activities is raised as well as the range of background variables for which the guide defines a minimum list including age, sex, marital status, household composition, and work situation. The face-to-face recall interviews were decided to be the best method for populations with low literacy.

43.   Besides the guidelines for TUS, the UNSD published the *United Nations International Classification of Activities for Time-Use Statistics*. The UNSD recommends in its guidelines the use of a three-tiered, four-digit system with 15 possible categories on the first level.

44.   To provide access to this information the UNSD launched a website on time use statistics with methods, publications, and meeting documents. The website is updated with experiences of the countries which recently conducted TUS (http://unstats.un.org/unsd/demographic/sconcerns/tuse/).

C. Multinational Time Use Study, Oxford University

45.   The most comprehensive permanent data archive on international time use is the Multinational Time Use Study (MTUS) at Oxford University which was developed in the early 1980s. Professor Jonathan Gershuny, then working at the University of Bath with Sally Jones, observed the potential to harmonise time use datasets collected in the early 1960s into a single dataset with common series of background variables and total time spent per day in 41 activities. The original MTUS allowed the comparison of British time use data with the 1965 Szalai Multinational Time Budget Study and data from Canada and Denmark. The MTUS since then has grown to encompass over 60 datasets from 22 countries, and is now incorporating recent data from the Harmonized European Time Use Surveys and the American TUS (www.timeuse.org).

VI. Issues and challenges

46.   Different issues and challenges have been raised while the various concepts of TUS were developed and implemented on the national and international levels. Several of them will be presented in the following chapter of the report.

A.   Coding

47.   Both, Finland and the United States identified the challenges of future coding. Time use related with computers and modern communication has caused problems in the coding of activities. The question has been raised whether it is more important to measure the time spent on the computer or to capture the activities done at the computer (e-mailing, researching, reading, chatting, etc.). So far, Finland follows the guidelines of Eurostat and adds a binary code to each activity indicating whether the internet or the computer was used when carrying out the activity. Then for example, reading a newspaper online can be classified either as reading of a newspaper or as use of the internet. In the ATUS, computer and Internet use are coded based on the way in which the computer and Internet were being used. Thus, if someone was using the Internet to read a newspaper, the activity is coded as reading. This seems to be working fine, though members of the ATUS staff frequently receive requests from people who want to know how much time is spent on the computer or Internet, and these data are not available.

48.   Further issues of coding were raised by BLS. When BLS was developing the ATUS, it was particularly challenging to determine appropriate methods for coding travel. Capturing travel and the reason for travel is difficult when one considers peoples' travel behaviours; that is, people often have many reasons that can be attributed to a particular travel episode. For example, a morning commute to work may involve a string of activities and thus different reasons for travel, such as dropping children off at day care and purchasing coffee. New guidelines and rules on coding are needed especially in the field and travel, where new coding should determine how to deal with peoples' travel behaviours. The inclusion of people with a different cultural background is of high importance because a different time use is most likely. Moreover, it is important for the BLS to include individuals without any knowledge of the English or Spanish language. The BLS has so far translated the interview instruments, all the advance material and follow-up material into Spanish, but people who do not speak English or Spanish are not captured in the data.

B.   Sample design

49.   The sample designs of all the presented examples of TUS include the population from the age of ten/fifteen years and ask them to report their activities. The BLS has been confronted by worried parents who would not let their children participate in the ATUS. To address this problem, the BLS developed a refusal conversion letter that addresses the concerns of the parents. Additionally, the BLS agreed to offer same-sex interviewers for teens with concerned parents. Another challenge of the BLS, which is due to the method of data collection, is reaching respondents with unknown telephone numbers. The BLS uses a $40 debit card as an incentive for people living in households with unknown telephone numbers. If the respondents call in and complete the interview they receive the pin number for the debit card.

C.   Underreporting

50.   Another problem is the underreporting of sensitive activities as well as socially unaccepted time use.

D.   Response rate

51.   An on-going issue for the BLS and the other statistical offices is dealing with low response rates. In the United States the reluctance to participate results partly from the

survey design. As mentioned above, the selected respondents already participated in the CPS and might not be willing to participate in an additional survey. Another reason for low response rates is the assignment of every respondent to a specific interview day without offering an alternative. Through this strict rule, the BLS wants to avoid a bias towards days which are busier for the respondents. In addition, the BLS does not allowed proxy respondents.

E. Request from researchers

52. Another challenge is how to respond to the requests of researchers that ask to integrate questions about their field of interest. In order to deal with the different requests the ATUS allows for additional questions to be asked at the end of the interview. In the five minutes modules specific areas of interests can be addressed. Another challenge is an improved dissemination of TUS data to users. The BLS realized that the data files were complex and required a certain level of sophistication for the user to handle them. For an easier usage the BLS has started to provide a summary file that repackages some of the data and has published programmes to read the data into three different statistical packages.

F. Periodicity of TUS

53. An important challenge for the future was named by Statistics Finland and concerns the majority of TUS which are not conducted on a monthly basis. Most of the TUS are taken at intervals of around ten years. Regarding possible purposes of TUS one can see that there is a higher demand for a faster provision of data for example for the Household Satellite Account or the measuring of well-being. In reaction to this, Statistics Finland developed a so called "light" diary which is currently being tested on 1,000 persons who participate in the ongoing Finnish TUS. The postal inquiry comprises 35 pre-coded main activities, and asks about other persons having been present during the relevant activity. The aim of the test is to study whether results comparable with those of the "heavy" diary can be produced with the "light" diary as well.

G. Sampling technology

54. A future challenge for the German TUS will be the inclusion of new methods of time use sampling technology, for instance beeper/experience sampling methods. Through their introduction more context sensitive data could be collected, the burden of filling out a traditional diary could be reduced and overall expenses lowered.

H. Background information

55. Additional questions of "where" and "with whom" could be expanded in order to obtain information on expenditure incurred during the activities. This additional question would provide important information about the cost of activities. Furthermore, it is necessary to identify and characterize second and third jobs in the recorded activities.

56. There should be additional questions in the TUS about less frequent activities. Especially Germany should introduce the questions about the work week, as recommended by HETUS, about activities over more than a day and about a typical/normal period. Further, there should be more background questions about the individual and household situation regarding the income and about the living environment like external child care and

living conditions. Supplementary information should be given about the satisfaction and health situation of the household members.

VII. Conclusion

57. In conclusion, it is proposed that as a follow-up to the in-depth review of Time-use survey the Bureau of the Conference of European Statisticians consider the following issues:

a) Whether the existing guidelines and harmonized classifications are sufficient to meet the new challenges like the recommendation of the Stiglitz-Sen-Commission or the calculation of unpaid work for Household Satellite Accounts;

b) With regard to the fact that TUS are usually conducted every ten years, the Finnish pilot project of using a "light version" of a diary for implementing a TUS at more frequent intervals could be recommended to guarantee satisfying data for the different purposes of TUS.

58. In addition, the following issues should be also discussed:

(a) How to deal with low response rates?

(b) How to improve the comparability of results between different countries and within a country?

(c) How to improve the coding? What has to be coded? How to review the coded activities? How to deal with the increasing multiculturalism in the national states? How to include the activities of members of a different culture?

(d) How to train interviewers?

(e) How to include people with low literacy or people who do not know the survey language?

(f) How to include the use of new technologies?

(g) How to raise the funds required for implementing new TUS?

59. Finally, it should be noted that for the implementation of TUS at supranational and international level, some recommendations quite similar to the UN Resolution 2005/13 on 2010 World Population and Housing Census Programme would be helpful.

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