data2x

Invisible No More?

A Methodology and Policy Review of How Time Use Surveys Measure Unpaid Work

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Acknowledgements

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Preface

Measuring reliably and comprehensively the unpaid household and care work traditionally performed by women— feeding the family and taking care of children, the elderly, the sick, and people with disabilities — has risen in prominence as a major challenge for official statistics. Two internationally agreed upon United Nations mandates drive this challenge. The first is part of the Sustainable Development Goals indicator 5.4 that calls for measuring the progress of countries toward gender equality and asks countries to measure and recognize "unpaid care and domestic work." The second mandate grew out of an agreement among international labor statisticians, adopted by the International Labour Organization, to broaden the definition of what is considered work in labor force surveys and systems of national accounts.

Invisible No More? reviews recent efforts using time use (TU) surveys, the preferred instrument for measuring unpaid work, to identify good practices for designing comparable, simple measures of unpaid household and care work and using this data for policymaking. Volume 1 (*A Methodology and Policy Review of How Time Use Surveys Measure Unpaid Work*) reviews the recent experience with time use surveys to derive methodological and policy lessons—examining the link between data and policy and the extent to which these surveys have shaped public policies, including care policies since the 1970s. Volume 2 (*Country Case Studies*) provides evidence for Volume 1, including 18 country case studies that examine the rollout of TU surveys and their influence on policy. The case studies explore four consecutive stages that describe the process of data uptake in each country and its translation into policy.

Each case study addresses the following questions:

1. Identify and Prioritize: Who identified the need to implement a time use survey (a line ministry, a coordinating ministry, the national statistical office) and why (to help address gender or other data gaps, for advocacy and policy use, to comply with legislation, because it follows international best practices)?

2. Collect and Analyze: What survey instruments were used? How and why were the instruments chosen (standalone survey versus module in household or other survey, categorization used, time frame, sampling strategy and sample size)? Who collected the data and for whom? Who paid and how (with budgetary or extra-budgetary, internal or external funding source)? What type of analysis was undertaken and how was the analysis linked to the study objectives? What was the quality of the analysis? Did the analysis result in policy implications?

3. Inform and Influence: How did time use data findings get disseminated and by whom? What role did different actors (civil society, government, data producers) play?

4. Develop Policy & Monitor Progress: Did time use data findings directly or indirectly influence policies, and if not, what were some obstacles or constraints?

We hope that *Invisible No More?* provides useful insights from research and country experiences on the intrinsic and policy value of time use data, on ways to improve data collection to increase the data's usefulness as evidence for policymaking, and on the conditions that facilitate this data-to-policy link.

Acronyms and Abbreviations

BBC: British Broadcasting Company

CAUTAL: Time Use Classification for Latin America and the Caribbean

ECLAC: Economic Commission for Latin America and the Caribbean (United Nations)

ENIGH: National Household Income and Expenditure Survey (Mexico)

ESM: Experience Sampling Method

EUROSTAT: Statistical Office of the European Union

GDP: gross domestic product

GPS/GSM: global positioning system/ global system for mobile communications

HETUS: Harmonized European Time Use Survey

IATUR: International Association of Time Use Research

ICATUS: International Classification of Activities for Time Use Statistics

ICLS: International Conference of Labour Statisticians

ILO: International Labour Organization

INE: National Institute of Statistics (Spain)

LAC: Latin America and the Caribbean

MTUS: Multi-national Time Use Study

NSO: national statistical office

NSSO: National Sample Survey Organization (India)

OECD: Organisation for Economic Co-operation and Development

PRSP: Poverty Reduction Strategy Paper

SCA-ECLAC: Statistical Conference of the Americas-Economic Commission of Latin America and the Caribbean

SCIC: Spanish National Research Council

SDGs: Sustainable Development Goals

SNA: system of national accounts

TU: time use

TUS: time use study/ survey

UNICEF: The United Nations Children's Fund

UNSD: United Nations Statistics Division

USDA: United States Department of Agriculture

WB: World Bank

WGGS: Working Group on Gender Statistics (SCA-ECLAC)

Introduction

Unpaid household and care work traditionally done by women – feeding the family and taking care of children, the elderly, the sick, and people with disabilities – is critical to the functioning and well-being of societies. But policymakers have historically overlooked this kind of work, and it has gone unmeasured in official statistics. For instance, between the years 2000 and 2012, only about 5 percent of nationally representative surveys, conducted either by international organizations or countries themselves, collected information by sex on average hours spent on unpaid domestic work (including both housework and care work) and computed a measure of total work burden (adding both paid and unpaid work).[1]

Change is afoot, however. In 2013, labor statisticians agreed internationally to begin measuring all types of work, paid and unpaid, in labor force surveys, challenging national statistical agencies to develop reliable, comparable and simple measures of unpaid household and care work. The Sustainable Development Goals (2015) also underscore the need to collect sex disaggregated data on this type of work.

The task is not easy. It involves addressing the fact that individuals often do more than one activity at a time, simultaneously performing household and care work with other unpaid or paid work. Activities may overlap and boundaries between activities may be difficult to define. The quality of care is an important but intangible component that is difficult to measure (and value). Indeed, a range of contextual and cultural factors significantly influence the way many of these activities are conducted. Fortunately, rich experience with time use diaries or surveys—the preferred instrument for attempting to quantify unpaid domestic work—can provide useful lessons for the measurement work that lies ahead (Box 1).

This report reviews recent efforts using time use (TU) surveys to identify good practices for the design of comparable, simple measures of unpaid work, with an emphasis on care work, and using this data for policymaking. The report updates an inventory of TU surveys for the 88 countries that have implemented these surveys, highlighting their main features, and takes deep dives with case studies in 18 countries that examine the rollout of TU surveys and their influence on policy. Finally, the report derives methodological and policy lessons—all bearing in mind the data-to-policy link and the extent to which these surveys have influenced public policies, with an emphasis on labor, social and care policies, across different country contexts. The report uses a data-to-policy framework to guide the case studies and the policy analysis. The framework was developed to help assess the extent to which TU data has influenced policy, examine the conditions that facilitate this data-to-policy link, and identify ways to improve the collection of TU data to increase its usefulness as evidence for policymaking.

1 See World Bank Gender Data Navigator Report (http://www.ihsn.org/sites/default/files/resources/Gender_Issues_July-2015.pdf , in particular, p. 26).

Time Use Surveys Overview

History

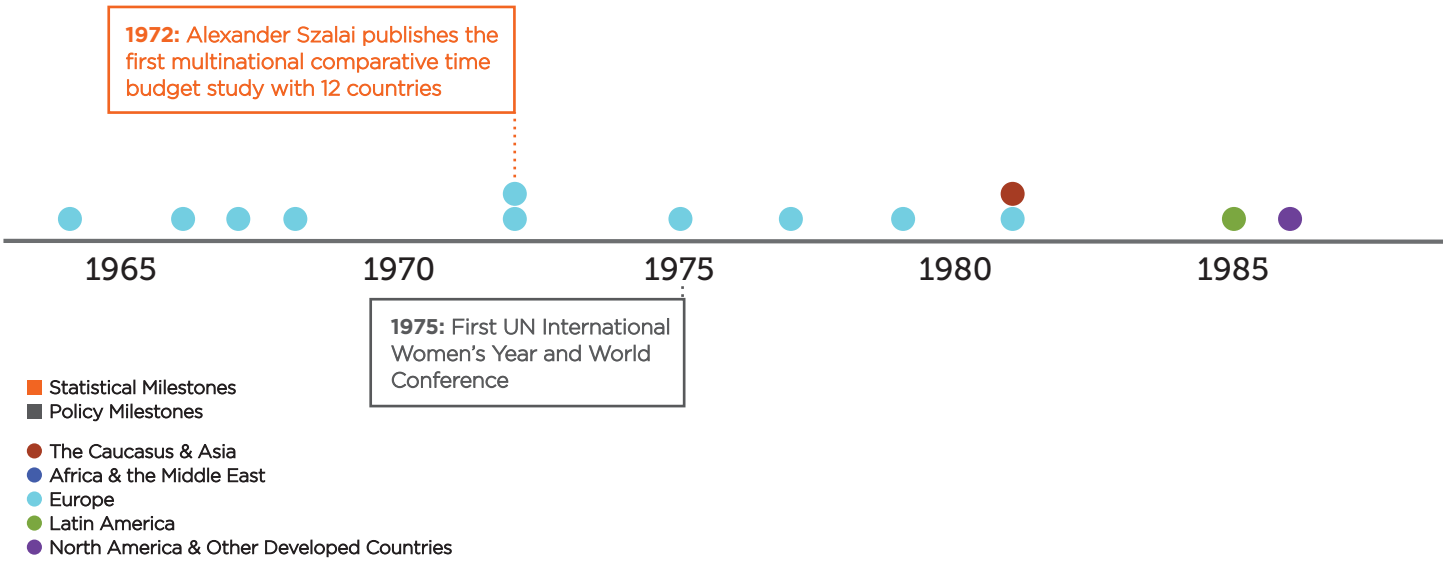
TU data was first used to inform agricultural extension and radio programming. The use of this type of data for documenting gender inequalities and valuing women's unpaid work came more than half a century later. TU studies have a long history. Long before the women's movement in the 1970s first called attention to women's "double burden" of work at home and in the marketplace and the need to measure both forms of work, researchers in Russia first used time diaries to understand the daily life of peasant families in the late 19th century. In the 1920s and 1930s, US and UK researchers collected time diaries to profile the lives of farming and working class families. Agricultural extension agencies, such as the United States Department of Agriculture, and broadcasting companies, including the British Broadcasting Corporation, were some of the earliest practical users of time diary data (Gershuny 2011).

Before the advent of computer technology, analyzing TU data was laborious. Cross-national comparative work took off only in the late 1960s, when computers first became available. The first major cross-national initiative, led by Alexander Szalai, applied a standard time use instrument in 12 countries.[2] In the 1960s, time use information was used for mass media and transportation planning. In the 1970s, the women's movement underscored the importance of TU studies to document gender inequalities and value women's unpaid work, although the actual measurement work did not take off in any significant way until the mid-to-late 1990s.

Starting in the 1990s, TU studies have been used for a number of different purposes, including measuring gender differences in the allocation of time and quantifying the economic value of women's unpaid work (often producing satellite accounts to complement gross domestic project (GDP) measures), assessing quality of life and well-being, and measuring all forms of work, both paid and unpaid, to comply with the new definitions of work and employment (Guerrero n.d.).

UN global conferences and agreements in the 1990s and beyond fostered new momentum for TU surveys. As the milestone dates indicate, activities in support of TU surveys have picked up rapidly in the past couple of decades, spurred by the attention that UN global meetings have focused on women's work (Figure 1).

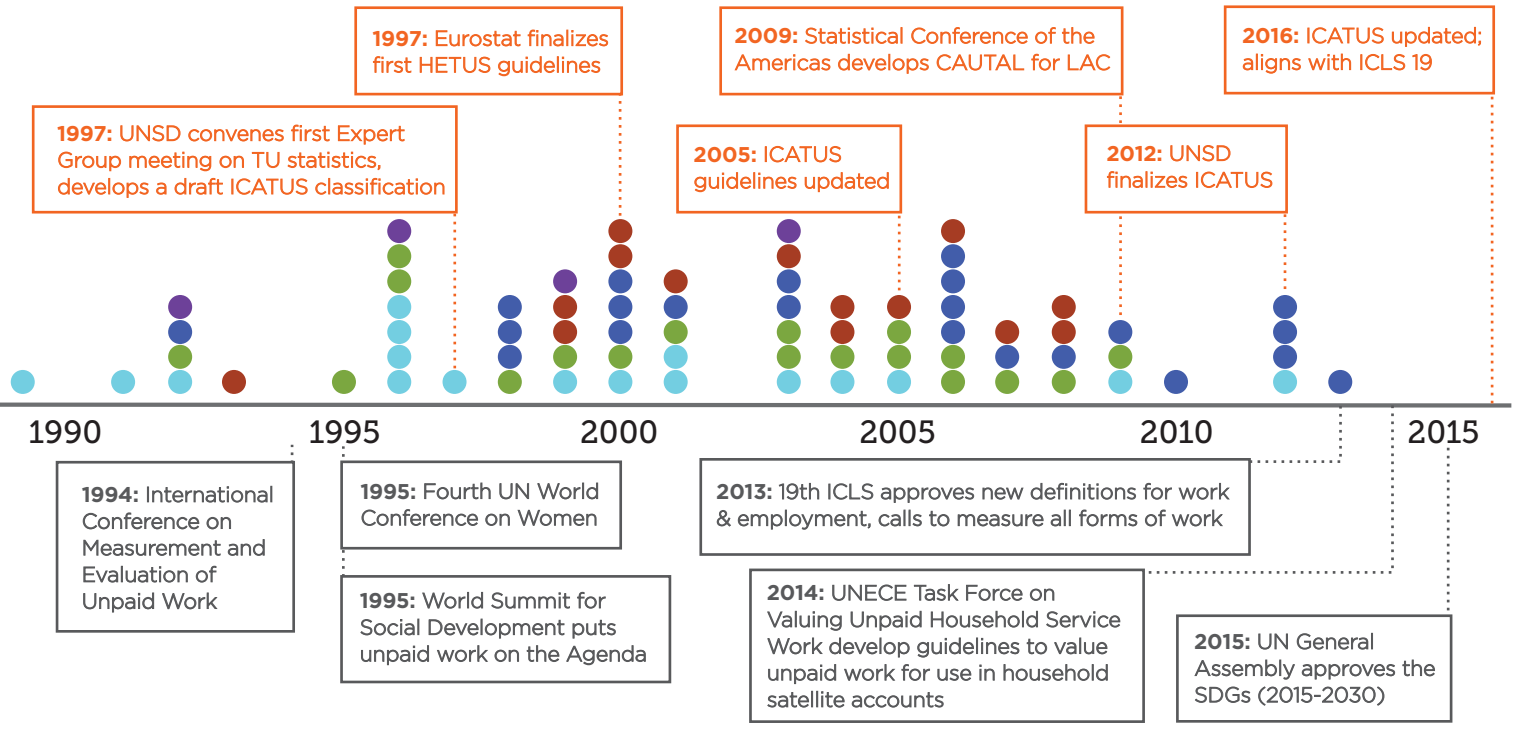
Figure 1. Timeline of time use surveys' first launch by country and region, with milestones (statistical and global), circa 1960–present.
Sources: Charmes (2015), Budlender (2007), Data2X (2018).



The momentum started with the three UN World Conferences on Women held during 1975–1985, culminating in the declaration of the 1995 Beijing Platform for Action at the UN Fourth World Conference on Women, which explicitly called for measuring unpaid work and refining TU survey methodologies. This set in motion the collection of TU surveys by developing countries and the development of an international classification on time use for valuing women's economic and social contributions to society. In 1997, the United Nations prepared the International Classification of Activities for Time-Use Statistics (ICATUS), which provides a framework for time use measurement compatible with the System of National Accounts. Similar regional classifications, such as the Classification for Time-Use Activities for Latin America and the Caribbean (CAUTAL) as well as the Harmonized European Time Use Survey (HETUS) also exist. The first tranche of 15 HETUS studies was undertaken between 1998 and 2003 and the CAUTAL methodology was developed in 2009 and was used by Latin America and the Caribbean (LAC) countries starting in 2010.

The HETUS was the first regional attempt at harmonizing TU surveys, prompted by the experience of European countries, which had undertaken many uncoordinated TU surveys in the 1970s. This piece-meal approach to TU survey data collection produced TU data of uneven quality. The harmonization effort was led by the International Association of Time Use Research (IATUR) and the Statistical Office of the European Union (EUROSTAT). IATUR, established in 1988, facilitated exchanges on collection techniques, methodology and TU research among scholars and statistical agencies. Along with IATUR researchers, EUROSTAT proposed standardizing TU surveys for 15 European countries allowing for the harmonization of TU survey data, greater comparability of outcomes, and the creation of HETUS in the late 1990s.

2 The 12 countries in Szalai (1972) were Belgium, Bulgaria, Czechoslovakia, France, German Democratic Republic, Federal Republic of Germany, Hungary, Peru, Poland, United States, Union of Soviet Socialist Republics, and Yugoslavia.



What are Time Use Statistics?

Time use (TU) surveys collect data on how individuals spend or allocate their time over a specific period—typically 24 hours/day. The data collected and statistics produced provide quantitative summaries highlighting what individuals in the reference population do, the activities they engage in and how much time is spent doing each activity. TU surveys help reveal details of a person's "daily life" that may not be achieved with other types of survey.

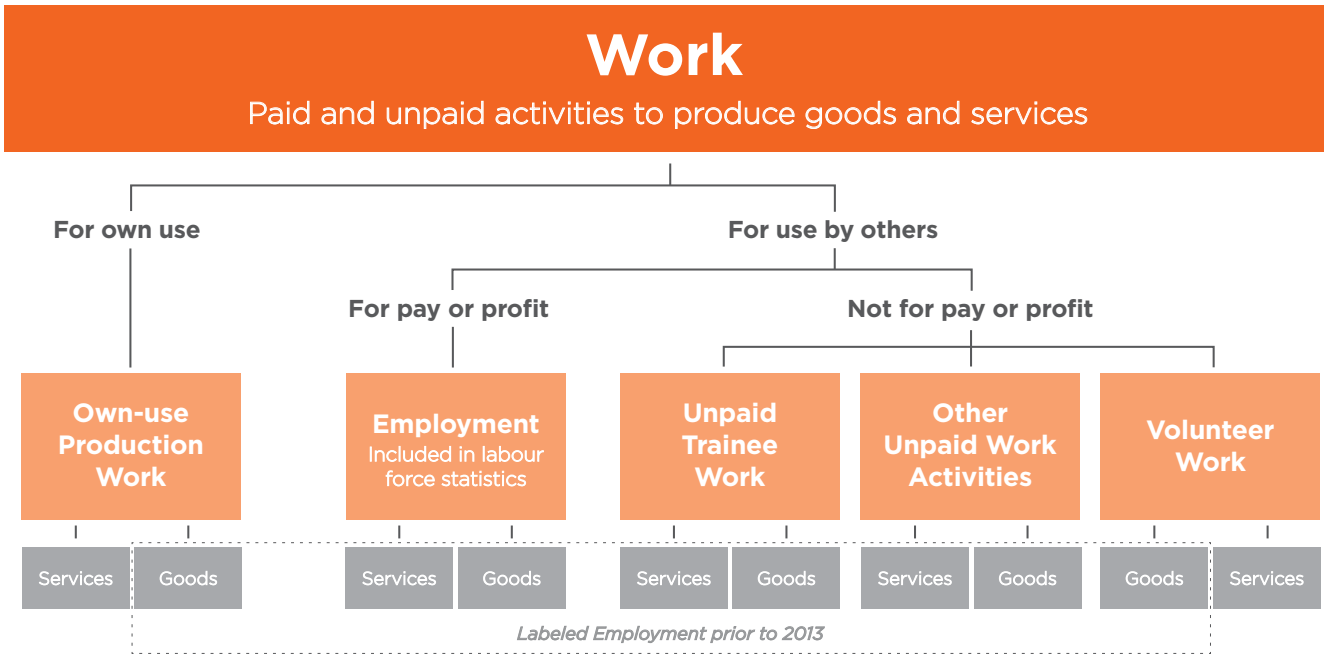
Building on the collective efforts of women's advocacy groups, gender scholars, and TU researchers, several other international organizations and conferences have promoted the collection and use of TU statistics over the past two decades. These efforts culminated in new definitions of work and employment that the 19th International Conference of Labour Statisticians (ICLS 19) agreed on and the ILO adopted in 2013 and in the updated ICATUS classification in 2016. This classification incorporates the new standards and the new ICLS 19 definitions (Figure 2). It also improves the way activities are categorized to better capture the myriad activities in developing countries and make standardization possible.

Aligning the classifications of work under TU and labor force methodologies paves the way for TU statistics' increased importance in the expanded definition of work internationally agreed upon in 2013. Harmonizing work-related activities in ICATUS with ICLS 19 is important because TU statistics can identify some activities in employment that are difficult to capture in labor force surveys, such as "contributing family work" (a category of work where women predominate). Additionally, TU surveys are the principal source of data on forms of work outside the systems of national accounts (SNA) production boundary, such as caring for household members and housework, which the ICLS 19 work definition counts (Figure 2). UNSD's goal is to roll out the new ICATUS 2016 categorization to ensure international comparability and quality of TU data, particularly for measuring and monitoring the progress of countries toward attaining Sustainable Development Goal (SDG) 5.4 that aims at "recognizing and valuing unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate."

Why Does ICLS 19 Matter for Measuring Unpaid Work?

The 19th International Conference of Labour Statisticians (ICLS 19) defines new statistical concepts for work and employment. The new framework conceptualizes work broadly, to capture all types of productive activities, including

Figure 2. ICLS 19 framework for work and employment.



Source: Benes (2014).

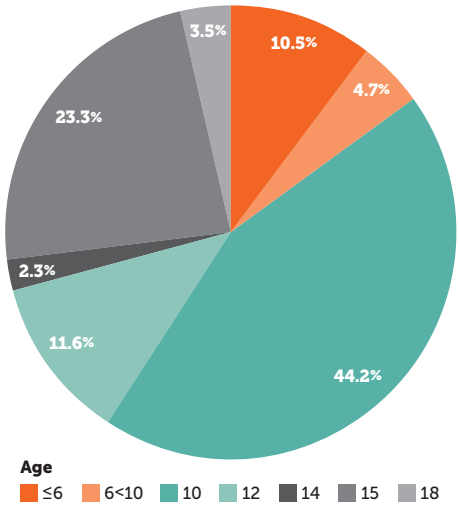
unpaid household services and care work, while it narrows the definition of employment as work that is done for only pay or profit. Different types of work are distinguished by the main intended destination of production (own final use vs. use by others) and type of transaction (for remuneration vs. without remuneration). In this framework, production of services for own use (including unpaid housework and unpaid care work) is recognized as work, although this work remains outside the System of National Accounts (SNA) boundary, but falls inside the "general production boundary." According to ICLS 19 recommendations, work for pay as well as unpaid activities should be surveyed.

Country experiences with time use surveys and regional differences

In recent decades, 257 major TU surveys have been fielded in 88 countries. While most of these surveys have been carried out by government statistical agencies, a few have been conducted by international agencies, national universities, or private sector firms. The TU Survey Inventory (Annex) updates the one by Charmes (2015), using information from the UNSD data portal and from country case studies developed for this report. We have included all major standalone surveys or modules (hosted in other surveys) carried out in the country, independent of origin, and added the recording of simultaneous activities to the original categories in the inventory by Charmes, to round out information on each country's experience.

Of the 88 countries, 27 are in Europe, 20 in Latin America and the Caribbean, 22 in the Middle East and Africa, 14 in the Caucasus and Asia, and 5 in other developed regions, including the US. The Annex table, which covers countries starting in the 1960s, records Denmark as the first country to implement a national TU survey in 1964. While most countries in the different regions interview household members starting with children, ages 10+ or 12+, some countries include much younger children. Italy, for instance, interviewed children as young as 3 years in three of its four TU modules. Figure 3 shows the distribution of TU surveys by starting age.

Figure 3. Minimum age for recording time use (86 countries).



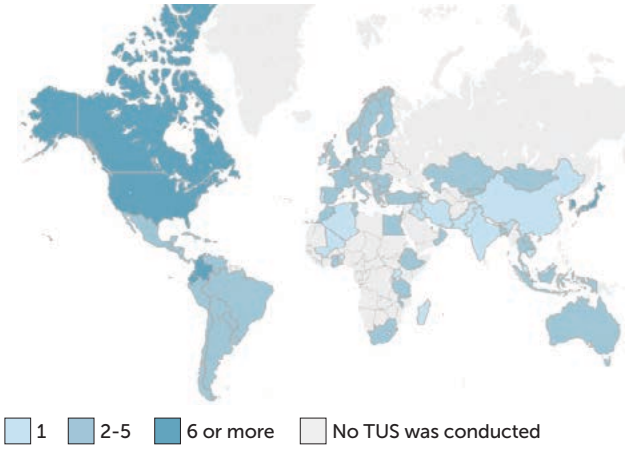
Source: Charmes (2015).

Reference periods used for recording time use have varied within and across regions, from one day, to a weekday or two weekdays plus a weekend day, to a whole week. Full time diaries are usually recorded over 24 hours, but some countries, such as Australia and New Zealand, have conducted 24-hour diaries over two days, not necessarily consecutive ones.[3] Some surveys have recorded secondary or simultaneous activities, although recording of these activities could be significantly improved with better interviewer training.

Admittedly, TU surveys are costly to conduct and resource constraints have prompted some countries in developing regions to be pragmatic, using less expensive approaches, such as using stylized questions for specific tasks or restricting the collection of data to one or two respondents per household. Unlike the systematized data collection of the SNA, the frequency and method of TU data collection vary across countries. While countries in Europe and other developed regions, including Australia and South Korea, have collected them on a regular basis over a few decades, others have collected the data only once or twice (see Figure 4).

3 According to Eurostat, for example, HETUS should cover a full 12-month period, so the data collection period includes 365 days, and each respondent is expected to fill in a time use diary for two days, one weekday (Monday to Friday) and one weekend day (Saturday or Sunday).

Figure 4. Number of time use surveys completed by country as of 2017.



Source: Charmes (2015), UNSD (2018).

European and Latin American countries have led the way in implementing TU studies with strong regional collaboration and support. In Eastern Europe, TU surveys were rolled out in some countries, like Latvia and Poland, as early as the 1970s. European countries began conducting standalone surveys in the late 1990s and early 2000s using the harmonized HETUS classification. Conducting a TU survey is not obligatory, but the HETUS guidelines provide a well-tested methodology and Eurostat provides technical support to the less developed statistical systems (Gardner 2017).

In the 1980s, interest in TU surveys rose in Latin American and Caribbean (LAC) countries. Cuba was the first country to conduct a TU survey in 1985. Currently, 19 countries in LAC have conducted TU surveys and all, except for Nicaragua, have had at least two rounds or are in the process of implementing their second study. Additionally, in 13 countries some sort of legislation or regulation related to the implementation and analysis of TU surveys exists. Mexico, along with regional UN agencies, began convening annual NSO meetings on gender statistics in the year 2000. These initiatives led both to the creation of the Time Use Classification for Latin America and the Caribbean (CAUTAL), a regional harmonization tool aligned with the ICATUS, and to the valuation of unpaid work as a part of the System of National Accounts in Mexico, Argentina, Chile, Colombia, Peru, Ecuador and Guatemala.

Other advanced economies are catching up on fielding TU surveys and introducing new technologies for data gathering. Canada collected its first TU data as part of the general social survey in 1986, followed by Japan in 1996, and the US in 2003. In these developed countries, survey respondents start at comparatively older ages—at age 15+ for Australia, Canada and the US. These advanced economies have also used computer-assisted telephone interviewing tools to gather the data.

Countries in Asia and Africa began collecting TU surveys in the late 1990s. They have used a variety of methods. In Asia, the first national TU survey was conducted in South Korea in 1999 (although the Korean Broadcasting system had implemented a TU study much earlier, in 1981). Both India and Indonesia conducted pilot standalone TU surveys in 1998–1999, but not covering the whole country. Currently, 14 countries in Asia have done these surveys, mainly standalone and one-off (only Thailand, South Korea, Indonesia, and Mongolia have conducted more than one TU survey measurement), with the majority of countries employing a combination of diaries and the ICATUS classification. South Korea records the most number of TU surveys in its region, nine in total between 1981 and 2014. And Cambodia was the country in the region that included the youngest household member (age 5+) in a module in 2003–2004.

In Africa, South Africa first launched a standalone national TU survey in the year 2000. Earlier, the 1991–1992 Living Standard Measurement Survey in Ghana, conducted by the World Bank, had included a TU module. Twelve countries in Sub-Saharan Africa as well as Tunisia, Morocco, and Algeria have developed TU standalone surveys and modules since the early 2000s. In the Middle East, seven economies have conducted TU surveys since the mid-2000s employing a combination of HETUS and ICATUS methodologies. There has been a mix of independent surveys and TU modules hosted in other surveys and listing activities or stylized diaries have predominated over the 24-hour diary method. Malawi has recorded the youngest member at age 5+. In the region, Ghana is the country that conducted the most TU studies recorded in the Annex table: four modules and one independent survey.

Activity classifications

Variation in the classification of activities across countries has been a challenge that the new ICATUS classification hopes to overcome. Deciding on a classification of activities that works across cultures and facilitates the analysis of TU data is a major challenge. While efforts towards the harmonization of classifications across countries is ongoing, standardization is difficult for some countries, particularly those that face

budgetary and practical concerns. Some developing countries have approached TU data collection using their own set of activity categories or a "short-tasks list" to suit their needs and budgets, aware that methodological trade-offs are involved. The new, improved ICATUS 2016 classification, which many hope will increasingly be adopted, is divided into nine groups that align well with the new ICLS 19 definitions of work and employment. Activities are broadly classified into the following nine major groups (Table 1):

Table 1. ICATUS 2016 classification of activities.

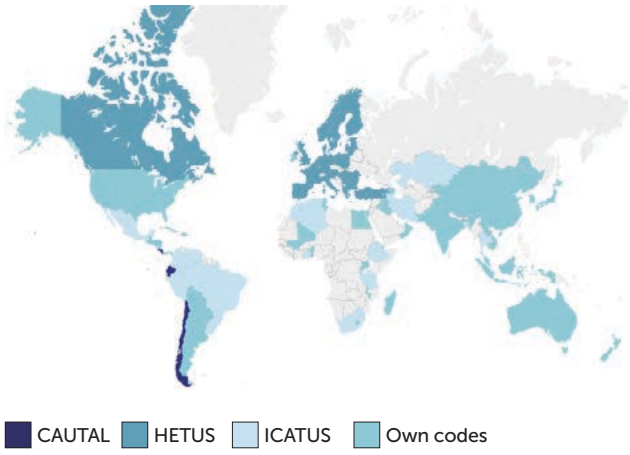
Major Division	Acitvity
1	Employment and related activites
2	Production of goods for own final use
3	Unpaid domestic services for household and family members
4	Unpaid caregiving services for household and family members
5	Unpaid volunteer, trainee and other unpaid work
6	Learning
7	Socializing and communication, community participation and religious practice
8	Culture, leisure, mass-media and sports practices
9	Self-care and maintenance

Source: UNSD (2017).
Note: ICATUS = International Classification of Activities for Time Use Statistics.

Regional variations in classifications respond to regional differences in culture and technology. In general, the major divisions of the ICATUS correspond to one-digit codes of HETUS. ICATUS contains more main categories corresponding to the one-digit HETUS codes for employment, household and family care, social life, and entertainment. There are several differences but a correspondence table relating ICATUS and HETUS makes harmonization possible to a large extent. Although the structure used in ICATUS and HETUS differ, the many consultations have underscored that it will be relatively easy to move from one classification to the other.

Currently, however, the Eurostat Time Use Working Group is reviewing the HETUS Activity Coding List. In these surveys, respondents are asked to record their daily activities in a time diary. Between 1998 and 2006, the countries that participated in this project were Belgium, Bulgaria, Estonia, Finland, France, Germany, Italy, Latvia, Lithuania, Norway, Poland, Slovenia, Spain, Sweden, and the United Kingdom. The general recommendation is to collect TU data every 5 to 10 years.

Figure 5. Type of time use survey classification used by country.



Source: Charmes (2015), UNSD (2018).
Notes: CAUTAL = Time Use Classification for Latin America and the Caribbean; HETUS = Harmonized European Time Use Survey; ICATUS = International Classification of Activities for Time Use Statistics.

The Latin America and the Caribbean CAUTAL is a five-level hierarchical classification developed for countries in the region. The classification was revised and adopted by the Statistical Conference of the Americas of the Economic Commission for Latin America and the Caribbean (ECLAC) during its eighth meeting in 2015

Many countries such as Australia, New Zealand, the United Kingdom and the United States have developed their own classification of activities and methods of collecting data. For instance, three features of the UK diary instrument that are not widely available in time-use surveys are: allowing participants to record multiple secondary activities; including a tick-box for events which involved the use of a smart device; and collection of enjoyment ratings alongside each event.

Lessons about Methodological Issues in Time Use Surveys

This section reviews key methodological issues about TU surveys and draws lessons from country experiences and research. Considerable evidence (see Annex) about how these surveys have evolved in order to capture more reliable and more complete data on time use points to the remaining issues in survey implementation that must be addressed, such as how to reduce survey costs, how to mitigate the burden on respondents, and how to improve the availability of harmonized data. The section draws upon various documents from the United Nations Statistics Division's (UNSD) data portal on TU surveys and previous studies, as well as excellent papers that have elaborated on the strengths and weaknesses of alternative survey methods or discussed the critical challenges in collecting TU data. Notable research includes Budlender (2007), Gershuny (2011), Hirway (2010), and Charmes (2015), among others.[4] This section is organized into four parts: time use collection methods, activities and time use codes, selection of respondents, and innovations in data collection.

Time use data collection methods

Time use data have been collected using four distinct approaches across countries:

Direct observation method in which interviewers directly observe and record the time and activity of the respondent;

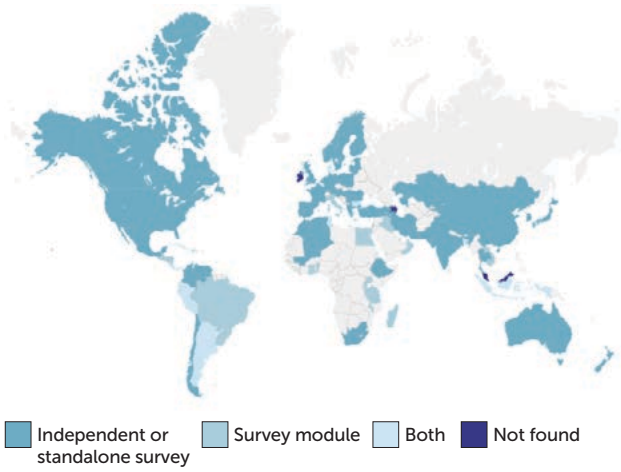
Time diary method in which the respondent is asked to self-record all activities undertaken during a typical 24-hour period (at time intervals ranging widely from 10 minutes to one hour across countries) and the beginning and ending times for each activity; a list of activities is usually provided to the respondent;

Interview method using interview-recall in which the respondent is asked to recall, instead of being asked to self-record, all activities undertaken during a 24-hour period for given time slots; an activity list is used in the interview; and,

Stylized questions method using interview-recall in which the respondent is asked to report time spent on specific activities of interest during a reference period, either on the previous day or previous week. There is no intention to record all activities during the period. Some examples of these questions follow:

- "How often do you engage in [pre-defined activity]?
- "How much time did you spend in [pre-defined activity] in the past 7 days?"
- "Who usually does the [various routine items of domestic work] in your household?"

Figure 6. Type of survey instrument used by country.



Source: Charmes (2015), UNSD (2018).

1 Different time use methods may be more appropriate in low-income countries than in higher-income countries

Those agencies collecting the data have different reasons for choosing a data collection method. Some countries may start with one method and then shift to another method, as in the cases of Chile, which used an interview-recall time diary method in 2007 before switching to a stylized question method in 2015. Ghana went in the opposite direction. Several studies have examined the relative advantages and disadvantages of alternative methods of TU data collection in the context of developed countries, but few rigorous empirical studies compare the alternative methods in the case of developing countries.

Such an investigation would be useful in low-income countries for several reasons (Budlender 2007; Hirway 2010). First, unpaid family work and informal, casual

employment are more common in these settings, so work hours are more easily underestimated, especially when they involve women and young children working on a casual or seasonal basis. Second, unpaid and informal work may be typically combined with housework and childcare activities, resulting in underestimating either the market hours or the domestic and care work hours unless simultaneous or secondary activities are carefully measured. Third, because of the lack of timepieces at home, respondents may generally be less aware of the duration of activities undertaken. Fourth, households may be larger and more complex in structure, making it more difficult to understand roles and time use within the household. Thus, in countries with lower literacy rates, where informal or casual market activities predominate, and use of clocks or watches is limited, it could be quite hard for many respondents to state the exact amount of time they spent on a long list of activities for given time slots, as required for time diaries using interview-recall.

Direct Observation

The direct observation method to fill out a time diary does not rely on the respondent being able to read time, but accuracy depends on the presence of the observer inadvertently influencing the activities performed by respondents (King and Evenson 1983; Juster and Stafford 1991; Hirway 2010). This direct observation method can also be prohibitively costly and is hardly used because the data worker must be present in the household all day and more than one data collector would be needed to follow household members who leave the house. This method might be useful only as a means to provide benchmark data for future TU surveys. To our knowledge, only the Dominican Republic and Morocco have applied a direct observation method (in 1995 and 1997, respectively) before switching to an interview-recall method in their most recent TU surveys (UNSD 2016). The use of electronic tracking and monitoring instead of the physical presence of a field worker can help reduce the obtrusiveness of direct continuous observation (Gershuny 2011). There are examples of GPS/GSM continuous real time geographical tracking for TU data collection. This approach may be paired with real time physiological monitoring and recording, which allows direct estimation of the metabolic consequences of activities.[5]

Time Diaries

Researchers have tended to favor time diaries, which capture data on all activities undertaken during a 24-hour period, over the stylized questions method (Budlender 2007; Gershuny 2011; Kan and Pudney 2007; Kitterød and Lyngstad 2005, among others). The diaries are preferred because all time intervals can be accounted for, respecting the 24-hour frame. Time is recorded for activities in the sequence they occur, thus providing information not only about the duration of activities but also about their sequence and timing during the day. And in the case of self-administered time diaries, time is (supposed to be) recorded shortly after activities have been undertaken, thus minimizing over- or under-reporting of time.[6] Other researchers argue, however, that time diaries are too onerous. Whether they are filled out using interview-recall or self-reporting, they may actually under- or overestimate short-duration activities, because respondents have to report time use in regular blocks, such as 15- or 20-minute intervals, during which a short-duration activity could either be ignored or grossly overstated. Such diaries do not necessarily reflect a person's typical or long-run time use because there is considerable day-to-day variation in the time spent on different activities (Frazis and Stewart 2010).[7] In low-income contexts, another issue with time diaries is whether to focus on the last 24 hours, or a typical 24-hour day, to account

4 Budlender (2007) reviews TU surveys in seven countries. Charmes' inventory (2015) includes 65 countries and 102 surveys.

5 The resulting electronic records require the addition of continuous descriptions of the purposes or intentions of activities, (answering questions such as: Why were you running? What were you doing there?), to be provided subsequently by the human subjects of the observations (Gershuny 2011).

6 Gershuny (2011) also argues that people's time use over time changes in unexpected ways and can be documented only with time diaries. These changes are the result of technological innovations and environmental pressures which bring about substantial changes in life patterns. An example is the notable increase in computer use over the last two decades. In the UK, for example, he finds that fewer than 1 percent of men ages 18–64 used a computer on a randomly chosen day in 1985, while 22 percent did so in 2005. A full national-scale, random-sampled, own-words diary study may be the only means of documenting these big changes in daily life.

7 Time diary methods specify the length of the time slot. Diary-based time use surveys in Europe have generally used a time slot of 10 or 15 minutes for recording activities. Shorter time slots place a greater burden on the respondent to recall what happened in shorter intervals of time, but they may promote greater specificity. If an interview-recall method is used, it is unlikely that respondents would be able to recall activities a day later to the degree of accuracy required by such short time slots, especially in settings where awareness of clock time is not highly developed. A general indicator measuring the quality of diary data is the number of activity episodes and the total time of secondary activities as a quality indicator of diary-based time use measurement (Väisänen 2006). A quality indicator based on the number of episodes was studied using the diary data of the Finnish Time Use Survey. Around 20–25 activity episodes, on average, are considered a reasonable value for the indicator.

for illnesses or other events, seasonal or sudden, that may temporarily shift individuals' time use. Some surveys with time diaries/modules, like the Rural Economic and Demographic Survey in India, use diaries for different agricultural seasons — intended to account for these possible variations, but which can also heavily increase respondent burden.

European countries, Australia and New Zealand, South Korea, Japan, and the United States are among the countries that use a self-recorded time diary method, perhaps reflecting the generally higher literacy rates in those countries. Most developing countries, on the other hand, have chosen the interview-recall method for time diaries using a version of the UN's international activity classification. Some countries use more than one method simultaneously in order to meet the specific needs of their populations. For example, TU surveys in Nigeria and Oman have used interview-recall for households with low literacy and self-administered time diaries for households with literate members.

Stylized Questions

In other countries, especially in Latin America but also in Cambodia, Egypt, and Tunisia, the stylized question method that involves asking the respondent to recall the amount of time allocated to specific activities over a specific time range is the most common method, and it is also used in some socioeconomic and labor force surveys (Charmes 2015).[8] According to Chile's National Statistics Office, focusing on a pre-defined list of activities is easier to administer and code and ensures that specific activities of interest are measured.[9] This method may be easier to implement in contexts where household work and paid work are clearly delineated, so the respondent is better able to recall pre-defined activities. It involves far fewer questions and requires less time than a diary, and the data produced are easier to analyze (Budlender 2007). But it has been argued that it places a heavy burden on respondents whose activities do not follow a set schedule (Seymour, Malapit and Quisumbing 2017). There are two reasons why the stylized method might be too difficult in some countries: respondents have to recall their activities in the recent past and then they have to perform an appropriate form of averaging (Gershuny 2011). These tasks may be too difficult for respondents, leading to substantial measurement error; at the same time, the focus on fewer activities may allow the respondent enough scope to choose responses that correspond with social norms.

Another limitation of the stylized approach is that it does not provide information on the time of the day that different activities are performed, limiting any analysis of the interaction between economic and unpaid care work (Budlender 2007; Gershuny 2011).[10]

Comparing Methods

A few studies illustrate how the choice of survey method can produce diverging estimates. Kan and Pudney (2007) compare time data on housework from 1,000 randomly selected households in the U.K. using two methods, the stylized questions method and a seven-day time-diary. They find a significant gap between the estimates associated with gender, presence of dependent children, the amount of housework performed as secondary activities, and irregularity in housework hours. They conclude that a tendency to inflate responses about housework may be the outcome not only of memory problems, double counting, or confusion about what is housework, but also of the social perceptions of the appropriate roles for men and women regarding their contributions at home (Gershuny 2011). Simultaneous activities are also a source of disparity. Women in particular may do housework as a secondary activity while a primary activity is undertaken simultaneously. In such cases the primary activity is registered in the time diary whereas simultaneous household chores are recorded as secondary activities and as such excluded in most reports on time use (Kitterød and Lyngstad 2005).

Comparing childcare data from Spain collected with a time use diary from the National Institute of Statistics (INE) and data from the Spanish National Research Council (SCIC) collected through an activity list survey, Duran and Milosavljevic (2012) find that childcare time is recorded more accurately in the SCIC survey. They attribute this to the different ways of formulating questions, type of language used, examples and instructions given to the respondents, and a bias based on what may interest the institution sponsoring the survey. They note: "If we ask respondents to write down what they were doing every 10 minutes, we will miss the woods for the trees. We are likely to get better results if we ask them how much time they spent on each activity the day before, and then add up the answers."

Key Takeaway

No one TU data collection method fits all objectives. Despite many initiatives to achieve greater comparability of TU data around the globe, countries and nongovernmental agencies

that collect TU data are nevertheless choosing different methods to record time use. Research has identified several reasons why they do so and why it is good that they do. A higher ratio of unpaid and informal workers to formal workers and a higher prevalence of unpaid care work in developing countries; the lack of timepieces at home and limited use of clocks, if available; lower literacy levels; larger households with more complex family structure; and more traditional gender roles—all make it more difficult and more costly to implement a self-recorded time use diary that is guided by a long, detailed list of activities, the preferred method in more advanced countries. The choice of method should also be guided by the country's capacity to collect, verify, and analyze TU data, if these data are to be used for policy or program decisions.

Over time, a change in the choice of method may be justified. Greater experience collecting TU data and an increased appreciation for their use may increase effort as well as understanding about the method that better fits the needs of the country. Also, demographic shifts such as falling birth rates and aging populations, job growth, technological innovations, and educational progress lead to substantial changes in life patterns. How best to capture and document these big changes in daily life may require a change too in the methods used to collect TU data, including improved fieldwork technologies to record and capture activities.

2 Standalone surveys show a commitment to collecting time use data but are more useful for research and policy when time use data are linked to contextual information

Many countries have been collecting TU data using standalone national surveys and others have used time use modules as part of a regular household or labor force survey. Most developed countries conduct national standalone surveys regularly, and several developing countries do the same (e.g., Mongolia and Thailand) while others use time use modules within larger surveys (e.g., Brazil, Laos, Ghana, Tanzania). Some countries initially undertook standalone surveys, perhaps as a trial, but ultimately switched to time use modules (e.g., Cambodia, Tunisia, and Uruguay). Others have done the opposite (e.g., Ghana, Bolivia, and Peru).[11] Some countries do both, fielding a standalone survey in one year and a time use module of a household survey in other years (e.g., Colombia and Mexico).

Standalone surveys serve to highlight a commitment to collecting TU data. However, these surveys tend to be expensive, and they tend not to collect a broad set of background data about the respondents and the respondents' households.[12] This practice is changing. Standalone surveys now collect more demographic and socioeconomic information about the respondent, as well as basic work-related information. This additional information should help countries carry out more in-depth socioeconomic analysis of time use patterns.

8 The exception is Cuba which uses a time diary method (Charmes 2015).

9 See Chile case study in Volume II of this report.

10 According to Gershuny (2011), "[t]he stylised measures have shortcomings associated with the measurement of work-leisure balance. Actual or usual duration questionnaire items are entirely unrevealing of work rhythms. They do not tell us when during the day and the week paid work is undertaken (and therefore lack evidence of atypical or antisocial hours). They do not tell us the duration of work spells (and so lack evidence of work stress). They tell us nothing of whether spouses or 13 other household members are simultaneously working or taking leisure (hence they miss evidence of unsociable hours). Yet arguably the most important impact of paid work changes on well-being relate to exactly these issues of daily and weekly work rhythms" (pp. 12-13).

11 In Uruguay, the National Care Policy was developed by using the TU modules in household surveys implemented by Uruguay's NSO. A standalone survey has been implemented only once (2003) in the greater Montevideo area. The data from TU modules was enough to spur a national discussion between the government and civil society about the care economy and the government's National Care Policy.

12 Reviewing national-level time use surveys in African countries, Kes and Swaminathan (2006) found them limiting because they do not provide demographic and economic information.

Other countries are combining standalone surveys at spaced intervals (4–5 years) with survey-based time use modules in household surveys, particularly employment surveys; this allows for activities to be studied in depth and then monitored yearly. In Mexico, the time use module was administered after the main part of the national income and expenditure survey (ENIGH) had been completed, but to the same households. The time lapse between the main part of the survey and the time use sections means that direct comparisons of information from both sections should be treated cautiously as the situation of individuals, or even households, could change in the time between the two surveys. Nonetheless, this hybrid approach allows for analysis of trends over time at community/sub-regional levels and provides a richer set of background variables for a policy-relevant time use study.

Key Takeaway

Besides gender and age, contextual variables are particularly important to measure at the same time as the TU survey. Some of these are:

Location. Important rural-urban differences in time use are likely. Travel time to the workplace, a health center, a school, or a supermarket is determined by distance from the home as well as the availability of transport. Collecting GPS data in many recent socioeconomic surveys can add helpful information to track these differences.

Education levels and school enrollment status. The literacy level of the respondent determines the respondent's ability to provide accurate TU data. In addition, the completed education of adults and the enrollment status of children and adolescents can be important for understanding time use patterns. Information about the participation of children in childcare centers and pre-kindergarten can make it easier to interpret TU data about childcare activities. The Mexico and Uruguay surveys, for instance, ask for this information.

Employment status and type of employment and occupation. Although the TU data indicate hours of work, it is useful to examine patterns in work hours and time spent in housework for different types of employment.

Ethnicity/Race. The TU surveys of Mexico, Ecuador, Cambodia, and Ghana ask respondents to indicate the principal language spoken at home or by the mother. This information can be used to analyze the differences in time use by ethnicity and race.

Household structure, size and composition. Female headed and multigenerational households, for instance, face different time pressures than more conventional male-headed households. The presence of very young children in the household is likely to influence the amount of time spent on childcare, while the presence of potential substitutes for parents is likely to ease that burden.

Marital status. The time constraints and opportunities for widowed/divorced women, for example, are likely to be very different from those who are married or single. Knowing this helps immensely in interpreting their time use.

3 Repeated surveys and panel time use surveys can be used to identify and measure significant changes in people's activities over time and thus the impact of policies

The ability to collect and compare TU data over time can benefit research and policy. A periodic data collection (preferably every four or five years), using the same households (that are nationally representative) to the extent possible, provides a very useful tool for tracking time use patterns, and for monitoring and assessing the impact of economic shocks or policy changes on daily lives. The study by Aguiar and Hurst (2006) illustrates these benefits. By linking five decades of detailed TU data, they are able empirically to document how home production and leisure have evolved for men and women of differing work status, marital status, and educational attainment over a period of 40 years in the US.

Other developed countries such as Australia, Canada, France, Netherlands, Norway, South Korea, Sweden, and the United Kingdom, also collect TU data on a regular basis and have opportunities to study shifts in time use over time. However, these countries have changed their survey methodologies—the survey tool used, choice of respondents, and the number and categorization of activities—over the years, making it more difficult to study trends in time use. Most developing countries so far have collected TU data only once or twice, but a growing number are fielding second and third surveys.

Key Takeaway

An increasing number of countries have fielded TU surveys more than once, and these data collection initiatives are becoming a regular

source of information about the daily lives of people and households. In another decade, many middle-income countries will have joined the advanced countries in having years of data with which to undertake more in-depth analysis of, say, work patterns not yet possible with traditional labor force surveys. An appreciation of the benefits of long-term analyses of TU data is still lacking in these countries. While research in these countries has provided information about differences by gender or by other demographic groups, no comparable published longitudinal analysis of time use patterns exists yet. Keeping in mind the potential research benefits of linked surveys over time may influence the design and implementation of these surveys in the future.

Categorization of activities and harmonization of time codes

One critical methodological issue related to time use surveys involves deciding how to classify activities and codify time use. This section focuses on the issues related to this challenge.

1 Comparability of activity lists and time use data is limited despite harmonization guidelines

Several classification systems for time use exist, but more countries are using harmonized time use codes, improving the potential for cross-country comparisons. Cross-county harmonization and the possibility of cross-country comparisons enhances the analytical and policy-relevant value of each national time use survey. However, substantial variation across countries still exists in the level of disaggregation among activity codes applied and activity coverage.

Attempts to harmonize TU surveys go back to the early 1960s, with the Multinational Comparative Time-Budget Research Project. The participating countries then used daily activity diaries and a common coding on the basis of a 99-activity nomenclature. The countries involved were Belgium, Bulgaria, Czechoslovakia, the Federal Republic of Germany, France, the German Democratic Republic, Hungary, Peru, Poland, the Soviet Union, the United States, and Yugoslavia (Chenu and Lesnard 2006). More than three decades later, the United Nations Statistics Division developed a trial International Classification of Activities for Time-Use Statistics (ICATUS) in 1997. At the time, ICATUS consisted of 10 major divisions, three corresponding to activities within the System of National Accounts production boundary, three to activities outside the SNA production boundary but nevertheless recognized as work (that is, unpaid care work), and four corresponding to non-productive activity (that is, activities that do not fulfil the third person criterion and, thus, fall outside the extended production boundary of the SNA).

After the Second Expert Group Meeting in 2000, this classification system was elaborated to 15 major divisions, 54 divisions, 92 groups, 200 classes, and 363 subclasses, and published in the Guide to Producing Statistics on Time Use: Measuring Paid and Unpaid Work (United Nations 2005). In June 2012, the Third Expert Group Meeting finalized ICATUS, taking into account the experiences and needs of several countries that had adapted it (either the draft or the trial version) in their data collection, tabulations, and analysis of time

Table 2. Activity grouping in different classification systems for TU surveys.

Structure	ICATUS		HETUS		CAUTAL
	2005	2016	2000	2008	2015
Levels	5	3	-	-	3
Major divisions (1-digit)	15	9	7	10	9
Divisions (2-digits)	54	56	21	33	34
Groups (3-digits)	92	165	96	108	96
Classes (subgroups) (4-digits)	200	-	-	-	23
Subclasses	363	-	-	-	-

Sources: ICATUS: UNSD (2017); HETUS: Eurostat (2009); and CAUTAL: ECLAC (2016).

use statistics. This new ICATUS calls for activities to be grouped into a simplified 3-digit code structure (rather than 5 digits as in ICATUS 2005) in order to facilitate its implementation at the national level. ICATUS 2016 has 165 groups classified into 56 divisions and 9 major divisions, which represents a manageable number of categories, facilitating the usability of the classification.

The Classification of Time-Use Activities for Latin America and the Caribbean (CAUTAL) is an example of a regional effort to harmonize TU data. It was undertaken by the Working Group on Gender Statistics of the Statistical Conference of the Americas (SCA) to meet the need of Latin American and Caribbean countries for a gender-sensitive instrument appropriate to the regional context that could be used to harmonize and standardize time use surveys and produce statistics in the region (Gómez Luna, 2016). A harmonized regional effort not only aims to construct a common classification system but also to create a system that fits the most practical survey methodology in the countries. Gómez Luna argues that the ICATUS classification system best fits a time-diary data collection, which "never became widespread in Latin America ... because of issues involving perceptions of time in different parts of the region, literacy levels and survey costs."[13] Nineteen countries in the LAC region have conducted more than one survey. Three countries use the CAUTAL classification scheme.

The Harmonized European Time Use Survey (HETUS) is the harmonized time use micro-data system in 15 European countries: Belgium, Bulgaria, Estonia, Finland, France, Germany, Italy, Latvia, Lithuania, Norway, Slovenia, Spain, Sweden, and the United Kingdom (Eurostat 2009).[14] It harmonizes both the collection and reporting of TU data across participating countries. On the input side, this involves a diary format, certain procedures for data collection, a common activity coding list, and a set of common questions for the interview questionnaires. The time diary is self-administered, with fixed 10-minute intervals to be filled in during randomly designated diary days. Respondents record what they are doing in their own words. Not only households or individuals but also days are randomly sampled, and the sampled days should cover a year, with "a year" referring to 12 months, starting any day during the calendar year. It is unrealistic, though, to hope for even coverage and even quality for all days and seasons (Eurostat 2009). Participating countries do have the opportunity to choose other aspects of survey design and practice, but some constraints are essential in order to generate data on which similar and comparable statistics can be estimated (e.g., selection of the population, reference period for the survey, and randomization of diary days).

As mentioned in the previous section, there have also been efforts to harmonize TU data ex-post. The Multi-National Time Use Study (MTUS) is an example of a project that harmonizes ex-post the national, randomly sampled time-diary studies in 11 developed countries (Gimenez-Nadal and Sevilla 2012). Since there is no harmonization effort similar to HETUS or CAUTAL in other world regions, an ex-post approach may be the only opportunity to harmonize existing TU data from Asian or African countries. Indeed, Charmes (2015) demonstrates that even a limited ex-post harmonization is possible and allows a comparison of regional and sub-regional time use profiles. His analysis is based on data from time diaries that are able to distinguish between various components of paid work (formal, informal, subsistence), and unpaid work (unpaid domestic services, care work, voluntary), as well as various components of leisure and cultural activities (sports, hobbies, culture, mass media) and time spent for satisfying physiological needs (sleeping, eating, self-care, etc.). Even with these selection criteria, the analysis includes 102 surveys conducted in 65 countries – nine countries from the Middle East and North Africa (only three of which used the HETUS guidelines), eight countries from sub-Saharan Africa (most of which used ICATUS or ICATUS-inspired activity lists but for different population groups), and nine countries from Asia (five of which used either the ICATUS, HETUS, or a mix of both systems).

Key Takeaway

Harmonization of TU data involves addressing several challenges. It requires overcoming differences in survey methodologies such as different response rates and sampling frames (e.g., coverage of the population by geography and age groups), whether they represent activities for a given time period and across seasons in a year, and whether aggregated categories of activity are comparable. TU data from the countries that use their own activity codes rather than any of the major classification systems and from countries that use specialized questions rather than time diaries present obstacles to cross-country comparisons. How to balance comparability, on the one hand, and customization, on the other hand, is a challenge that countries must address.

Harmonizing the time codes of selected activities globally, such as market work, while using country time codes for unpaid work activities may be a hybrid approach that would still allow countries to supplement their labor survey data and compare those data with work levels in other countries. Another hybrid approach would be to collect data and use harmonized codes for selected unpaid activities, in addition to paid work activities. Keeping an eye on the link between data and policy use is a useful guide.

2 Unpaid employment and nonmarket work are easy to miss and underestimate

One important challenge for harmonizing TU data relates to aligning the definition of work activities (Ghosh 2016). As discussed earlier, the 19th International Conference of Labour Statisticians (ICLS) distinguished between work and employment as follows: "Work comprises any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use" (ICLS 2013, p. 2). The inclusion of the last phrase "for use by others or for own use" is a crucial difference, as it includes the production of goods and services performed in the home for other household members and for personal use. So work is now defined irrespective of its formal or informal character or the legality of the activity. However, it excludes activities that do not involve producing goods or services (e.g., begging and stealing), self-care (e.g., personal grooming and hygiene) and activities that cannot be performed by another person on one's own behalf (e.g., sleeping, learning, and activities for own recreation). The significance of this definition is that it maintains that productive work can be performed in any kind of economic unit, including the family or household. Thus, employment, defined as "work for pay or profit," is just a subset of work (Figure 2).

The predominance of unpaid family workers and casual, temporary, or seasonal (wage) labor in agriculture and small informal enterprises in lower-income countries tends to lead to underestimated work hours,especially for women and children. This underestimation arises because surveys such as censuses typically classify workers according to their reported "main occupation," often resulting in women self-reporting as housewives and not in the labor force. The expansion of the service sector and the growth of jobs using mobile technologies have also led to more flexible and atypical work schedules (e.g., shift work, dispersed hours) and workplaces (e.g., home or other outside offices and shops).

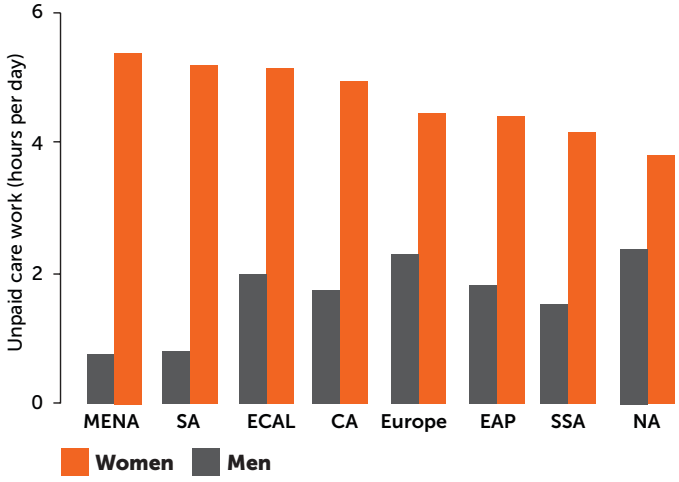
The benefits from using TU data rather than the usual labor force survey data to capture the level of market work hours are profound. Hirway and Jose (2011) illustrate that better documentation of unpaid family labor in agriculture, participation in subsistence production as well as home-based production more than doubles the female workforce participation rate estimated using conventional labor force and household surveys. The 1998–1999 Indian Time-Use Survey, for instance, reveals that 42 percent of women participated in subsistence productive activities, compared with only 7 per cent of men, and the average weekly time of women on these activities was also much longer (6.1 hours per week as compared with men's 0.97 hours). Floro and Komatsu (2011) find similar underestimation using data from the 2000 South African national time use survey: 11 percent of women and 16 percent of men classified as "not in the labor force" were actually working an average of 2.6 and 3.6 hours per week, respectively. Among those classified as "unemployed," 12 percent and 27 percent of women and men, respectively, actually worked 2.9 and 4.6 hours per week. The majority of the men in these two categories were engaged in subsistence work related to fishing, hunting, and farming. Besides subsistence farming activities, 20 percent of women "not in the labor force" and 26 percent of women who were "not employed" were engaged in making or selling textile or leather products in mobile locations, suggesting that they had informal jobs.

13 The survey methodologies used by the LAC countries have been diverse and heterogeneous, both in their data-gathering procedures, activity classifications, geographical coverage, and indicators calculated and published (Gómez Luna 2016). Early time use surveys in seven countries (Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Cuba, Mexico, and the Plurinational State of Bolivia) employed a time diary, but these surveys were discontinued. In 14 countries, questions about a list of activities, rather than a time diary, were added to existing household surveys with their own methodology. Time use questions or modules have been incorporated into multipurpose surveys. In more recent experiences, standalone surveys have been used to collect information (Chile, Colombia, Ecuador, Mexico, Panama, and Peru). These are more expensive than questions or modules but are far more thorough when it comes to the detail of activities and the subcomponents of each type of unpaid work (care, domestic work, or volunteer work).

14 The effort was developed by Statistics Finland and Statistics Sweden with financial support from the European Commission.

TU data also reveal that time spent on unpaid housework, care of children, of elderly persons, disabled and ill members of the household and community, and on voluntary community-oriented work is generally missed by labor force or household surveys and thus not included in national accounts. This omission results too in significant underestimation of the time pressure on household members. A World Bank study (2012) finds that irrespective of countries' per capita income or degree of development, women bore the disproportionate burden of responsibility for housework and other care work. This was found to be an important factor driving labor market segregation and the consequent earnings gaps. In addition, it meant that most women across all societies typically worked longer hours than men, whether or not they were recognized for it. Obviously, such patterns were found to be greatly accentuated for women after marriage and child birth. Wodon and Beegle (2006) find that in Malawi the seasonality of farm work determines significantly the level of time pressure on household work, with this pressure being largest for those in the poorest consumption quintile. Climate differences during these seasons also affect activities.

Figure 7. Average time spent on unpaid care work by gender and world region, 2014.



Source: OECD (2014); Gender, Institutions and Development Database.Notes: MENA = This chart includes coverage of 160 countries. Middle East and North Africa, SA = South Asia, ECA = Eastern Europe and Central Asia, LAC = Latin America and the Caribbean, EAP = East Asia and Pacific, SSA = Sub-Saharan Africa, and NA = North America.

Key Takeaway

According to the harmonized codes, childcare includes a host of activities devoted to caring for children, such as feeding and food preparation for infants and children; washing and changing them; putting them to bed or getting them up; babysitting; taking them to a health practitioner; reading to, or playing with them; helping schoolchildren with homework; and supervising their activities. If the time recorded is for only those activities considered as primary activities, then it is likely to underestimate childcare time. Other care work that is undertaken simultaneously with primary activities is also likely to be underestimated. Many time use surveys, including those in developed countries, have yet to figure out satisfactory solutions to measuring and reporting simultaneous or secondary activities. The concern has to do with overburdening the respondent with additional questions and a responsibility to differentiate between a primary and a secondary activity. The ability to collect data on secondary activities depends on the survey method and the design of the survey instrument. Countries will have to make a choice as to whether they will record only one (the main or primary activity) or whether they will record both activities. To do this, if the survey involves an interviewer, the interviewer might push the respondent to identify which is the primary activity and which is the secondary activity, and to recall missed activities that may be unreported simultaneous activities.

3 Measuring unpaid care work illustrates the importance of understanding secondary activities and the concept of time use intensity

There is still much to clarify and harmonize with respect to measuring unpaid care work. Time on care work is frequently defined as only the time spent physically feeding a child or an aged person, but excluding the time spent supervising or being responsible for them and excluding the time spent on associated activities, such as traveling to a health center or shopping for food. Childcare is a diverse activity, so a careful exploration of time use patterns provides better estimation of the time spent by parents and other household members (Ironmonger 2004). In particular, not measuring these

unpaid activities accurately is likely to underestimate significantly the total work of women relative to that of men. Figure 7 shows the disparity in the average time spent on unpaid care work by men and women around the world.

One reason why unpaid care work is so difficult to measure accurately is the common practice of overlapping or simultaneous activities, especially in the care of young children and the elderly (Craig 2005). The distinction between primary and secondary care work is not clear-cut because some activities are relatively "passive," such as looking after or minding children and the elderly, and can be undertaken alongside other activities. This ambiguity leads to underestimating care work in the household. Fedick, Pacholok, and Gauthier (2005), using Canadian data, and Craig and Bittman (2005), using Australian data, find that for every childcare hour recorded as a primary activity, three to four more hours of childcare were performed as a secondary activity. Mullan (2010), using UK data, shows that supervisory childcare can be detected by using contextual information such as the presence of children in the same location while someone was performing another activity, such as cooking, gardening, or watching TV. The care of the sick and persons with disabilities within the home also frequently shows up as secondary activities. Many respondents do not report this care work unless asked specifically about a secondary activity.

Simultaneous or overlapping activities are not unique to care work, however. Multitasking is common throughout the household economy, complicating the estimation of total work and full production (Kenyon 2010; Offer and Schneider 2011). For instance, for self-employed workers who work at home, the distinction between work and home life can be blurred, as some do work at home and mix or overlap paid and unpaid activities. Failure to account for overlapping activities significantly underestimates not only an individual's economic contributions but also the total production in the household. Ignoring secondary activities also misses what has been termed the "intensification of work time" (Hamermesh and Lee 2007; Floro and Pichetpongsa 2010). Floro and Miles (2003) estimate that accounting for these secondary activities contributes an additional 25 percent of total working time for women and men in Australia, with the amount of multitasking done by women more than twice that done by men. Among couples, considering overlapping work increases women's total work time by nearly 44 percent, while men's work time increases by 20 percent.

Key Takeaway

The following methodological issues are especially relevant to measuring unpaid employment and household work because the type and intensity level of these activities can vary during the year:

- Distinguishing between weekdays and weekends is essential for accurately measuring women's contribution since their work tends to carry on regardless of whether it is a weekday or weekend.
- Accounting for seasonal variations is particularly relevant in rural households, because some agricultural activities are carried out during only certain seasons and other activities take place between agricultural seasons.
- The school calendar is relevant for children's time use as well as for their parents'. Childcare time can be significantly affected by school holidays and vacations. Some surveys call for completing time diaries for a weekday as well as a weekend day (Albania) or by scheduling the survey on randomly selected days throughout the year rather than in just certain months of the year (Finland).

4 Leisure and personal care, still treated as the residual of market and household work, reveal critical aspects of people's well-being

Leisure and time for personal care are often treated as the residual category of time use, after market and nonmarket work. Defining leisure is not straightforward, however. One definition of whether an activity is "leisure" is said to be the degree of substitutability between market inputs and time inputs in the production of the commodity. One can use the market to reduce time spent cooking (by getting a microwave or ordering takeout food) but cannot use the market to reduce the time spent watching television or sleeping (Aguiar and Hurst 2006). In Thailand, for example, as earnings rise, married women and men allocate more time for leisure, reflecting the fact that higher earnings enable households to purchase domestic help and labor-saving appliances (Yokying et al. 2016). But this definition does not distinguish among the activities that are aggregated as leisure. Research differentiates among three types of leisure time: active leisure, in which leisure is the primary activity but may be accompanied by childcare, paid work, and personal care as a secondary activity; pure leisure, in which the primary and secondary activities are

both leisure activities, or there is no secondary activity; and passive leisure, in which the primary activity is an activity not considered to be leisure, but the secondary activity is, such as listening to music while housecleaning (Kahneman et al. 2004).

Why pay more attention to leisure rather than treat it as a residual activity? Understanding how people live, what they consume and how they spend their time gives us insights into people's future health and well-being (Gershuny 2011; Kahneman et al. 2006). Medical science has shown that sufficient sleep and exercise are important for good health. Eating meals together as a family has been associated with better nutritional quality and better school performance of children, suggesting that using TU data to examine time spent in food preparation might be useful (Holder, Coleman, and Sehn 2009). Yet, time scarcity, that is, the perception that one does not have enough time, has changed food consumption patterns, reducing time for food preparation at home and for family meals, and increasing the consumption of fast foods or prepared foods. These patterns are associated with less healthy diets and may contribute to obesity and a higher prevalence of cardiovascular disease and diabetes (Guthrie, Lin, and Frazao 2002).[15] Increasing time pressures have also reduced time for sleep. Rather than estimating sleep time as a residual activity in a day, the more accurate way to measure it is through a time diary that asks respondents to recall how they spent a day, in chronological order from early morning on one day to 24 hours later on the next day (Robinson and Michelson 2010).

Key Takeaway

Explicit recognition that leisure activities and personal care are part of self-reproductive activities and a person's well-being argues for more attention being paid to these non-work activities. It makes sense to measure both the time spent to travel to a health center or visiting a health practitioner as well as time used for preventive health measures, such as sleep and exercise. In any country facing relatively high unemployment or seasonal productive activities, the methodological challenge is to distinguish "forced leisure" from true leisure activities. Failure to do so can result in a misinterpretation of the findings, so it is important to refine the tools for measuring these activities. One possible way may be to use health research findings to establish context-specific and age-specific benchmarks for necessary leisure and personal care time.

Whose time is it anyway? Household members represented in time use surveys

While the selection of households for conducting time use surveys does not differ from other household surveys conducted within countries' national statistical systems, the selection of the household member who is the respondent requires additional decision rules to provide answers to questions such as whether to include more than one member of the household and what the age limit for children should be.

1 The selection of household respondents may underestimate the contributions of all household members

Choosing the appropriate respondent(s) is particularly important when using the interview-recall method and for TU surveys that are part of a larger household survey. To select the respondent(s) in many household surveys, field interviewers typically first identify the "household head," and then record every other person's relationship to the head. In non-nuclear households that are multigenerational or contain adopted or foster children, this approach may result in ambiguous information about the relationship between any two members who are not the head. In the South African time use survey, after two people to be interviewed have been selected, the questionnaire asks for the relationship of every other member of the household to each of the selected persons (Budlender 2007). In some cases, the two selected individuals may be spouses or partners, but South African household composition and relationships are sufficiently diverse that other household structures may be in place. Identifying carefully the relationships of survey respondents can help understand their time use patterns and spot data weaknesses or puzzles.

Understanding the household structure is important because it affects time use. Research has shown that female-headed households tend to have different time use patterns compared with male-headed households.[16] The differences between female heads and female spouses in male-headed households are influenced by the woman's age, household sex composition, asset ownership, and patterns of sex discrimination in the labor market as shown by a study of time allocation among adult women in Lesotho (Lawson 2008). Female household heads are not only likely to have fewer assets compared to women in male-headed households, but

the amount of time they spend on domestic work is far higher compared to their counterparts in male-headed households.

Some TU surveys interview only one adult per household, but ask that respondent to recall the time use of all other eligible household members. This is certainly the case in surveys that collect TU data for household members as young as five or six (e.g. Benin and Cambodia). This practice puts a heavy burden on the respondent and risks inaccurately estimating the time spent by other members in specific activities. This measurement error limits any analysis of the intrahousehold distribution of tasks. Research has also indicated that because women do more intensive childcare, especially in the case of infants and toddlers, childcare by spouse or partners or older children can be underestimated if the mother is the respondent. Social norms and expectations can color responses in interview-recall surveys and in surveys that do not collect data on secondary activities, so it is important to watch out for potential biases (Kitterød and Lyngstad 2005).

2 The limited ability of very young and elderly respondents to self-record time use data requires different approaches

Surveys capture the time use of household members of widely differing ages, as young as 3 years old in Italy and 5 years old in Cambodia, and with no maximum age limit in most countries but specified as 84 years old in Hungary and Sweden (Figure 3). Ten and 15 are the most common minimum age among 86 countries: Forty-four percent designate 10 as the minimum age for including children, while 23 percent collect time for household members 15 years old and above. In countries that have a very low minimum age, a parent is expected to help fill out the time diary for young children (e.g. Italy). As mentioned above, who actually fills out the time diary when it is left behind by the field worker is likely to reflect social norms and the biases of the actual respondent (or recorder), so this is a point for caution in TU surveys.

The selection of the age range is salient to the development purposes driving TU data collection. In low-income countries where fertility rates are high and nearly half of the future population is expected to be under 15 (such as in many African countries), time use surveys that choose 15 as the minimum age will be missing the time patterns of nearly half the population. The amount of work by those under-15 at home, in the fields, or in workshops, the amount of schooling they get, and their health and nutritional status will likely determine the ability of those countries to meet the Sustainable Development Goals. For this reason, despite the caution regarding the reliability of time use records for children, this risk will have to be balanced against the disadvantages of not having data on, say, pre- and young adolescents. In Cambodia, for instance, concerns about child labor abuses two decades ago spurred the initiative to measure the time use patterns of children ages five and above.

At the other end of the age spectrum, the concern is more likely to be low literacy rates. Not being able to read or write, as well as respondents' concepts of time and ability to measure it, can pose challenges with self-reported diaries. While school enrollment rates and literacy rates have risen notably even in low-income countries, this recent progress usually leaves out the elderly population. Consequently, the concerns about the ability of very young children to respond on their own apply also to elderly adults.

3 Household structure should be considered in designing time use surveys

Finally, household structure can be quite diverse across countries, with accompanying differences in the composition of households and in the relationships among household members and even with members of related households. Whether a household is single, nuclear, or multigenerational, male- or female-headed, small or large, would likely have an impact on the time demands for an individual member. Thus, sampling

15 Guthrie, Lin, and Frazao (2002) find that between 1977–1978 and 1994–1996, consumption of food prepared away from home in the United States increased from 18 percent to 32 percent of total calories. Meals and snacks prepared away from home contained more calories per meal, and were higher in total fat and saturated fat on a per-calorie basis. Compared with at-home food, "away" food contained less dietary fiber, calcium, and iron on a per-calorie basis. Among adults but not children, "away" food contained more sodium and cholesterol.

16 It is important to be careful about classifying a household as female- or male-headed because households where there is a co-resident older adult male relative might identify that male relative as an honorific head but is not the actual household head for several reasons, such as lack of decision-making responsibilities and dependence on others for income.

approaches and any analysis of time use patterns should be informed by household structure and composition. Three points are worth noting:

First, as already mentioned above, large, multigenerational households are likely to be common in developing countries with high population growth, low incomes, and scarce affordable housing. Circumstances such as high adult mortality due to epidemics and wars also lead to big changes in household structure. For instance, in African countries that have suffered from high adult mortality due to HIV-AIDS, child-fostering is one way that communities have coped with the epidemic (Ainsworth and Filmer 2006; Schatz and Ogunmefun 2007). Secondly, the transfer of time resources between related households is one way that some households handle the heavy demands of employment and care responsibilities. One example of a survey that measured this was the Malaysia Family Life Survey conducted by the RAND Corporation. Analyses of the data indicate that co-dependence between households is sometimes expressed by transfers of time, in-kind goods, and cash (Butz and Stan 1982). Transfers of time to another household or received from another household is not a question that is usually asked in time use surveys. Ignoring these interhousehold time transfers can mean that the care services provided and obtained by households are underestimated. Thirdly, the presence of domestic workers can alter the time spent on care and household duties by household members. It is relatively common even for non-wealthy households in developing countries to count on the help of domestic workers for housework or childcare. The surveys in Costa Rica, Ecuador, Mexico, and Uruguay ask about the presence of domestic workers in the household. Especially if the domestic worker is a co-resident, this information helps researchers to understand the household's time use pattern. There's a significant body of work on the status of domestic workers, especially migrant workers, in some countries that can shed light on the time use pattern of these household members (Cortes and Pan 2013; Yeoh and Huang 2009).

Key Takeaway

Understanding social norms and the household structure should inform the choice of the survey respondent and the interpretation of the time use patterns in any context. It is important to situate the survey respondent clearly within the relationships in the household. For instance, research has shown that female-headed households tend to exhibit different time-use patterns compared with male-headed households. Research has also indicated that social norms and gender roles can color the responses to surveys of men and women, so it is important to watch out for these potential sources of biases. Finally, the demographic profile of a country and its age-specific literacy rates are relevant considerations for choosing time use survey design features. Very young populations may require choosing a lower age limit for eligible respondents in order to capture representative time use patterns. Countries where the elderly population is mostly illiterate may have to choose a different data collection method than for its younger population, such as a more interviewer-intensive method than a self-recording method.

Innovations in the implementation of time use surveys

The benefit-cost calculus of time use surveys is a topic that deserves much attention. The benefits of having TU data to dig more deeply into development issues, such as the burden of care work for household members when the market for care services is thin, the ability of men and women to respond to public employment programs, and the full level of household investment in children's schooling and health status are substantial. The movement toward more harmonized time codes across countries is an example of an innovation that greatly expands the usefulness of TU data as it allows rich comparisons across countries. These benefits, however, have to be weighed against the costs to funders and administrators of time use surveys and to respondents of repeated data collection efforts. Chenu and Lesnard (2006) review the historical development of time use surveys, highlighting various changes that countries and international agencies have made over time in order to improve the quality, comparability, and availability of TU data. More research is needed to review also the change in the cost of these surveys.

1 Consider and assess new survey technologies to improve reliability and reduce cost

Countries have been piloting and assessing new methods that use electronic devices such as personal computers, tablets, and smart phones for recording activities, as well as beepers to remind and nudge respondents. One

experiment in the United Kingdom tested young people using computers, smartphones, and questionnaire sheets. The results reveal that those who responded using questionnaire sheets spent more time browsing websites and using social media than those who used other methods. In Canada, the statistical agency conducted an experimental research to compare Internet and telephone surveys and found that little difference in the content of the responses, and the response rate did not improve among the youth, even with the Internet survey (Fedick, Pacholok, and Gauthier 2005). Researchers in South Korea examined the difference between using a questionnaire sheet and a smartphone app to self-record activities. The respondents reported that the smartphone app was more convenient and easier to use and suited for recording activities that are closer to reality, but again, the new technologies showed little difference in either the type of recording or in the results. The American Time Use Survey is administered using computer assisted telephone interviewing (Mulligan, Schneider and Wolfe 2005). Selected eligible respondents are asked about yesterday's activities during the interview. If the respondent is unavailable on his or her initial calling day, then subsequent attempts are made on the same day the following weeks. This insures that the reference day is always the same day of the week as the initial reference day and allows more control over the distribution of the sample over days of the week.

Lastly, the Experience Sampling Method (ESM) already established and applied in a few countries may become more popular, if paired with new digital technology. In this method, eligible individuals are randomly notified by a beeper and, when signaled, record what they are doing and feeling. Participants typically respond to eight signals a day over the course of a week, which has the advantage of sampling over seven consecutive days rather than on a given day. The ESM has been used with diverse populations, including adults and adolescents. According to its authors, it is able to provide estimates of the amount of time adults watch television (Csikszentmihalyi and Larson 1987) and the amount of time adolescents spend on homework, socializing with friends, or being home alone. Much like time diaries, the ESM has been criticized for being too burdensome. That is, the time and cognitive demands made on the respondent are more excessive than the demands typically made by surveys. Critics have also suggested that individuals may underreport what they are doing simply because they do not wish to be interrupted. In the age of smart phones and ubiquitous text messages, however, electronic prompts may no longer be considered as intrusive as beepers used to be, in part also because the reminding and recording mechanisms can be merged into one familiar gadget.

2 Simpler, more affordable and more replicable time use surveys without significant loss of information

There are many reasons for developing simpler methods for collecting TU data that capture basic time use information with as little time and respondent burden as possible: high collection costs associated with field workers, respondent fatigue, high non-response rates especially when the respondent burden is high, and the opportunity cost of non-analysis of the data or analysis of only a small fraction of the data. To reduce the administrative and field costs of mounting a separate survey, many developing countries are already linking their time use survey to existing census surveys, labor force surveys, or other household surveys. This approach has the extra benefit of enriching the available information on respondents and their households. And it allows deeper analyses of individual behaviors and choices, with appropriate controls for background variables. Many countries have also eschewed the time-diary method for focused questionnaires that include only a selected list of activities. Choosing this list with a view to informing decisions and actions regarding a special issue of interest (e.g., care policy, women's employment) or an intended policy reform can provide such focus.

Within the interview-recall time diary method, there are several ways one can reduce the burden on respondents (United Nations Economic Commission for Europe 2013). One such approach is not to restrict the time slot for activities. In the Indian questionnaire, for example, activity time slots were not specified in advance. Instead, respondents were asked when they started and stopped doing a particular activity, thus, instead recording the duration of each "episode" of activity (Väisänen 2006).

Another approach is to use the UN Guide's light time use survey which uses pre-defined activity categories from which the respondents select the activities they were doing. The so-called light diary does not require the respondents to write their activities into the diary in their own words, but only to select activity categories from the given list for different time spells. This method lowers the cost of the survey because the expensive and laborious coding stage is not needed, and it can use

a web application. Its drawback is the smaller number of time use categories, perhaps just 30 to 35 time use categories instead of 80 or more.

A third approach is to limit further the pre-defined activity categories to cover just a specific area of immediate policy interest. For example, the Cambodia TU module (in 2007-14 household surveys) includes questions only about time spent by household members in primary and secondary occupations and collecting water and firewood. One drawback of customizing time use surveys around a specific issue is that other issues of interest will certainly emerge in the future, perhaps demanding a revision of the survey instrument and thus making more difficult, if not impossible, comparisons of time patterns over time. Balancing survey costs against the benefits of a relatively all-purpose time use instrument is a challenge that time use advocates, designers and researchers must address.

Key Takeaway

High data collection costs associated with survey field work, respondent fatigue, high non-response rates, and the opportunity cost of non-analysis or little analysis of the data collected are good reasons to simplify the collecting and processing methods of TU surveys. The time use community has demonstrated time and again its willingness to innovate with respect to the design and implementation of time use survey instruments. With the rapid spread of smart technology even in low-income economies, there is high potential for using new means for collecting and improving TU data. Smart technologies allow interactive data collection methods without the travel cost, support for automatized data input, and new opportunities for nudging respondents to provide data. Although research for now suggests that the promise of these tools has not been realized, practice makes perfect and additional tweaks in the implementation design (e.g., adding incentive mechanisms for respondent uptake) can be made. Opportunities also exist to balance the goals of complete time records and harmonized activity codes against simpler or focused activity lists in order to accommodate the constraints on the financial and administrative resources of low- and middle-income countries. Ultimately, the useful test of a successful TU survey initiative may be that the data are relevant, collected regularly and reliably, and used to guide development policy.

The Policy Influence of Time Use Surveys

Data-to-policy framework

We developed a generic data-to-policy framework to guide the case studies and the analysis of lessons for policy. The framework, applicable to evidence that is generated by different data collection instruments, including TU surveys, does two things: First, it identifies the factors, represented in Figure 8, that influence the data-to-policy link. Second, it describes chronologically the steps that intervene between production and use of TU data, represented in Figure 9.

Data is used here broadly and is synonymous with evidence or facts that result from generating and analyzing data points from administrative data, surveys (including TU surveys), censuses or big data. Data can have a demonstrable influence on policy and, more immediately, on people's behavior (when it is disseminated to the public through various media). The framework shown below is restricted to examining data's influence on public policies. We recognize that policies, in turn, affect the data produced, often in direct ways since policymakers make data requests and approve data budgets. The focus of this report, however, is the presumably less straightforward, more circuitous route from data to policy and, more specifically, from TU data to a range of public policies.

The public policies most amenable to being influenced by TU data, and the ones that the case studies covered and that we were particularly interested in, include labor market and other social policies, including policies on children, youth, women, social safety nets, and national care policies.

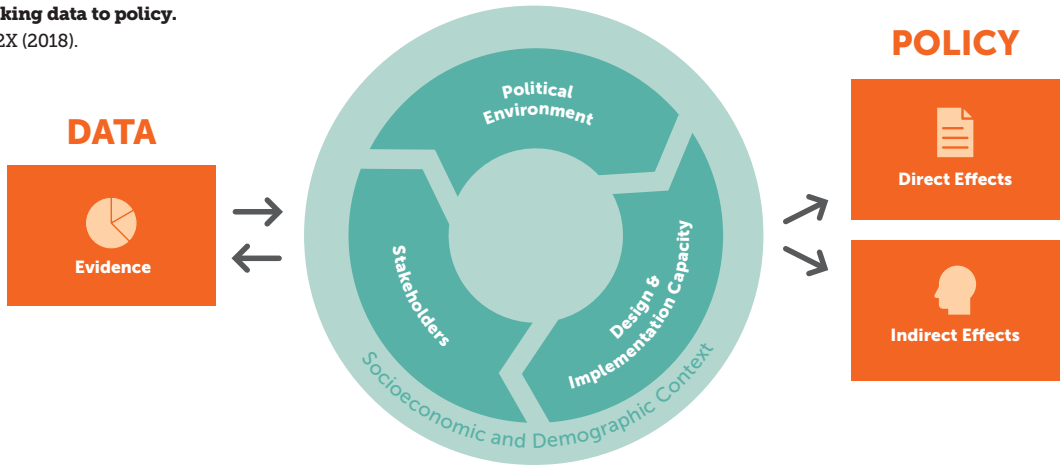
For data to influence policy, it needs to be "taken up" by policymakers or other actors (Lindquist 2001). Data uptake is the process of becoming aware of and accessing data outputs and results from the intersection of supply of data (from data producers) and demand for it (from data users).

What is policy?

Policy is defined as a "purposive course of action followed by an actor or set of actors" (Anderson 1975, in Pollard and Court 2005). This definition goes beyond documents or legislation to include processes and decisions, including agenda setting, policy formulation, decision-making, policy implementation and policy evaluation activities.

Factors that mediate the data-to-policy link and determine data uptake on the supply side include high quality data and effective strategies for communicating this data.[17] Individuals (both as independent agents and as part of advocacy coalitions), politics, and institutions interact with each other and mediate the process of data uptake. The enabling environment for the use of data as evidence for policymaking is defined, first, on the side of individuals, by the existence of powerful data stakeholders outside of government (in civil society, academia, and the private sector), and the nature and strength of internal government and external clients and advocates for the data. Second, stakeholders influence and are influenced by the political environment. The use of data for policymaking is an organic, political process. Policymakers' priorities and beliefs, the timing of the data release in the political cycle, and the strength of internal pressure and support—all help determine the use of data.

Figure 8. Linking data to policy.
Source: Data2X (2018).



The institutions that translate the political will and use the data for defining policy or designing programs are the third element and the linchpin that actualizes the link between data and policy. Data uptake depends on the design and implementation capacity of institutions, including the type of implementing agencies (for instance, line or coordinating ministries) involved in producing and using data. The budgetary, administrative, and technical capacity of implementing agencies also matters, as does the quality and quantity of service providers who will use the data to shape policies and programs. Lastly, data uptake depends on data (and gender data) literacy or capacity and overall data culture in the public sector and relevant private sector agencies. This includes trust between data producers and users, data transparency, and a history or built habits of data use.

Individuals, politics and institutions are influenced by the overarching "local" context, that is, the demographic, economic and social challenges that particular regions or countries face, which help define the relevance of data for policy purposes and whether the policy changes that the data addresses are incremental or transformative. Incremental changes are easier to endorse, adopt and implement than transformative ones (Díaz Langou and Weyrauch 2013).

Data's effects on policy can be direct, that is, data has an instrumental role in changing policies, or indirect, that is, data affects the understanding or conceptualization of policy issues; it broadens "policy horizons" but does not directly change policies (Lindquist 2001). Data's direct effects on policy include using data to monitor progress in implementing policies and evaluate policy impacts. New data insights may not result in specific policy changes but instead may influence policymakers' views of policy issues and the terminology they use. These changes, though more difficult to document, may have a longer-term impact on society when contrasted with a direct data impact on specific policies (Weiss 1999). Indirect effects of data on policy include influencing the discourses among stakeholders and the public at large, by disseminating findings and outcomes through the media, research reports, etc.

The process of data uptake and its translation into policy can be described with four consecutive stages, represented in Figure 9.

The case studies in Volume 2 all map the process of data uptake across these four stages that may culminate in the development of policy. Each stage addresses the following questions:

Identify and Prioritize: Who identified the need to implement a time use survey (a line ministry, a coordinating ministry, the NSO) and why (to help address gender or other data gaps, for advocacy and policy use, to comply with legislation, because it follows international best practices)?

Collect and Analyze: What survey instrumentswere used as well as how and why the instruments were chosen (standalone survey vs. module in household or other survey, categorization used, time frame, sampling strategy, and sample size)? Who collected the data and for whom? Who funded and how (with budgetary or extra-budgetary, internal or external funding source)? What type of analysis was undertaken and how was the analysis linked to the study objectives? What was the quality of the analysis? Did the analysis yield policy implications?

Figure 9. From data to policy: chronological steps.
Source: Data2X (2018).

Inform and Influence: How did time use data findings get disseminated, by whom and to whom? What role did different actors (civil society, government, data producers) play?

Develop Policy & Monitor Progress: Did time use data findings directly or indirectly influence policies? If yes, which policies? If not, what were some obstacles or constraints?

Country Case Studies

Eighteen country case studies, representing different world regions and economic groupings, were developed to track country experience with TU surveys and examine how countries have addressed methodological issues; assess the extent to which TU data has influenced policy in specific country contexts; examine the conditions that have facilitated this data-to-policy link; and identify ways to improve the collection of TU data in order to increase its usefulness as evidence for policymaking.

Following the data-to-policy framework, we analyzed whether TU data in these 18 countries had a direct policy influence, indirect policy influence, no influence or an unclear influence. Based on the information provided in each study, the coding of countries in Table 3 reflects the different levels of influence:

- Direct influence was coded where evidence that TU data influenced policy was supported by a government policy, plan, or action enacted or in preparation, or when TU data was used to monitor progress or evaluate policy impact.
- Indirect influence was coded when there was an indication supported by informant interviews, studies, reports, or press articles, that TU data had likely influenced "policy horizons." That is, the TU data helped shape values, beliefs, or mindsets of policymakers or the public (society) more generally.
- No influence or unclear category was coded when there was no traceable indication that TU data had been used, when there was evidence that TU data was underutilized, or when there was no way to assess data uptake with the available information.

Tracing the policy influence of TU data is often difficult. Table 3 below groups the 18 countries into these three categories. Analyzing the policy influence of data is often imprecise and hard to gauge partly because of the organic nature of the policy process and the varied, anecdotal, and often incomplete sources of information. It is easiest to trace impact when there is a specific use of TU data, for example, for monitoring and evaluating policies. It is most difficult to assert likely indirect influence. The grouping presented in Table 3 is, therefore, subject to revision as new information emerges.

Mindful of these caveats concerning the coding exercise, we found that 10 of the 18 countries showed TU data had exerted some policy influence, direct or indirect. Regional cooperation and the specific use of TU data to evaluate policies bolster policy use. Ten of 18 countries is a positive sign and a higher number than expected from the general review of the literature for this report (which instead underscores the theme of underutilization of TU data) and shows that, especially

Table 3. Extent of time use data's policy influence in 18 country case studies. Source: Data2X (2018

Direct Policy Influence	Indirect Policy Influence	No or Unclear Policy Influence
Albania	Mongolia	Chile
Cambodia	South Korea	Egypt
Colombia	Tanzania	Ethiopia
Finland		Ghana
Mexico		India
Moldova		Kazakhstan
Uruguay		Thailand
		South Africa

17 Quality data is data that is unbiased, rigorous, substantive, relevant, timely, actionable, easy to understand, cumulative, and easy to explain (Dhaliwal and Tulloch 2012).

to trace indirect influence, one needs to dig down deeply into different sources of information. Six out of the seven countries for which we are able to trace direct policy influence are in two regions that have a long history of conducting TU surveys, reinforced by regional cooperation. Using TU data to define, monitor, or evaluate gender equality policies is a main reason for the direct influence coding for Albania and Mexico. In Albania, one of the indicators identified by the government to monitor the National Strategy and Action Plan for Gender Equality (2016–2020) is the percentage of time women and men spend on unpaid work. In Mexico, TU data on the overall burden and unequal gender distribution of unpaid care work was used to develop the national Program for Gender Equality 2013–2018 (PROIGUALDAD), with the goal of increasing shared responsibilities within families and reducing families' unpaid care burdens.

In Cambodia and Colombia, instead, TU data were used to define policies regarding children. Data on time spent caring for children and the elderly influenced Cambodia's Policy on Alternative Care for Children (2006), which adopts minimum care standards for children, providing a baseline for residential and community-based childcare facilities. Data from the TU survey indicated that 9.7 percent of homes experienced barriers to accessing childcare for infants. This data point influenced the Colombian government's expansion of an early childhood development program (*De Cero a Siempre*) which is on track to exceed its goal of caring for more than 1.5 million children.

In Moldova, the 2011–2012 TU survey results influenced employment strategies. Both the gender equality and the national employment strategies (for 2017–2021) used TU data to justify innovative and flexible forms of employment for all and called for specific actions to increase women's labor force participation, including the provision of childcare centers in the workplace and the promotion of entrepreneurship.

Uruguay used information from different TU studies, starting with a 2003 TU survey of metropolitan Montevideo conducted by academia, to provide the basic rationale for a comprehensive National Care Policy (2015) that codifies the function of care under the law and underwrites facilities for childcare and care of the elderly. Finally, Finland exemplifies a country where successive TU surveys have been used to inform a range of different policies, including employment projects for rural women, early retirement policies, child and family policies, evaluation of cultural policies, and planning of TV programming schedules, among others.

Mongolia had planned to use TU data to monitor a National Program on Gender Equality, but there is still no official evaluation of the program that ended in 2015. This, plus evidence of data underutilization and the need for additional efforts to strengthen the use of the TU data, led to the coding of indirect influence for Mongolia.

Tanzania is a clear case of indirect policy influence as evidenced by the national debate (on work and idleness) that took place in the country after the TU data results were released. South Korea's indirect policy influence is evidenced by the many academics, research institutions, and international organizations which have relied on TU data to examine policy issues regarding care services and explain the determinants of female labor force participation, human capital accumulation, and economic growth (providing empirical evidence for policies to combat labor market discrimination).

Insufficient information to trace influence or underutilization of TU data describes the situation of the remaining eight countries. Among the countries with no or unclear influence is Ethiopia, where we know TU data was discussed in parliament, but we have no information on the outcome of this discussion. Another is Chile, where a national TU survey was only recently conducted (in 2015) and results released only in 2016. Underutilization of TU data is common among countries where we were not able to detect influence and countries where we did detect influence, underscoring the complexity of TU data, the lack of capacity to analyze the data for policy purposes and, more generally, the disconnect that often exists between data producers and data users. The next section uses the data-to-policy framework to analyze the factors that intervene and can help bridge this disconnect between producers and users.

Lessons about the policy influence of time use surveys

The case studies developed for this report were the main source of information used to derive lessons about the policy influence of TU data. The data-to-policy framework guided the analysis of this information. The lessons follow, grouped according to the framework's main categories.

Direct and Indirect Policy Influence

The TU data objective can define ex-ante the way TU data influences policy—indirectly, by changing policy horizons (knowledge, beliefs, values, "mindsets") or by more directly affecting policies. The nature of the data objective, when it is specified, drives the final outcome. Some countries conduct and use TU surveys to change policy horizons rather than affect direct policies, at least in the short term. Others field these surveys to inform specific policies. India's recent efforts in designing the 2018 national TU survey is an example of the former group of countries. Uruguay is an example of the latter. Colombia and Mexico illustrate a mix of both.

India conducted the last TU survey of six states in 1998-99 to estimate and value unpaid work and to better capture different forms of employment, given well-known limitations of labor force surveys in accurately recording the large proportion of informal workers in India's rural and urban economy. Although this information is in principle policy relevant, the data exercise was not meant to change mindsets or influence specific policies. This has now changed, and the design of the 2018 India TU survey takes explicit account of the data's potential use for broadening policy horizons. Uruguay, instead, used information from successive TU data (specifically the 2003 survey and the 2007 module) to justify care legislation and a national care plan, adopted by the government in 2015. In Uruguay, TU data was instrumental in defining a specific government policy.

Colombia evolved from using TU data to create satellite accounts (and influence mindsets) to using the data to inform a national care policy in preparation. The Colombian law on the care economy (2010), which mandated conducting a standalone TU survey (carried out in 2013), was enacted to influence mindsets but also served as the starting point for policy development. Mexico used TU data to create satellite accounts to value the production of household services not included in national accounts, and, therefore, demonstrate the importance of household productive activities (mostly done by women) to the wider economy. For instance, in 2014 this account showed that the economic value of unpaid household and care work represented 24.2 percent of GDP. But Mexico also used TU data to evaluate *Oportunidades*, the nationwide conditional cash transfer program for the poor, and showed that 12- to 18-year-old beneficiaries spent double the time studying when compared to non-beneficiaries, justifying the government's investment in the program.

Another way that TU data directly influences policy is when it is used to evaluate policy effectiveness. In addition to Mexico, Albania, Cambodia, and Finland have used this data to evaluate government policies. Finland is particularly notable in this regard. It has used TU data to assess the effectiveness of numerous government policies, including social security, education, and care policies. Mongolia intended to use TU data (gathered in 2012 and 2015) to monitor the progress of the National Program on Gender Equality. It remains unclear, however, if the data were used for this purpose, although the surveys do provide information relevant to evaluating this program's progress.

Satellite accounts that use TU data to calculate women's unpaid work contributions to GDP may have influenced policy horizons but have yet to change policies. In contrast with environmental accounts, which have led to national and global action on the environment, policy changes have not followed in countries, mostly in Latin America and Eastern Europe, which have used TU data to calculate satellite accounts. These accounts have measured the size of the unpaid work sector, identified who does the producing (mostly women), who finances this production (mostly women) and who benefits (society). But they have not been followed by specific policies to address women's care burdens. Partly, this lack of policy formulation can be explained because the economic value of women's unpaid work in national accounts provides a notional number but does not respond to a specific policy question.

TU data is a major part of the data needed to develop policies regarding the care economy. But other types

of data are required as well, as the case of Uruguay shows. The overall objective of a national care policy is to define and implement public policy to socialize and/or move to the market aspects of care work in cost-effective ways, alleviating women's unpaid care work and providing universal access to quality child and elder care; defining expanded roles for government and the private sector; and improving the conditions and quality of paid care workers. TU data provides a main rationale for the need for government action, and guidance in terms of population groups in most need, but requires additional information for designing care policy components that only specific studies can address. Uruguay conducted a number of surveys and diagnostic studies. They gathered information on childcare centers and homes for the elderly, and included an opinion survey on people's perceptions of care, as inputs to develop the National Care System.

Data Supply

Whether the TU data is demand- or supply-driven indicates the extent to which the data is likely to be used in public policies or programs. If TU data is collected to fill gaps in official statistics, as it has been in the cases of Albania, Chile, and Kazakhstan, for instance, or is driven mainly by availability of outside funding, their likelihood to influence public policy, at least directly, is reduced. TU survey data has become a key component of the statistical tool set of NSOs, alongside household surveys, labor force surveys, and budget and expenditure surveys. Completing the official set, rather than an immediate policy need, has sometimes driven the decision to implement a TU survey. Albania, however, used TU data to inform its employment policy and plans to use this data to monitor the National Strategy and Action Plan for Gender Equality (2016–2020), showing that motivations for data use can evolve over time. If policymakers and government agencies gain a better understanding of gender concerns and issues, particularly on care provisioning, the likelihood of TU survey data being used for policymaking and analysis could grow.

Good dissemination of quality TU data improves policy uptake. This entails disseminating easy to understand and easy to explain TU data. In Moldova, the initial demand for a TU survey (conducted in 2011–2012) came from the Ministry of Labor, Social Protection and Family. The government made dissemination a high priority, producing a series of analytical briefs, with figures and clear explanations, as well as infographics that showed a clear link to policy. As a result, findings from the survey have had a traceable impact on labor policy. The 2017–2021 Labor Strategy quotes TU data to justify the need for innovative and flexible forms of employment in the context of interventions to increase women's labor force participation.

The number of reports, publications, press articles, and presentations, based on TU data reflects the usability of the data and suggests indirect policy influence. The number of research publications from Colombia, Finland, and South Korea that have used TU data illustrate the TU data usability and indirect policy impact. Prominent articles in the Chilean press in 2016 and 2017 pick up main results from the first nationally representative TU survey (2015) and point to potential indirect policy influence, although at the time we did the case study it was too soon to judge. In Ethiopia, this potential indirect policy influence is suggested by the fact that the Ethiopian parliament requested an in-depth analysis of gender-specific time use and time poverty using data from the 2013 TU survey, the first TU survey the Ethiopian NSO has conducted, which was co-financed by the government and UN Women.

Stakeholders

Global Gender Equality Frameworks and Agendas. The UN Beijing Women's Conference and Platform for Action (1995) called for and validated the implementation of TU surveys for gender equality objectives across countries and regions, including Finland, South Africa, South Korea, and Thailand. In Latin America, international agencies (UNFPA, UN Women, ECLAC, & ILO), fulfilling the Beijing mandates, played a significant role in advocating for the need for TU data at the national level. This external influence has legitimized the need for TU data but for a direct link to policy, the country government needs to appropriate or "own" this data and use it to shape national agendas or strategies.

Regional Cooperation. In addition to the UN Beijing framework, in both Latin America and Eastern Europe regional cooperation was key to the development of TU surveys. It improved their quality and identified categorizations that applied to the regional context as well as allowing for comparability (CAUTAL, HETUS). The Working Group on Gender Statistics (WGGS) under the auspices of the Statistical Conference of the Americas of ECLAC (SCA-ECLAC) has given the regional

initiative a framework for sustainability and technical focus. In the ECA region, TU data is a recurrent theme of the regularly held UNECE Work Sessions on Gender Statistics, which bring together development partners, country representatives, academics, and civil society. The importance of regional cooperation is underscored by the fact that six of the seven countries that showed evidence of direct policy influence were from this region.

Engaging lawmakers can serve as a medium to institutionalize and prioritize TU surveys. In LAC countries, the process of passing laws requiring the collection and analysis of TU data on a regular basis has both institutionalized these surveys and highlighted the importance of the caring economy. In civil law countries, the codification of TU data within the law is one of the only ways of ensuring resources are available on a regular basis to implement modules or stand-alone surveys.

Civil society and academia can be powerful, and in some cases non-partisan or impartial, allies in advocating for TU data and care policies. In Chile, civil society played a pivotal role. Academia did the same in Uruguay. In Moldova both civil society organizations and academia had important roles. Dissemination of TU findings to civil society and academia can help advance the national discussion.

Politics

Government buy-in matters. For data to be linked to policy, it needs to be adopted, or "owned," by the country government so it has the opportunity to influence policy. Demand and use by other actors (i.e., academia, civil society, external actors) is important, but more likely to have an indirect impact on influencing policy horizons instead of directly influencing policy changes. Funding the TU survey or module indicates most directly government buy-in for the data. When the TU survey initiative responds to external pressures and external actors fund it, an additional step of domestic uptake or "ownership" often needs to take place before the TU data influences policy. This was likely the case with many of the TU studies in Africa that were funded by outside donors. On the other hand, the Colombia, Finland, and Mexico TU surveys, which resulted in policy initiatives, were funded by specific government budgets.

TU data has little influence on policy when gender-blind poverty reduction strategies drive the government agenda. In South Africa and in Tanzania, the Poverty Reduction Strategy Paper (PRSP) framework justified carrying out a TU survey but did not make unpaid care work a subject for public policy, limiting the TU data's potential policy influence. An independent Sciences-Po (2005) report on the policy use of a 1998 TU survey in Benin highlights a striking absence of references to TU data in a variety of Benin's national reports, including the 2002 PRSP, which, remarkably, calls for Benin to produce sex disaggregated data, ignoring the available TU information. This report attributes the TU survey's lack of influence on Benin's PRSP to perhaps a lack of awareness or confidence in the TU data. However, we believe more generally that TU data likely failed to inform policy in countries that in the last couple of decades have developed PRSP frameworks to guide their policies, because these frameworks overlooked the economic contribution of, and the issues surrounding, unpaid household and care work.

The timing of data production matters for policy uptake. Data produced and reported at the start of an elected government is more likely to influence policy than data that is reported at the end of the government. The 2015 Chile TU survey results were released in late 2016, at the end of a government period. Therefore, the TU survey has a lower chance of directly affecting policy.

Institutions

The nature of the link between data user and data producer is key. There is a direct link between data and policy, facilitating policy uptake, when a line ministry—with a clear mandate, line responsibilities, and an assigned budget—requests the data (and sometimes pays for it). This is the case, for instance, with health surveys used by the health ministry to define health policy and labor force surveys used by the labor ministry to define labor market policies. Coordinating ministries, such as the social development ministry or the women's ministry, are successful to a lesser extent since coordinating ministries do not usually have line authority and line budgets, and instead negotiate with line ministries for both.

In Uruguay, the National Care Plan mandated budget contributions from line ministries to the Social Development Ministry, the coordinating ministry in charge of implementing the plan. In Finland, a number of different ministries and government agencies, which would become the principal users of TU information, helped fund the most recent TU survey. These agencies

included the Social Security Institution that wanted the information to assess the effects of time leave policies on families, the Ministry of Education and Culture that intended to evaluate cultural policies, and the National Broadcasting Company that wanted to plan TV program schedules. Funding the TU survey with a government budget contributes to ownership and strengthens the production-to-usage link.

Inclusion of line ministries in the design and analysis of TU surveys helps establish the data-to-policy link. This inclusion, through formal working groups or other coordinating bodies, helps build ownership of data and creates a seamless link between production and analysis of data and resulting policy (examples of this are Colombia, Moldova, Uruguay, and to a much lesser extent Mexico). The participation of line ministries, particularly those tasked with implementing care and social protection (and labor) policies, facilitates linking data to policy.

Formal and informal alliances between NSO and women's ministries/institutes have facilitated data production, but not much data use. Alliances between NSOs and women's government agencies have helped institutionalize TU data production but played a lesser or no role in data usage. Women's ministries, institutes, or councils have played an important role in most countries reviewed in helping NSOs to institutionalize TU data production. It does not necessarily follow, however, that these agencies have become a main user of this information or motivated others in government to use TU data. Lack of capacity to analyze and use TU data for policy purposes seems to have contributed to these agencies' low demand for TU information. Examples include Chile, Mongolia, South Africa, South Korea, Tanzania, and Thailand.

Dialogue and consultation with researchers and giving them access to TU data can increase TU data use for policy analysis. Research findings enable the growth of an evidence-based culture.

An evidence-based culture nurtures the use of TU data for policy. In Mongolia two relevant line ministries, the Ministry of Social Welfare and Labor and the Ministry of Health, have been closely involved in reviewing the questionnaires for the TU surveys conducted by the NSO (with technical support from UNDP) and funded by the government budget. Mongolia had a pilot in the year 2000 and three consecutive TU surveys, in 2007, 2011, and 2015. However, despite this internal ownership, demand for TU data is the lowest among all other available surveys (for instance, in 2015, there were 185 downloads for the TU survey versus 3,281 for the Household Socio-Economic Survey and 18,517 for the Labor Force Survey), suggesting that policymakers and the public underutilize TU data. Most users in Mongolia use data for research, not for policy, which would argue that an evidence-based culture for policymaking has yet to flourish, and that researchers are less familiar in general with the policy relevant research opportunities TU data offers.

Context

Context matters and locally relevant policy issues influence the way TU data is analyzed and utilized. Context-specific, locally relevant policy issues influence which among the many subjects TU data covers are analyzed, disseminated, and picked up by policymakers and the public. For instance, in Cambodia, data from the first TU module (included in the 2003 Socio-Economic Survey) provided information on child labor, an ongoing problem in Cambodia's post-war economy, which had already been the focus of study in a joint ILO, UNICEF, and World Bank (n.d.) research project called "Understanding Children's Work." In Cambodia, the case study notes, "the TU survey put flesh on bones of policies related to child labor and gender equality."

In Chile, TU data has been used by feminist advocates (Comunidad Mujer) and picked up in the mainstream press (El Mercurio, La Tercera) to underscore women's unpaid work burdens in comparison to men's, on the assumption that these burdens influence women's undesirably low labor force participation rates—a government concern for some time. In Tanzania, a largely rural economy with a significant proportion of the labor force in subsistence agriculture and with low productivity rates, the TU data that drew the most public and press attention was men's reported low time spent in paid employment (4 hours daily), which led to calls by politicians to restrict beer sales and gambling during working hours. No policy response, however, seems to have been enacted following these calls. Context, in summary, provides the relevance test for TU data, especially TU data that is generated as result of external mandates or to fill gaps in official statistics.

Conclusions

Time use studies have had a long history of depicting people's daily lives and helping us to understand the impact of major shifts in home technologies, demographic patterns, employment and labor policies, and gender norms. These studies date back to the 1920s and 30s when information was sought on how certain groups of people, such as farmers or housewives, conducted their day-to-day lives. The increase in TU data collection and studies since the 1980s is linked to the development of the field in time use research; the UN international conferences on women that called attention to women's full work burden at home and in jobs; and the growth of new household economics, gender and development, and feminist economics fields, which analyze continuing transformations in household economics and gender relationships. In this report, we document the remarkable uptake of TU surveys in developing countries as part of their data development agenda.

TU surveys have been fielded in 88 countries worldwide, at least once and more than once in a growing number of countries. Data collection methods, while still varied in approach and frequency, continue to improve, adapting to growing implementation and analytical capacities within countries. These methods have become increasingly systematized within national statistical agencies and have helped build growing administrative and political support for collecting this type of data in countries over time. Through the efforts of multinational organizations like the UN, regional organizations, and donor agencies, the surveys have been using more harmonized time use codes, which allow for more cross-national comparisons of time use patterns. Indeed, TU data have become part of the body of evidence that describes and tracks socioeconomic ills and progress.

Despite significant developments in TU survey methods over the decades, our review has identified key areas for further improvements in the way TU surveys are designed and conducted. Improvements are needed to reduce their cost and respondent burden, while increasing their ability to capture usually "invisible" activities (such as care and secondary activities) and "invisible" doers (such as young children, domestic workers, and unpaid caregivers). They can help reveal the impact of new types of work and employment and of new home and personal technologies on people's daily life. From our review of these surveys, we offer the following lessons:

1. Balance the goal of having complete time records using harmonized activity codes against the goal of reducing survey costs by using simpler or focused activity lists. While it may reduce survey costs, a shorter, more focused activity list in a TU survey is very likely to be at the cost of missing important activities. Ultimately, however, the useful test of a successful TU survey initiative is that the data are relevant, collected regularly and reliably, and useful to guide development policy. Harmonizing the time codes of selected activities globally, such as market work, while using country time codes for unpaid work activities, is a hybrid approach that has allowed countries to supplement their labor surveys while focusing on those housework or care activities that are of special policy interest. We have seen Cambodia and LAC countries use this approach.

2. Resolve important methodological issues about measuring unpaid employment and household work. Because the type and intensity of these activities can vary across the year, issues that need to be addressed include accounting for differences in activities between weekdays and weekends, seasonal variations in activities, and the school calendar. Other methodological concerns arise from the high prevalence of unpaid work in developing countries, the lack and limited use of timepieces at home, low literacy levels, and complex household structures, all of which make it more costly to implement a self-recorded time use diary that is guided by a long, detailed list of activities. The choice of method should be guided by the availability in the country of the capacity to collect, verify, and analyze TU data.

3. Consider social norms and household structures in selecting the survey respondent and interpreting time use patterns. In other words, situate the survey respondent clearly within the relationships in the household, and watch out for potential sources of response biases. This is helped by linking TU data to information on contextual variables, such as location of activities, education levels, employment status, type of employment, ethnicity or race, and household structure. Conventional sampling strategies also ignore interhousehold transfers of services and the presence of temporary or seasonal household members (such as fostered-in children) and domestic workers, so some questions that can reveal the real household

composition and structure would be helpful in interpreting time use patterns.

4. Find satisfactory solutions to measuring and reporting simultaneous or secondary activities that do not overburden respondents. Multitasking is the norm rather than the exception with respect to household work. For example, childcare and other care work that are undertaken simultaneously with primary activities are easy to underestimate. The ability to collect data on secondary activities depends on the survey method and the design of the survey instrument.

5. Consider fielding linked, repeated surveys over time as these increase the potential policy and research benefits of TU data. Given the increase in the uptake of TU surveys, with time, countries will have years of data they can use for more in-depth analysis of, say, trends and patterns in market work or care work not available from labor force surveys.

This report also documents the policy uses of a number of TU surveys. Historically, TU surveys were first used in the 1930s and 1940s to program service delivery (agricultural extension and radio programming); it was only in the 1990s that the women's movement embraced TU surveys to measure and recognize the unpaid care and housework women do and influence development policies in these areas.

Eighteen country case studies commissioned for this report, show the complex web of factors that interact and mediate the use of TU data for policy, which complicate the task of tracing this type of data's policy impacts. Nevertheless, the fact that 10 of these studies offer evidence that TU data helped to shape development policy, directly or indirectly, is encouraging.

Factors that stand out across these "best performing" countries include having a regional history with implementing TU surveys and regional collaboration through the UN and other regional bodies (including technical and financial support); the specific use of TU data to evaluate public policies which also suggests an established data culture in policymaking; active support for TU data access and use by civil society and academic stakeholders; and TU data's ability to provide quantifiable measures of policy issues (regarding children, women, work, care provisioning, employment, and others) relevant to the "local" country situation. Context does matter.

Country experience with the policy process is unique, however, and factors that facilitate data uptake, for instance, domestic financing of TU data, are only part of the equation and can be reinforced or upended by other factors, such as the active or passive role of civil society and academia, or a strong or weak data culture in policymaking. This report's data-to-policy framework helps to identify the different factors at the level of individuals, politics, and institutions that need to align and reinforce each other for countries' successful uptake of TU data.

Behind the encouraging signs that TU data help to shape policy, however, is a consistent theme of the underutilization of this type of data across countries and regions, which emerged in most country case studies. Partly, this is because TU surveys are complex data collection instruments. They measure complex activities with unclear boundaries and require significant effort from both respondents and interviewers. It is not easy to analyze the large amount of information they produce, and many countries still lack the statistical capacity to analyze this information for policy purposes. Perhaps equally importantly, many countries lack the ability to present the information in compelling, easy to understand ways.

The data underutilization is also due in part to a more general disconnect between data producers and data users. While data production requires independence and lack of interference and data manipulation, better communication between producers and users of statistical information on, among other things, which subjects and questions are policy relevant and how the data can be presented in more useful ways should go a long way toward helping address TU data's underutilization.

International and regional development agencies have important roles to play in helping bridge this divide. Thus, another recommendation is to work with policy stakeholders, statistics agencies and time use researchers to identify the policy issues and questions that TU data can help answer and the data and information needed to address those issues and questions. For example, if TU survey data has the potential to evaluate the impact of employment or labor policies, it would be good to link the TU survey design and data collection with that of the labor force survey.

These methodological and data usage-related suggestions, along with the call for better communication between producers and users of data, should significantly improve the TU data benefit/cost ratio. The international and regional development agencies need to continue playing their critical coordinating role and enhance their support for the main stakeholders (government, academia, and civil society) at the country level.

Increasing focus and placing importance on building more inclusive societies, with better educational opportunities for girls and equal opportunities for women in the workplace, should further fuel and justify the use of TU data for policy. In particular, the tensions in poor settings between the need for caregivers at home for the very young, the elderly, the sick, or people with disabilities, can pose difficult choices for girls and women, between schooling for girls and paid work for mothers. TU data are uniquely suited to alert us to these tensions and tradeoffs, and provide evidence to design cost-effective solutions that both address the demand for care in the household and expand educational and job opportunities for girls and women.

Annex

Inventory of Time Use Surveys by Country

Country	Year	Reference Period/Period	Type of Survey	Age range	Sample Size	Type of sample**	Survey instrument	Mode	Is data on simultaneous activities collected?	Classification
					Europe					
Albania	1996	—	Pilot	10+	1,013 individuals; 249 households	Eligible household members	Diaries	Self-complete	—	HETUS
	2010–2011	1 weekday & 1 weekend	Independent	10+	2,250 households	Eligible household members	24-hour diary (10-minute intervals)	Self-reporting	Yes	HETUS
Austria	1981	—		19+	21,928 individuals	Random sample	—	—	—	—
	1992	Same day	Independent	10+	25,233 individuals	3 regions	24-hour diary	Self-complete	Yes	—
	2008–2010	Same day	Independent	10+	8,200 individuals	National	24-hour diary	—	Yes	HETUS
Belgium	1966	—	—	19–65	2,077 respondents	National	—	—	—	—
	1998–2000	1 weekday & 1 weekend	Independent	12–95	8,382 individuals; 4,275 households	All eligible	2 diaries	—	Yes	HETUS
	2005	—	Module of Expenditure Survey	12+	6,400 individuals; 3,474 households	National	24-hour diary	—	Yes	HETUS
	2013–2014	1 weekday & 1 weekend day	Module of National Labour Force Survey	15+	5,559 individuals; 2,744 households	National, all eligible	14-hour diary for working/ school day & one diary for a weekend day	—	Yes	—
Bulgaria	1996	—	Independent	10+	548 individuals, 207 households		Diary	—	—	HETUS

	2001–2002	1 weekday & 1 weekend day	Module of HH survey	10+	7,787 individuals; 3,132 households	National, all eligible	24-hour diary - 1 week day & 1 weekend day	—	Yes	HETUS
	2009–2010	—	Independent	10+	5,503 individuals in 3,132 households	—	—	—	—	HETUS
Denmark	1964	—	—	—	—	—	—	—	—	—
	1975	—	—	—	—	—	—	—	—	—
	1987	—	—	16–74	4,956 individuals interviewed; 3,584 diaries	Stratified random national sample	Diary (15-min time slots for full 24 hour period) and telephone interviews	Telephone interviewing and postal	—	—
	2001	—	Independent	16–74	2,739 interviews; 4,108 sampled diaries; 2,516 partner diaries	National	Questionnaire; workday and weekend diary (10-minute intervals) + corresponding married/ cohabiting diaries		Yes	—
	2001	—	Time Budget Survey; Independent	12+	6,661 households	—	Diary	—	Yes	—
	2008–2009	Same day	Module of Expenditure Survey	18–74	6,091 individuals	National	24-hour diary	—	—	HETUS
Estonia	1996	—	Pilot	10+	—	—	Diary	—	—	—
	1999–2000	—	Independent	10+	5,728 individuals	National	Two diaries	—	—	HETUS
	2009–2010	—	Independent	10+	7,000 individuals	National, all eligible	24-hour diary	—	Yes	HETUS

Finland	1979	Same day	—	10–64	12,057 diaries from 6,057 individuals	—	Interviews - 2-day diary (30-min. intervals from 12–5 AM, 10-min. intervals from 5 AM onward)	Face-to-face	Yes	—
	1987–1988	Same day	—	10–95	15,352 diaries in sample; 15,219 "good" diaries	—	Interviews - 2-day diary (30-min. intervals from 12–5 AM, 10-min. intervals after 5 AM)	Face-to-face	Yes	—
	1999–2000	1 weekday & 1 weekend day	Independent	10+	5,332 individual repondents; 4,800 households eligible	All eligible	2 diaries (10-min intervals)	Self-complete	Yes	HETUS
	2009–2010	—	Independent	10+	3,795 individuals; 4,499 households	National, all eligible	24-hour diary	—	Yes	HETUS
France	1966–1967	—	Part of international study of time budgets	—	—	—	—	—	—	—
	1974–1975	—	Module	18+	10,000 households	Urban areas	1-day diary	—	—	—
	1985–1986	—	Independent	15+	16,000 households	1 sampled per household + 1 partner where applicable	24-hour diary	—	—	—
	1998–1999	—	Independent	15+	15,541 individuals; 12,000 households	—	24-hour diary	—	—	HETUS
	2009–2010	—	Independent	11+	15,300 individuals; 16,600 households	1 sampled per household+ 1 partner where applicable	One questionnaire on long-term or rare activities; one diary (09:00 pm to 12:00 am); one module on decisionmaking within couples	—	Yes	HETUS

Germany	1991–1992	—	Independent (Time Budget Survey)	12+	7,200 households	—	24-hour diary, 2 days, 5-minute intervals	—	—	—
	2001–2002	—	Independent	10+	11,919 individuals in 5,443 households	National, all eligible	24-hour diary, 10-minute intervals	—	Secondary activities	HETUS
	2012–2013	—	Independent	10+	12,000 individuals in 5,000 households	National	Three 24-hour full diaries	—	—	HETUS
Greece	1996	—	Pilot		—	—	—	—	—	—
	2013–2014	—	Independent	10+	3,368 households	National	Diary	—	Yes	HETUS
Hungary	1976–1977	Different days of the week	Independent	15–69	27,607 diaries	—	4 diaries- 1 per season	—	—	—
	1986–1987	Different days of the week	Independent	15–79	40,000 diaries	—	4 diaries- 1 per season	—	—	HETUS
	1993	Different days of the week	Independent	18–79	11,174 diaries	—	1 diary on one pre-designated day	—	—	—
	1999–2000	Different days of the week	Independent	15–84	43,166 diaries	—	4 diaries- 1 per season	—	—	—
	2009–2010	Pre-designated day/1 weekday & 1 weekend	Independent	10–84	7,589 diaries (for those 15–74)	—	Diary	—	—	—
Ireland	2005	1 weekday & 1 weekend	Pilot	18+	1,000 individuals; 1,128 households	National	24-hour diaries	Self-complete	Yes	Ad hoc detailed
Italy	1988–1989	1 weekday & 1 weekend	Module	3+	38,110 individuals in 13,729 households	National	2 diaries	—	—	HETUS
	1996	1 weekday & 1 weekend	Pilot	3+	645 individuals in 196 households	All eligible	2 diaries	—	—	HETUS

	2002–2003	—	—	15+	60,000 individuals in 24,000 households	—	One 24-hour diary	—	—	HETUS
	2008–2009	—	—	3+	55,000 individuals in 25,000 households	National, all eligible	One 24-hour diary	Parents help younger children complete their diaries	—	HETUS
Latvia	1972	1 week	Independent	12+	—	Sample from 2 towns: All eligible household members (no single parent families included)	1 diary	Self-complete	—	—
	1987	1 week/period 04:00-00:00	Independent	12+	2,000 sampled respondents	Sample from 2 towns: All eligible household members	1 week diary covering 5-minute intervals	Self-complete own words	—	—
	1996	1 weekday & 1 weekend/ period 04:00-00:00	Pilot	10+	2,131 individuals	National	3-day diary	Self-complete	—	—
	2003	1 weekday & 1 weekend	—	10+	3,804 individuals in 1,469 households	National	2 diaries	—	—	HETUS
Lithuania	1997	—	Pilot	10+	626 individuals, 199 households	—	Diary	Self-complete	—	HETUS
	2003	1 week day & 1 weekend day	Independent	10+	3,713 households sampled: 2,164 participated in survey	—	24-hour diary in 10 minute intervals	—	—	HETUS

Moldova	2011–2012	2 randomly designated days: 1 weekday & 1 weekend day	Independent	10+	15,600 households sampled: 10,642 participated in survey	Population of the country living in private households (Covers the territory of the country, except for the territoriy from the left side of the River Nistru and Bender municipality)	24-hour diary: 1 day 10-minute intervals	—	Yes	HETUS
Netherlands	1975	—	Independent	12+	—	National, all eligible	—	—	—	—
	1985	—	Independent	12+	—	National, all eligible	—	—	—	—
	1987	—	Pilot	12+	6,668 individuals in 3,817 households	National, all eligible	—	—	—	—
	1990	—	Independent	12+	—	National, all eligible	—	—	—	—
	1992	—	Pilot	—	—	—	—	—	—	—
	1995	—	Independent	12+	—	National, all eligible	—	—	—	—
	1997	Previous day	Module	12+	5,000 individuals approx.	National, all eligible	Diary in 15 minute intervals	Self-complete	—	—
	2000	—	Independent	12+	—	National, all eligible	—	—	—	—
	2001	1 day	Independent	12+	5,717 individuals	National, all eligible	Diary	Self-coded activities using a precoded 7-week diary format	—	—
	2003	—	—	12+	—	National, all eligible	—	—	—	—

	2005	24-hour	Standalone	12+	5,950 individuals	National, all eligible	1 week diary	—	—	—
	2006	—	—	10+	3,041 individuals	National, all eligible	1 week diary	—	—	HETUS
	2011–2012	1 weekday & 1 weekend	Independent	10+	2,000 diaries approx.	National, all eligible	24-hour diaries	—	Yes	HETUS
Norway	1971–1972	—	Independent	15–74	5,215 individuals	National	Diary	—	—	—
	1980–1981	—	Independent	16–74	5,049 individuals	National	Diary	—	No	—
	1990–1991	—	Independent	16–79	4,862 individuals	National	Diary	—	Yes	—
	2000–2001	—	Independent	10–79	3,211 individuals	National, all eligible	Diary	—	—	HETUS
	2010–2011	—	Independent	9–79	3,975 diaries	National, all eligible	24-hour full diary	—	—	HETUS
Poland	1968	—	—	—	—	—	—	—	—	—
	1976	—	—	—	—	—	—	—	—	HETUS
	1984	—	—	—	—	—	—	—	—	—
	2003–2004	—	Independent	15+	25,200 individuals; 10,300 households	National, all eligible	24-hour diary	—	Yes	HETUS
	2013	1 weekday & 1 weekend	Independent	10+	28,209 households	National, all eligible	24-hour diary (10 minute intervals)	—	Yes	HETUS
Portugal	1999	—	Independent	15+	8,133 individuals	National, all eligible	—	—	—	HETUS
Romania	2000	1 weekday & 1 weekend	Independent	10+	9,018 dwellings	—	Diary and Interview questionnaire (24 hours over 2 days)	Self-complete diary and interview	—	Eurostat Classifications

	2011–2012	1 weekday & 1 weekend	Independent	10+	—	National, HH members randomly selected	Diary and Interview questionnaire (24 hours over 2 days)	Self-complete diary and interview	Yes	HETUS
Serbia	2009	—	Pilot	15+	477 individuals in 160 households	National, all eligible	24-hour diary	—	—	—
	2010–2011	—	Independent	15+	2,340 households	National	24-hour diary	—	Yes	HETUS
Slovenia	2000–2001	1 weekday & 1 weekend	Independent	10+	4,500 households	National, all eligible	Questionnaire and 24-hour diary	—	—	—
Spain	2002–2003	—	Independent	10+	46,774 individuals; 23,880 dwellings	National, all eligible	Diary	—	Yes	HETUS
	2009–2010	—	Independent	10+	19,295 individuals; 11,538 dwellings	National, all eligible	Diary	—	Yes	HETUS
Sweden	1990–1991	—	Independent	20–64	3,943 individuals	National	Diary	Leave behind diary	—	—
	2000–2001	—	Independent	20–64	4,500 individuals	National	Interview and diary	Leave behind diary and interviews for individuals and households	Yes	—
	2000–2001	—	Independent	20–84	3,998 individuals	National, all eligible	Diary	—	—	HETUS
	2010–2011	1 weekday & 1 weekend	Independent	15–84	6,477 diaries	National, all eligible	2 diaries	—	Yes	HETUS
United Kingdom	2000–2001	—	Independent	8+	10,366 individuals	All eligible random selection	Diary	—	—	HETUS

	2001	—	Independent	8+	10,500 households (hh questionnaire) 61% response rate; 14,400 households sampled; 28,800 households sampled for diaries	National, all eligible	Diary	—	Yes	HETUS
	2005	—	—	—	4,941 diaries	—	—	—	—	HETUS
Former Yugoslav Republic of Macedonia	2004	—	—	10+	2,000 households	—	—	—	—	—
	2009	—	Independent	10+	2,016 households	—	24-hour diary	—	—	HETUS
	2014–2015	—	Independent	10+	2,080 households	All eligible	—	—	—	HETUS
Latin America										
Argentina	2005	Random day	Module in permanent HH survey; Survey of Time Use (EDT) and Volunteer Activities	15–74	1,000 dwellings (2,100 persons)	Buenos Aires	Retrospective diary (30 min intervals)	—	Yes	Ad hoc detailed
	2010–2011	—	Independent	15+	1,000 dwellings	Rosario-Santa Fe Eligible household members	Diary	—	—	—
	2013	—	Module	18+	65,352 individuals	Towns of 2,000+ people	Stylized diary	—	No	—
Bolivia	2001	Random day and previous day	Module in permanent HH survey	7+	—	—	Questions	—	—	—

	2010–2011	—	Module	10+	5,744 dwellings	—	Diary (10 min intervals)	—	—	Bolivian Classification of Time-Use Activities (CATBOL) and Classification of Time-Use Activities for Latin America and the Caribbean
Brazil	1992	Random day	Questions in HH survey (PNAD); Standalone	10+	—	—	Diary (15 min intervals)	—	—	ICATUS
	2009	—	Module in pre-test PNAD Continuous 2009	10+	10,092 households	5 federal units coverage- 1 respondent in each HH	24-hour diary	—	Yes	ICATUS
	2012		—	10+	—	National	Questions	—	—	—
Chile	1999	1 weekday and 1 weekend day	Independent	15+	2,300 cases	City of Santiago	24-hour time diary- closed set of 48 categories	—	Yes	—
	2007–2008	Previous day	Independent	12+	1,571 dwellings	Greater Santiago	Retrospective diary (30 minutes)	Interview recall method	Yes	ICATUS
	2015	1 weekday and 1 weekend day, over ½ hour intervals	Independent	12+	11,623 urban households	National	Stylized diary analogue using activity list (activity questionnaire)	Interview recall method	Yes	Adapted from CAUTAL (2015)
Colombia	2007	—	Module in HH survey	10+	—	All eligible	List of activities	Interview	—	CAUTAL and ICATUS
	2008	—	Module in HH survey	10+	—	—	—	—	—	CAUTAL and ICATUS
	2009	—	Module in HH survey	10+	62,000 households	—	Stylized diary analogue of 83 activities	Interview recall method	—	CAUTAL and ICATUS
	2010	—	Module in HH survey	10+	—	All eligible	—	—	—	—
	2012	—	Module in HH survey	10+	—	National	List of activities	—	—	—

	2012	Day before	Independent	10+	148,492 individuals; 42,285 households	National	Questionnaire, list of activities	Interview recall method	Yes	CAUTAL and ICATUS
	2013 (and every 3 years after)	Day before	Independent	—	151,099 individuals; 44,236 households	All eligible	Structured survey with 9 sections and 91 activities	—	—	ICATUS (modified to Colombia context)
Costa Rica	2004	—	Module in Multiple Purpose HH Survey	12+	13,399 dwellings	National, key informants report on all household members	Stylized questionnaire	—	Yes when caring for sick, children, or other people who need attention	Based on Mexican experience using CMAUT and CAUTAL
	2011	—	Independent	12+	2,636 dwellings	Greater metropolitan areas-household members	Stylized questionnaire	—	Yes when caring for sick, children, or other people who need attention	CAUTAL; CMAUT (Mexican Classification)
Cuba	1985	—	Questions in survey in five municipalities	—	—	—	—	—	—	—
	1988	—	Questions in survey in five municipalities	—	—	—	—	—	—	—
	1997	—	Questions in survey in five municipalities	15+	4,524 individuals	—	Diary	—	—	Based on ICATUS
	2001	—	Independent	15+	4,524 individuals; 1,969 households	All rural population from Pinar del Rio, San Juan y Martinez, Habana Vieja, Bayamo	Diary	Self-reporting	—	ICTUA
Ecuador	2003	—	—	—	—	—	Questions	—	—	—
	2004	1 weekday & 1 weekend	HH Survey Module	—	—	All eligible	2 diaries	Interview	—	CAUTAL

	2005	—	Module	12+	—	Rural area of province of Chimborazo, urban and rural areas of province of Esmeraldas and urban area of City of Quito	Interview questionnaire based on activity list- 110 questions	Direct interview	—	—
	2007	—	Module in HH survey	12+	—	—	—	—	—	CAUTAL
	2010	—	Module	12+	—	—	34 questions	—	—	CAUTAL
	2012	—	Independent	12+	22,968 dwellings	National, urban and rural	Stylized diary (132 questions)	—	—	—
El Salvador	2004–2005	Previous day	Short list of questions in the Multipurpose Household Survey (EHPM)	10+	1,400 households	National, all eligible	Stylized diary	Interview	—	Ad hoc detailed, international classifications are not used
	2010–2011	—	Module in EHPM	10+	3,728 households	National, all eligible	Stylized diary (47 questions)	—	—	Ad hoc detailed, international classifications are not used
Guatemala	2000	Previous day	Module in National Survey of Living Conditions (ENCOVI)	7+	14,337 dwellings	National, all eligible	27 questions: List of Activities	—	—	—
	2006	—	Module in HH survey (ENCOVI)	7+	—	National, all eligible	20 questions; List of Activities	—	Yes	Ad hoc detailed, international classifications are not used
	2011	—	Module in HH survey (ENCOVI)	7+	14,337 households	National, all eligible	27 questions: List of Activities	—	Yes	Ad hoc detailed, international classifications are not used
	2014	—	Module in the National Employment and Income Survey	—	—	—	—	—	—	—

Honduras	2009	Previous day	Module in Permanent HH Survey	10+	21,330 households	National, all eligible	Stylized diary	—	—	International classifications were not used
	2011	—	Module in Permanent HH Survey	10+	21,336 households	National	Stylized diary; activities list	—	—	International classifications were not used
México	1996	Previous week	Module in the National Survey on Work, Contributions and Time Use (ENTUAT)	8+	5,000 households	National, all eligible	Stylized questionnaire: List of 34 activities	Interview recall method	No	ICATUS (slightly modified)
	1998	—	Independent (ENUT)	8+	12,000 households	National, all eligible	Light diary	Interview recall method	Yes	Classification of Time Use (CUT 98)
	2002	One week from M-Sun.	Independent (ENUT)	12+	5,445 households	National, all eligible	Questionnaire with stylized list of activities	Interview recall method	Yes	ICATUS adjusted
	2009	Previous week from M-Sun.	Independent (ENUT)	12+	17,000 households	National, all eligible	Questionnaire with predefined activities	Direct interview, electronic questionnaire	Yes	CMAUT; ICATUS
	2014 (and every 5 years after)	Previous week from M-Sun.	Independent (ENUT)	12+	16,996 dwellings	National, all eligible	Direct questionnaire	Interview recall method	Yes	CMAUT based on ICATUS 2012 and CMAUT 2005
Nicaragua	1995–1996	Typical day	Independent	—	6,028	Representative at the departmental level	—	Survey was	—	—
	1998	Previous day	Module	6+	2,325	Representative at the macroregional level	List of activities	—	Yes, but method of asking about simultaneous activities does not identify which other activities were combined with childcare or other simultaneous activities	International classifications are not used
Panamá	2006	—	Module in Multipurpose Survey	15+	—	All eligible	List of activities, weekday, weekend day (1 month collection period)	Interview	—	Ad hoc detailed

	2011	1 weekday & 1 weekend day	Independent	15+	3,720 dwellings	All urban areas except for Darien	Questionnaire - List of activities	Interview	—	Ad hoc detailed
Paraguay	1997–1998	—	—	—	—	—	Questions	—	—	—
	2000–2001	—	Module in HH Survey	6+	—	—	—	—	—	—
Perú	2006	1 weekday & 1 weekend	Questions in HH Survey	12+	—	All eligible	List of activities, weekday, weekend day	Interview	—	ICATUS
	2010	—	Independent	12+	4,580 households	National, all eligible	Stylized questionnaire	Interview	—	ICATUS
Dominican Republic	1995	—	Independent	10+	1,500 households	National, all eligible	List of activities	—	Yes	Time Use Survey Activity Classification
	2006–2007	—	Question in the Demographic and Health Survey	10+	30,937 individuals; 8,363 households	All resident households not living in collective housing, defined as more than 5 households living together. Regular armed forces living in military facilities excluded from sample.	Questionnaire and diaries for household and individual expenses collection	PAPI	—	International classification not used
Uruguay	2003	—	Independent	16+	1,200 individuals	Montevideo metropolitan area	—	—	No	—
	2007	Previous day	Module in Continuous Household Survey	14+	8,973 persons; 4,100 households	1 qualified respondent	Questionnaire with 60 questions	Interview recall	No	ICATUS
	2011	—	Module in Continuous Household Survey	—	—	—	—	—	—	ICATUS

	2013	—	Module in Continuous Household Survey	14+	7,447 individuals; 3,391 households	National	—	—	—	ICATUS
Venezuela	2008	Previous day	Independent	12+	32,500 individuals	—	Diary	—	—	ICATUS
	2011–2012	—	Independent	12+	32,500 individuals; 10,500 households	National, all eligible	Diary	—	—	ICATUS
Middle East & Africa										
Algeria	2012	—	Independent	12+	9,015 households	National, all eligible	24-hour questionnaire		Yes	ICATUS
Islamic Republic of Iran	2008–2009	—	Independent	15+	3,220 households per season	National, all eligible	24-hour diary (15 minute intervals) and questionnaires		—	ICATUS
Iraq	2007	—	Module in HH survey	10+	24,445 individuals; 18,144 households	National	24-hour light diary (26 activities)	—	—	
Morocco	1997–1998	—	Independent	15–70	2,776 household members randomly selected from 4,487 households	National, 1 woman per household	Recall interview and observation	Repeated visits per day; self-classification of activities	Yes	—
	2011–2012	—	Independent	7+	9,200 households	National	24-hour full and open diary	—	—	ICATUS
Oman	1999–2000	—	Module of Household Expenditure and Income Survey (HEIS)	15+	50% of the 4,148 HEIS sample households	National, all eligible	Diary and interview	Self-complete diary for literate persons; recall interview for non-literate persons	No	—

	2007–2008	—	Module of Household Expenditure and Income Survey (HEIS)	15+	9,063 individuals	National, all eligible	24-hour light diary (19 activities)	—	None	—
State of Palestine	1999–2000	—	Independent	10+	4,019 households	National, one male and one female eligible household member	24-hour diary	Self-complete	—	ICATUS
	2012–2013	—	Independent	10+	5,903 households	National, household members- 2 persons (male and female) from each household: 40/60 female/male	Full 24-hour diary: 30 minute-intervals between 10 pm and 6 am; and 10 min intervals between 6 am and 10 pm	—	Yes	ICATUS
Qatar	2012–2013	—	Independent	15+	16,574 individuals	—	Diary	—	—	Pre-listing of more than 20 activities
Tunisia	2005–2006	—	Independent	15+	4,464 households sampled (4,271 interviewed)	25% women; 7% unemployed; rest employed; 67% urban 37% rural	Diary 15-minute intervals	—	No	HETUS
	2012	Last week and previous day	Module in Youth Survey (UYS)	15–29	4,224 households	—	Stylized diary analogue with specific activities	Interview recall method	No	Own codes
	2014	Last week and previous day	Module in Labor Force Survey	6+	11,738 adult individuals and 2,305 children (6-14); 4,521 households in urban areas	—	Stylized diary analogue with specific activities	Interview recall method	Yes	Own codes
Turkey	2006	1 weekday & 1 weekend	Independent	15+	11,815 individuals in 5,070 households	National, all eligible	2 diaries	Self-complete	No	HETUS
	2014–2015	1 weekday & 1 weekend	Independent	10+	11,440 sample households	National	2 diaries	—	—	HETUS

Benin	1998	—	Module of household survey on labour, income and social indicators in rural areas; independent survey on time use and education in urban areas	6–65	5,834 individuals from 1,787 households in urban areas; 6,770 individuals from 1,419 households in rural areas	National, all eligible	Diary- 15-minute intervals	Recall interview	Yes	"Classification system listed activities in the order in which they were most likely to be performed during the day. 63 activities classified into 9 categories."
Djibouti	2012	—	Module in HH Expenditure Survey	10+	1,500 households	National, all eligible	24-hour full diary	—	Yes	—
Egypt	2006	Past 7 days	Module in Labour Force Survey	Children 6–17 and women 18–64 answered questions about time use and domestic work	37,140 individuals in 8,349 households	National	Stylized questions about domestic work activities (e.g., cooking, care for elderly, sick and children)	Interview recall method	Yes	Own codes
	2009	Previous day	Module in Survey of Young People (SYPE)	One girl or boy 10–14; one man and one woman 15–29	15,029 individuals	National	Stylized diary analog, reporting hours & minutes spent on previous day on 27 different activities (grouped into 8 main activities)	Interview recall method	No	Own codes
	2012	Past 7 days	Module in Labour Market Panel Survey	6–64	37,140 individuals [28,770 (77 percent) were successfully re-interviewed]	—	—	Interview recall method	—	Own codes
Ethiopia	2012	Previous day	Time Use Pilot	10+	900 households	30 selected enumeration areas in all regions of the country	24-hour diary	—	—	ICATUS

	2013	Previous day	Independent	10+	52,262 individuals in 20,280 households	National, all eligible	24-hour diary	Face-to-face recall interview	Yes	ICATUS
Ghana	1991–1992	Past 7 days	Module in Ghana Living Standards Survey	—	4,552 households	National, all eligible	Questionnaire	Interview recall method	Yes	Own codes
	1998–1999	Past 7 days	Module in Ghana Living Standards Survey	—	25,694 individuals in 5,998 households	National, all eligible	Questionnaire	Interview recall method	Yes	Own codes
	2005–2006	Past 7 days	Module in Ghana Living Standards Survey	7+	8,700 households	National, all eligible	Questionnaire	Interview recall method	Yes	Own codes
	2009	Previous day	Independent	10+	4,800 households	National, all eligible	24-hour diary	Interview recall of activities from 4:00 am on previous day to 4:00 pm on day of interview; one-hour time slots; for each time slot, maximum of five activities can be recorded	Yes	ICATUS
	2012–2013	Past 7 days	Module in Ghana Living Standards Survey	7+	16,772 household	National, all eligible	Questionnaire	Interview recall method	—	—
Lesotho	2002–2003	—	Module of Household Budget Survey	15+	8,182 individuals	National	24-hour light diary (11 activities)	—	—	—
Malawi	1997–1998	—	Module	5+	12,960 households	National	—	—	—	—
	2004–2005	—	Module	5+	52,000 individuals in 11,280 households	National	Stylized diary	—	—	—

	2010–2011	—	Module	15+	12,288 households	National	—	—	—	—
Madagascar	2001	—	Parallel sample attached to permanent survey	6–65	7,743 individuals and 2,663 households	National	24-hour diary	—	—	—
Mali	2008	—	Independent	6–65	2,249 individuals	Random selection	Diary	Interview	—	List of 63 activities
Mauritius	2003	—	Module	10+	19,907 individuals and 6,480 households	National	24-hour diary (10 activities)	—	Yes	—
South Africa	2000	Random day	Independent	10+	10,800 dwellings	National, 2 eligible household members	24-hour diary	Recall	Yes	ICATUS
	2010	—	Independent	10+	30,897 dwellings	National, 2 eligible household members	Interview	Face-to-face	Yes	ICATUS
Tanzania	2006	Previous day	Module in Labour Force Survey	5+	8,000 households	Covering Mainland Tanzania - all eligible	Questionnaire	Administered for 7 consecutive days to each household member age 5+	Yes	ICATUS
	2014	Interview day	Module in Labour Force Survey	5+	11,520 households	Covering Mainland Tanzania - selected household members	24-hour diary with one-hour time slots starting from 6 am to 6 pm	Interview recall method	Yes	ICATUS
Uganda	2009–2010	—	Module	14–64	—	—	—		—	—

The Caucasus & Asia										
Armenia	2004	—	Independent Pilot	15–80	176 individuals in 60 households	5 Towns and 4 villages located in 9 administrative territorial divisions- not nationally representative	Diary	—	Yes	—
	2008	1 weekday & 1 weekend	Independent	15–80	1,342 individuals in 512 households	National, all eligible	2 diaries	—	Yes	HETUS
Azerbaijan	2008	—		15+	—	—	—	—	—	—
Bangladesh	2005	—	Module in household survey	—	1,000 households	—	—	Observation	—	—
	2012	1 weekday & 1 weekend	Independent	15+	3,780 households	National	2 diaries	Self-administered for educated respondents & face-to-face interview for non-educated respondents	Yes	ICATUS
Cambodia	2003–2004	Past 7 days	Module in Socio-economic Survey	5+	15,000 households	All eligible	Stylized diary analogue with pre-specified list of 22 activities	Interview recall method	No	Own codes
China	2008	1 weekday & 1 weekend	Independent	15–74	37,142 individuals in 16,661 households	10 provinces, all eligible	24-hour diary	—	Yes	—
India	1998–1999	Past 24 hours	Independent	6+	18,591 households	6 states coverage, all eligible	Three diaries (a normal day, an abnormal day and a weekly variant of the past week)	Recall interview	Yes	Own codes

Indonesia	1998–1999	—	Time Use Pilot	—	12,000 households	Selected 100 villages (10 districts and 12 provinces)	—	—	—	—
	2004	—	Module	15+	1,024 households	5 municipalities of the Special Provinces of Jakarta	Questionnaire	—	—	—
	2005	—	Independent	10+	360 households (90 households per province)	Pilot in 4 provinces	Questionnaire	—	—	—
South Korea	1981, 1985, 1990, 1995 and 2000	3-day period	Independent (Korean Broadcasting System)	10+	3,500 individuals	—	Diary 15-minute intervals	Interview	Yes	Own codes
	1999	—	Independent	10+	46,109 individuals; 17,000 households	National, all eligible	Diary and questionnaire	Self-completed diary and interview	Yes	Ad hoc detailed classification
	2004	2 consecutive days	Independent	10+	32,000 individuals; 12,750 households	National	24-hour diary: 2 consecutive days	Self-completed	—	Ad hoc detailed classification
	2009	2 consecutive days	Independent	10+	21,000 individuals; 8,100 households	National	24-hour diary- 2 days	Self-completed	—	Ad hoc detailed classification
	2014	2 consecutive days	Independent	10+	27,000 individuals; 12,000 households	National	24-hour diary: 2 consecutive days	Self-completed	Yes	Ad hoc detailed classification
Kazakhstan	2006	Past 7 days	Independent	6+	3,000 households	National	Diary	—	—	—
	2012	1 weekday & 1weekend day	Independent	10+	33,830 respondents in 12,000 households	National	24-hour diary with 10-minute interval time diary completed on two randomly designated days	—	Yes	ICATUS

Kyrgyzstan	2000	—	—	—	—	—	—	—	—	—
	2005	—	—	20–74	—	—	—	—	—	—
	2010	—	Independent	12+	4,929 households	All eligible	—	—	—	—
	2015	—	—	—	—	—	—	—	—	—
Lao People's Democratic Republic	1992–1993	—	Module	—	—	—	—	—	—	—
	1997–1998	—	Module	10+	8,882 individuals	National, one randomly selected person per household	—	Recall interview	No	—
	2002–2003	—	Module	10+	49,790 individuals from 8,100 households	National, all eligible	—	—	—	—
	2007–2008	—	Module	10+	—	National, all eligible	24-hour light diary (22 activities)	—	No	—
Malaysia	2003	—	—	15–64	15,000 living quarters and 32,000 respondents	National	2-day diary	—	—	—
Mongolia	2000	—	Time Use Pilot	12+	2,753 individuals from 1,086 households	National, all eligible	24-hour diary and interview	Self-complete diary and recall interview	Yes	—
	2007	—	Independent	12+	7,132 respondents; 3,200 households	All eligible who were at home	24-hour diary and interview	Self-complete diary and recall interview	—	ICATUS

	2011	Previous week	Independent	12+	3,500 invdividuals; 4,000 households	National	24-hour diary and interview	Self-complete diary and recall interview	—	ICATUS (10 groups activities)
	2015	Previous week	Independent	12+	13,726 individuals in 4,000 households	—	24-hour diary and interview	Self-complete diary and recall interview	Yes	Own codes
Pakistan	2007	—	Independent	10+	19,600 households	National, 2 eligible household members	24-hour diary	—	Yes	—
Thailand	2001	Random day	Independent	10+	62,500 individuals in 27,000 households	National, 1 eligible respondent per household	Interview and diary	Direct interview and self-complete diary	Yes	ICATUS
	2004	Random day	Independent	10+	26,520 households	National, 1 eligible respondent per household	24-hour diary in 10-minute intervals	Direct interview and self-complete diary	Yes	ICATUS
	2009	Random day	Independent	10+	79,560 households	National, 1 eligible respondent per household	24-hour diary in 10-minute intervals on randomly selected day, using 15 major activities	Direct interview and self-complete diary	Yes	ICATUS
	2014	Random day	Independent	6+	83,880 households	National, 1 eligible respondent per household	Diary of 10-minute intervals in 24-hour period on randomly selected day, using 15 major activities	Direct interview and self-complete diary	Yes	ICATUS
North America & Other Developed Countries										
Australia	1992	—	Independent	15+	4,948 households	National	48-hour full diary	—	Yes	—

	1997	—	Independent	15+	7,246 individuals in 3,684 households	National, all eligible	24-hour diary	self-complete	Yes	Australian time use activity classification
	2006	2 consecutive days	Independent	15+	6,961 individuals in 3,643 households	National, all eligible	Two 24-hour diaries (from 12 am to 12 am) for 2 consecutive days	self-complete	Yes	—
Canada	1986	—	Module of the rotating sample if a HH survey	15+	—	National, excluding some territories	Interview	Telephone	—	Based on HETUS with own codes
	1992	—	Module	15+	12,765 households	10 provinces	24-hour diary	—	—	—
	1998	—	Independent	15+	10,749 individuals	National, excluding some territories: 1 eligible person per household	Recall interview	Computer-assisted telephone interview	No	—
	2005	—	Independent	15+	25,000 individuals	National, 1 eligible respondent per household	Recall interview	Computer-assisted telephone interview	No	—
	2010	—	Independent module	15+	—	National, 1 eligible respondent per household	24-hour diary	—	No	—
	2014	—	Pilot	15+	2,000 households	3 provinces	24-hour diary & phone call	—	Yes	Based on HETUS with own codes
	2015–2016 (and every 5 years after)	—	Independent module	—	61,500 households	National, 1 eligible respondent per household	24-hour diary & phone call	—	Yes	Based on HETUS with own codes
Japan	1996	—	Module	10+	270,000 individuals in 99,000 households	National, all eligible	24-hour diary	Self-complete	No	—

	2001	—	Independent	10+	200,000 individuals; 73,000 households for Questionnaire A; 4,000 households for Questionnaire B	National	—	—	—	—
	2006	—	Independent	10+	200,000 individuals in 80,000 households	National, all eligible	2 questionnaires depending on district: Questionnaire A adopts a pre-coding method; Questionnaire B is designed to elucidate time use in more detail	Diary method or after-coding method	Questionnaire A: no; Questionnaire B: Yes	—
	2007	—	—	10+	18,291 individuals in 3,866 households	—	—	—	—	—
	2011	—	Independent	10+	200,000 individuals in 83,000 households	National, all eligible	Two 24-hour light diaries	—	Yes	—
	2016	—	—	10+	200,000 individuals in 88,000 households	—	Questionnaires	—	—	—
New Zealand	1998–1999	—	Independent	12+	7,200 individuals	Maximum of 2 eligible respondents per sample; yield 8,535 diaries	48-hour diary + interview	Self-complete diary, interview for context variables	Yes	ACTUS
	2009–2010	—	Independent	12+	8,500 individuals	National, 2 eligible household members	48-hour full diary	—	Yes	ACTUS

USA	2003	—	Independent	15+	Approx. 40,500 households	National, 1 designated person per household	Diary		Care for children under age 13 is only secondary activity information collected. If respondents report simultaneous activities, they are asked to separate time spent on each activity or specify main activity.	ATUS
	2004-2014	—	Independent	15+	26,400 households per year	"	"	"	"	"

Glossary

Classification for Time-Use Activities for Latin America and the Caribbean (CAUTAL): guidelines to harmonize and standardize time use surveys and produce statistics in this area in Latin America and the Caribbean (ECLAC 2016).

family: members of the household who are related, to a specific degree, through blood, adoption, or marriage. The degree of relationship used in determining the limits of the family depends upon how the data will be used and therefore cannot be established for worldwide use (UN DESA 2017).

goods: physical objects for which a demand exists, over which ownership rights can be established, and whose ownership can be transferred from one institutional unit to another by transactions in markets (SNA 2002a).

gross domestic product (GDP): an aggregate measure of production equal to the sum of the gross value added of all resident institutional units engaged in production (plus any taxes, minus any subsidies on products not included in the value of their outputs). The sum of the final uses of goods and services (all uses except intermediate consumption) measured in purchaser's prices, less the value of imports of goods and services or the sum of primary incomes distributed by resident producer units (SNA 2002b).

According to the 19th International Conference of Labour Statisticians (ICLS), own-use production of services and services produced in the household are not included within the SNA production boundary, and therefore are not used to calculate GDP (ICLS 2013).

harmonization: procedures used to improve the comparability of estimates from more than one data source. Harmonization of inputs can include standardizing methods of data collection, questionnaire design, sampling etc. Harmonization of outputs can refer for example to standardizing the variables published from the data gathered. For example, the HETUS classification was designed to reconcile and standardize countries' different time use classifications so users could more easily compare data and findings across countries and regions.

Harmonized European Time Use Survey (HETUS): guidelines to ensure that European Union member states can implement time use surveys on a comparable European basis (Eurostat 2009).

head of household: the traditional notion of head of household assumes that most households are family households (in other words, they consist entirely, except possibly for domestic servants, of persons related by blood, marriage, or adoption) and that one person in such family households has primary authority and responsibility for household affairs and is, in the majority of cases, its chief economic support. This person is then designated as the head of household.

Where spouses consider themselves to be equal in household authority and responsibility and may share the economic support of the household, the concept of head of household is no longer considered valid even for family households. In order for the relationship among members of the household to be determined under these circumstances, it is essential that either:

a) the members of the household designate one among them as a reference member with no implication of headship; or

(b) provision be made for designation of joint headship where desired (UN DESA 2017).

household: A small group of persons who share the same living accommodation, who pool some, or all, of their income and wealth, and who consume certain types of goods and services collectively, mainly housing and food (SNA 2002c).

household production: production activities by members of households, unincorporated market enterprises, and household unincorporated enterprises producing for own final use. Informal sector enterprises are part of household unincorporated market enterprises (SNA 2004).

informal employment: the total number of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises, or households during a given reference period. This includes own account workers

and employers employed in their own informal sector enterprises; contributing family workers; employees holding informal jobs; members of informal producers' cooperatives; own account workers engaged in the production of goods exclusively for own final use by the household (adapted from ICLS 2003).

International Classification of Activities for Time-Use Statistics (ICATUS): is a three-level hierarchical classification (composed of major divisions, divisions, and groups) of all possible activities undertaken by the general population during the 24 hours in a day. The purpose of the classification is to provide a framework that can be used to produce meaningful and comparable statistics on time use across countries and over time (UNSD 2017).

labor force: the total labor force, or currently economically active population, comprises all persons who fulfil the requirements for inclusion among the employed or unemployed during a specified brief reference period (ILO 1982).

official statistics: statistics disseminated by the national statistical system, excepting those that are explicitly stated not to be official (OECD et al. 2002).

own-use production of services: working age individuals who, during a short reference period, performed any activity to produce services for own final use, for example, household management, preparing and/ or serving meals, cleaning, child and elder care, where the intended destination of the output is mainly for final use by the producer or final consumption by household members or by family members living in other households (adapted from ICLS 2013).

panel survey: successive surveys of the same sample units which are deliberately spaced over time because one of the objectives is to measure changes in the units (UN 1984).

satellite accounts: accounts that provide a framework linked to central accounts and enable attention to be focused on a certain field or aspect of economic and social life in the context of national accounts; common examples are satellite accounts for the environment, or tourism, or unpaid household work (SNA 2003a).

secondary/simultaneous activity: regularly engaging in more than one activity at the same time. These parallel activities that accompany a main or "primary" activity are called "secondary" or "simultaneous" activities (UN DESA 2005).

self-reporting time diary: respondents may report their own time use by recording their activities in an appropriately designed time diary (UN DESA 2005).

stylized analogue: version of a diary in which the respondent is asked to recall the amount of time he or she allocated to specified activities over a specified period such as a day, week, or year (UN DESA 2005).

System of National Accounts: the internationally agreed standard set of recommendations on how to compile measures of economic activity. The SNA describes a coherent, consistent, and integrated set of macroeconomic accounts in the context of a set of internationally agreed concepts, definitions, classifications and accounting rules (SNA 2003b).

System of National Accounts general production boundary: economic production is an activity carried out under the control and responsibility of an institutional unit that uses the inputs of labor, capital, and goods and services to produce outputs of goods or services. Activities that fall outside the general production boundary are those that are not productive in an economic sense; they include basic human activities such as eating, drinking, sleeping, exercising, etc., where it is impossible for one person to employ another person to perform them. Activities such as washing, preparing meals, caring for children, the sick or aged are all activities that can be provided by other units and, therefore, fall within the general production boundary (adapted from Statistical Commission 2008).

System of National Accounts production boundary within the system: the production boundary in the system is more restricted than the general production boundary. Activities undertaken by households that produce services for their own use fall outside the production boundary within the System, but fall inside the general production boundary (adapted from Statistical Commission 2008).

time diary: a diary that allows respondents to report all activities undertaken over a prescribed period of time

and the beginning and ending time for each activity. There are two basic types of diaries: the full time diary and the "light" or simplified time diary.

full time diary: respondents report what activity they were doing when they began the day, what activity came next and at what time this activity began and ended, and so on successively through the 24 hours of the day.

light time diary: respondents report the time at which each activity occurs based on an exhaustive list (UN DESA 2005).

twenty-four-hour time diary: respondents report what activity they were doing when they began the day, what activity came next and at what time this activity began and ended, and so on successively through the 24 hours of the day. (UN DESA 2005).

time use statistics: quantitative summaries of how people spend or allocate their time over a given period of time (UN DESA 2005).

unpaid household and care work: see own-use production of services

work statistics: any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use. These activities include different forms of work, such as employment (i.e. work for pay or profit) and own-use production (i.e. work performed for own final use by the household or family). This definition was adopted by the 19th International Conference of Labour Statisticians in 2013 (ICLS 2013).

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