

GUIDELINES TO PRODUCE NEW INSIGHTS USING EXISTING TIME USE SURVEYS DATA

A companion report to the Time Use and Social
Inequality – a Gendered Perspective



CONTENT

Introduction: Why do we study time use?	4
Section 1. Types of data collection	5
1.1 Time-use surveys based on diaries	6
1.2 Time use surveys based on stylized questions	9
1.3 Time use information collected as a module in a more general survey	11
Section 2: Information collected in time use surveys	11
2.1. Activities	11
2.2. Additional information collected in diaries	12
2.3. Sociodemographic information collected at household and individual level....	13
Section 3: The multi-country analysis topics of interest	15
3.A. General differences in time use.....	15
3.B. Unpaid domestic work by household members.....	15
3.C. Unpaid caregiving services by household members.....	16
3.D. Estimating total yearly hours of unpaid work	17
3.E. Task segregation	17
3.F. Time poverty.....	18
3.G. Simultaneous activities and multitasking	19
3.H. Transportation.....	19
3.I. Flexible work arrangements	20
3.J. Well-being	20
Section 4. Set of indicators.....	21
4.1. General differences in time use across all activities	21
4.2. Inequality index	22
4.3. Segregation index.....	23
4.4. Women-to-men ratio.....	24
4.5. Probability of men to outperform women in an activity.....	25
4.6. Tempo-graphs.....	27
4.7. Time poverty.....	27

4.8. Prevalence of home-based work.....	29
4.9. Work continuity schedule.....	30
4.10. Prevalence of late work.....	30
4.11. Prevalence of mode of transportation	31
4.12. Simultaneity of activities.....	31
5. Dimensions of data analysis	32
Final remarks.....	33
References.....	34

INTRODUCTION: WHY DO WE STUDY TIME USE?

Time is a finite and valuable resource that every individual uses in a manner unique to their circumstances. While all people are allocated the same twenty-four hours in a day, the ways in which this time is managed and structured are heavily influenced by social, cultural, and economic factors. These influences are shaped by gender, social class, age, caregiving responsibilities, cultural background, and physical or cognitive abilities, among other factors. Consequently, a key area of study within time-use research is the examination of **gender differences** in how time is spent. Women, for instance, often bear the primary responsibility for unpaid domestic and caregiving tasks, which are frequently overlooked in economic policy discussions and analyses. In contrast, men are typically seen as the primary earners, predominantly engaged in paid employment. This division of labor creates significant disparities in how time is allocated and utilized across genders, particularly in unpaid domestic and care work.

Understanding how individuals spend their time is essential for identifying and visualizing inequalities between different groups. From a policy perspective, it is crucial to recognize that what remains unmeasured often remains undervalued. This is especially true for the historically invisible activities of unpaid care and domestic work, which are often excluded from national statistics and policy decisions. In this context, the fifth goal of the United Nations Sustainable Development Goals (SDG 5) emphasizes the need to “recognize and value unpaid care and domestic work through the provision of public services, infrastructure, and social protection policies, as well as promoting shared responsibility within households and families, as nationally appropriate.”

However, gender differences in time use are not confined solely to paid and unpaid work. They also extend to other aspects of life, such as leisure activities, where studies have shown that men generally report spending more time on leisure than women. This discrepancy underscores the broader implications of unequal time distribution in shaping individuals’ well-being, opportunities, and access to resources.

In response to these disparities, **time policies** are emerging as a critical tool to address the unequal distribution of time in society. These policies aim to reorganize and restructure the social framework of time to improve public well-being, alleviate time poverty, and safeguard individuals’ right to time. Proper time allocation—where individuals feel satisfied with how their time is spent—can lead to enhanced overall health, reduced inequalities, higher productivity, and contribute to a more sustainable society from both social and environmental perspectives (Mückenberger, 2011).

The purpose of this document is to provide a comprehensive guidance framework for the production and use of policy-relevant time-use indicators. It is intended to support Women Count’s national partners and other stakeholders in integrating time-use data into gender-responsive policy and programming. The document is organized into four main sections:

- An overview of time-use survey methods and the types of data they generate;
- A set of key thematic areas for analyzing gender and social inequalities through a time-use lens;
- A list of proposed indicators aligned with each topic; and
- Recommendations for the effective use of these indicators in policymaking.

These guidelines complement the [Time Use and Social Inequality: A Gendered Perspective report](#), a multi-country analysis leveraging existing time-use survey (TUS) data to develop innovative indicators and insights on pressing issues related to gender equality and time poverty. The analysis draws on harmonized time-use data from surveys of ten countries—Argentina, Bangladesh, Colombia, Georgia, Kenya, Morocco, Mongolia, Senegal, the United Kingdom, and Vietnam—each representing diverse regional, cultural, and socioeconomic contexts.

By expanding the knowledge and application of time-use data, this report and the accompanying guidelines seek to provide actionable insights for improving gender equality and social equity worldwide—ensuring that time, a universal yet often unequal resource, is more fairly distributed and valued across all sectors of society.

SECTION 1. TYPES OF DATA COLLECTION

There are two main formats in which time-use information is collected: surveys based on diaries and surveys based on stylized questions. Both formats may serve as the primary purpose of a survey, or the information may be included as a module within a broader survey.

In the debate between these two approaches, it is important to note that estimates for activities of longer duration, performed frequently and regularly, tend to be very similar across both sources. For this reason, estimates for paid work show few discrepancies (Durán and Rogero-García, 2009). Beyond this, and despite several limitations described below, time-use diaries are considered the most valid and reliable source of information for studying time use. Among other reasons, they enable the collection of highly complex information in a flexible manner (Bonke, 2005). They have become the standard method for gathering information on the organization of daily life and the time allocated to paid work, unpaid work, and leisure (Sevilla, 2014). A particularly noteworthy feature is their ability to capture the sequence and order of activities—something difficult to achieve with other methods. Diaries provide a clearer picture of individuals’ daily routines by recording interruptions within longer activities, such as breaks for coffee, smoking, or answering the phone during a workday. Another key advantage is the ability to collect complementary information about the activity—such as location, co-presence of others, or use of

new technologies—which allows for detailed analysis of the time-space dynamics of each activity.

Nevertheless, as various authors have noted, time-use diaries often fail to capture precisely the synchronous and daily logic of domestic and family work. They are also less reliable in measuring time spent on less visible and harder-to-delegate tasks. Despite these limitations, their validity and usefulness in understanding how populations organize their daily lives are well established (Bonke, 2005; Gershuny and Sullivan, 1998).

1.1 Time-use surveys based on diaries

Time-use diaries provide unique information to deepen our understanding of daily life and its changes. They allow for detailed exploration of how daily routines are structured. The information from diaries is verifiable—meaning it can be compared with observed data—and reliable, as it remains consistent across different samples (Robinson, 1999). Typically, this method collects data over a 24-hour period.

There are several approaches to gathering diary-based information, with the choice depending on research objectives and available resources:

- **Fixed-interval diary.** Respondents report their activities at predetermined, uniform intervals. While the standard recommendation is ten-minute intervals (as suggested by Eurostat), longer intervals can reduce respondent workload, though at the expense of precision and detail for shorter activities (Gershuny, 2000).

Figure 1. Example of diary with fixed intervals

Time	What were you doing? <i>Record your main activity for each 10-minute period from 07.00 to 10.00!</i> Only one main activity on each line! Distinguish between travel and the activity that is the reason for travelling.	What else were you doing? <i>Record the most important parallel activity.</i>	Did you use a computer, smart device, internet, online tool, or similar technology or device for doing this? Yes	Where were you? <i>Record the location or the mode of transport.</i> e.g. at home, at friends' home, at school, at workplace, in restaurant, in shop, on foot, on bicycle, in car, on motorbike, on bus, ...	Were you alone or together with somebody you know? <i>Mark "yes" by crossing</i>					
					Alone (or with unknown persons)	With other household members				Other persons that you know
					Partner	Parent	Children (up to 17 years)	Other household member		
07:00-07:10	Woke up the children		<input type="checkbox"/>	At home	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
07:10-07:20	Had breakfast	Talked with my family	<input type="checkbox"/>	↓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
07:20-07:30	--	--	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
07:30-07:40	Cleared the table	Listened to the radio	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
07:40-07:50	Helped the children dress	Talked with my children	<input type="checkbox"/>	↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
07:50-08:00	Went to the day care centre	--	<input type="checkbox"/>	On foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Source: Harmonised European time use survey (HETUS) 2018 Guidelines, Eurostat.

A simplified version of this diary was developed by Oxfam’s Women’s Economic Empowerment and Care (WE-Care) programme to collect information specifically on care and domestic work. This version only covers care activities and uses wider time slots. Kenya is one of the countries where this type of diary has been applied (Maina and Kimani, 2019).

Figure 2. Time use diary used in Household Care Survey

	1 Primary care	2 Secondary care		3 Supervision care	4 Supervision care
	What were you doing yesterday from [TIME]? See codes below	What else were you doing at the same time? 0 = Nothing else See codes below		Were you responsible for looking after a child (<18 years) during that hour? 0 = No 1 = Yes 99 = There is no child in my household	Were you responsible for looking after a dependent adult during that hour? 0 = No 1 = Yes 99 = There is no dependent adult in my household
04am – 05am	_	_		_	_
05am – 06am	_	_		_	_
...	_	_		_	_

Source: Household Care Survey (HCS), Oxfam, 2020 (<https://policy-practice.oxfam.org/resources/measuring-and-understanding-unpaid-care-and-domestic-work-household-care-survey-621082/>).

Another variation uses one-hour intervals, allowing respondents to report up to five activities per slot. This accommodates both consecutive and simultaneous activities. The Ghana Time Use Survey 2009 employed this method.

- **Open diary.** Instead of recording activities at fixed intervals, individuals record the sequence of activities along with their start and end times. This reduces respondent workload. The American Time Use Survey in the United States follows this approach.

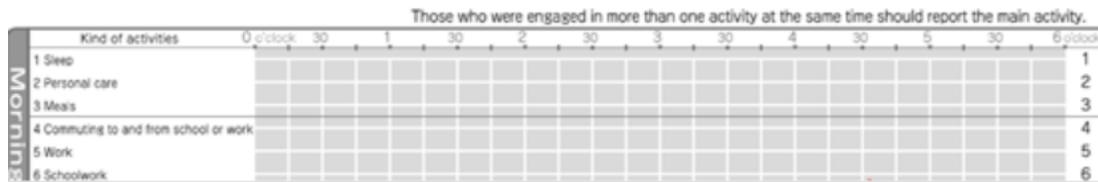
Figure 3. Example of open diary

	Start	ID	Activity	TIME	Hrs	Mins	Stop	Who	Who_2	Where	Where specify
[1]	4:00AM		Sleeping		1	4	8:00AM				
[2]	8:00AM		Grooming		1	30	8:30AM				
[3]	8:30AM		Driving to work		1	30	9:00AM	0		12	Car, truck, or motor
[4]	9:00AM		Working		1	30	9:30AM	0		2	Respondent's work
[5]	9:30AM				1						
[6]											

Source: American Time Use Survey, 2018 Questionnaire, www.atusdata.org

- **Fixed-interval diary with predefined activities (simplified diary).** To ease both respondent reporting and subsequent coding, intervals are predefined and respondents select activities from a pre-coded list. Japan uses this method in its surveys, alongside a full diary.

Figure 4. Example of fixed-interval diary



Source: Japan Time Use Survey, 2016 (<https://www.stat.go.jp/english/data/shakai/2016/gaiyo.html#Questionnaire>)

Although most common in fixed-interval diaries, all three systems allow for the collection of complementary information which, depending on research objectives and the desired level of detail, can be highly useful. For example, respondents may be asked whether they were carrying out a simultaneous activity, what that activity was, whether they were accompanied, their location, their level of satisfaction, and, more recently, whether they used a computer or the internet during the activity.

Collecting such complementary information is more difficult—and far less precise—when using the open diary system. This is because an activity's start and end times may span a period during which several secondary activities occur or various circumstances change, which are difficult to fully capture.

Both the open diary and the fixed-interval diary share the characteristic that individuals typically complete them in their own words, rather than selecting from a predefined list, as is the case in simplified diaries. The use of everyday, personalized language adds richness and nuance to the data and helps minimize bias by not revealing the survey's research objectives.

Despite their strengths, surveys based on time-use diaries face two major challenges:

- **Cost of the operation.** The high cost of statistical operations is directly linked to the need for precise information and the aim of capturing temporal and geographic variations in time use. National Statistics Offices are best positioned to conduct nationally representative surveys. However, alternative data collection modes—such as CATI (Computer-Assisted Telephone Interviewing) or CAWI (Computer-assisted web interviewing)—and, more broadly, self-completed diaries, can reduce costs by requiring less time and fewer resources.
- **Respondent workload.** The burden placed on respondents often results in high non-response rates, which can be exacerbated when certain groups—such as individuals working very long hours—are less likely to participate (Gershuny, 2000). While non-response is a challenge in most surveys, it is particularly pronounced in diary-based surveys. Bonke (2005) estimates that response rates for activity diaries average around 49 percent, compared to 66 percent for other questionnaires. The workload also extends beyond respondents, affecting fieldworkers and the subsequent coding of data.

Other commonly cited drawbacks have been mitigated to some extent through careful questionnaire design and robust data collection methods, although these improvements often further increase operational costs. Remaining limitations of the diary method include:

- **Difficulty in capturing weekly, monthly, and yearly cycles of activities.** Ensuring adequate representation of workdays and weekends/holidays is crucial. Common solutions include randomly assigning different days to respondents or requiring each respondent to complete two diaries—one on a workday and one on a weekend/holiday. Seasonal variations are typically addressed by collecting information across all 365 days of a year.
- **The possibility that the recorded day is atypical.** Questionnaires usually ask respondents to indicate this, leaving researchers the option to exclude such days from analysis.
- **Difficulty in capturing psychosocial motivations behind behaviors.**
- **Subjectivity in coding open-ended responses,** particularly since core diary information is often open-ended.
- The risk that **minority activities become blurred or lost during coding.**
- **Reluctance to report sensitive or illegal activities.**
- **Variations in the level of detail provided by respondents.** Some record activities extensively, while others use only a few words. The latter makes post-survey coding difficult. Moreover, some respondents describe a large number of detailed activities, whereas others report only broad categories, resulting in a very low number of activities captured in the diary.

1.2 Time use surveys based on stylized questions

Surveys based on stylized questions are commonly used in research aimed at measuring the time dedicated to specific tasks or sets of tasks, particularly when resources are insufficient to implement open-ended diary methods. In this approach, respondents are presented with a list of activities and asked to indicate both the frequency with which they perform each activity (e.g., every day, a few times a week, once a week, never) and the amount of time they dedicate to it over a given reference period, such as the previous workday or the past week.

In addition to recording activities, surveys may include other elements relevant to the research objectives, such as the level of satisfaction with each activity and/or the time a partner dedicates to the same tasks, allowing for partner-level comparisons.

The activities must be clearly defined and aligned with the survey's objectives. They typically cover paid work, unpaid work, leisure, and commuting.

Compared with time-use diaries, stylized surveys offer several advantages:

- Simpler methodology and data processing.
- Lower cost. Stylized surveys require fewer resources, less infrastructure, and less fieldwork time. Results are also available much faster. Time modules based on stylized questions can be incorporated into broader surveys more easily than diaries, which further reduces costs.
- Easier replication. Surveys can be replicated for the same population, enabling trend analysis.
- Better capture of certain activities. Activities not performed daily (e.g., cultural or sporting events, long-distance travel), short-duration activities (e.g., smoking, casual conversations), sensitive activities (e.g., sexual behavior), and activities often performed simultaneously with others are more easily captured with stylized surveys.

The main disadvantages are:

- **Lack of precision for full 24-hour coverage.** To accurately capture all activities in a 24-hour period, an extensive and detailed activity list is required; otherwise, estimates become unreliable.
- **Inaccuracy for infrequent or irregular activities.** These are often overestimated compared with diary data, partly because informal breaks during long-duration activities are omitted. Conversely, short-duration activities are frequently underestimated.
- **Bias toward socially valued activities.** Activities with positive social value (e.g., reading to children) are often overreported, while those with negative connotations are underreported.
- **Gender and social pressure bias.** In countries with high gender inequality and strong social expectations, both men and women tend to overreport domestic work. This bias is less evident in contexts with greater gender equality. Evidence of this has been found in studies from the United Kingdom (Kan, 2008; Kan and Pudney, 2008) and from Denmark and Norway (Bonke, 2005; Kitterød and Lyngstad, 2005).
- **Memory-related inaccuracies.** Since respondents report retrospectively, data quality is affected by memory errors.
- **Ambiguity in predefined activity lists.** Closed activity lists may lead to discrepancies between researcher and respondent interpretations of an activity. Expanding the list can help mitigate this. Some Latin American surveys, for example, include over 100 activities.
- **Difficulty distinguishing secondary from primary activities.** While secondary activities may be better captured, the inability to differentiate them from primary activities results in a loss of information on task prioritization (Durán and Rogero-García, 2009). Moreover, simultaneity can lead to duplication of time estimates. For example, if childcare and cooking are reported as simultaneous unpaid activities, part of the time is counted twice, resulting in totals that can exceed 24 hours.

1.3 Time use information collected as a module in a more general survey

As noted above, time-use information is often collected through modules embedded within broader surveys rather than through dedicated time-use surveys. Although these modules generally rely on stylized questions, some examples incorporate time diaries. The logic is the same as in standalone stylized surveys; however, in this case, time-use data are not the main objective. Instead, selected questions are added to a larger questionnaire to capture time-use information.

The primary advantage of this approach is cost reduction, as it leverages the infrastructure and field operations of the general survey. Household surveys, such as labour force surveys and living conditions surveys, are the most common vehicles for including time-use modules.

These modules usually focus on one or a few activities rather than providing a complete 24-hour account. Their design must therefore carefully consider the target population, number of respondents, and reference period, which are often constrained by the broader survey and may not fully align with the requirements of time-use data. Examples include the Cameroonian Household Survey (2014), the Mexican National Occupation and Employment Survey, the Swiss Labour Force Survey (2016), and the Tanzanian Household Budget Survey (2017–18) and Integrated Labour Force Surveys (2006, 2014, 2020–21).

Another example is the ILO's light time-use module designed for inclusion in labour force surveys. This tool provides a simple, cost-effective, and comprehensive way to measure unpaid domestic and care work (ILO, [Measuring Unpaid Domestic and Care Work](#)). It consists of a 24-hour diary with 15-minute intervals, based on a predefined list of tasks that can be adapted to different contexts. The module is also designed to capture multitasking.

SECTION 2: INFORMATION COLLECTED IN TIME USE SURVEYS

2.1. Activities

Providing a standard and harmonized set of activities is an important challenge in time use studies. Comparability across place and time is crucial for evaluating progress toward established goals and for identifying which policies need to be promoted. For this reason, international organizations have developed harmonized classifications of activities to be used in time use surveys.

Current classifications build on those created for the earliest time use studies, such as the original *Multinational Time Use Study* (Szalai, 1972), and have since been adapted with insights from other projects and the inclusion of new activities. Harmonized activity lists can be used in surveys based on stylized questions—where respondents are asked about the time they dedicate

to specific activities—as well as in diary-based surveys, where respondents describe in their own words what they are doing, with post-coding required to ensure comparability.

Standard classifications provide detailed information at different levels, with activities grouped by digits. For example, a broad list of activities can be derived from the first digit of the activity code. A more detailed list is available at the two-digit level, and the most common format also provides a three-digit list for finer detail.

The *2016 International Classification of Activities for Time-Use Statistics* (ICATUS 2016), developed by the United Nations Statistics Division in collaboration with other experts, is the most widely used international classification. Its three-level hierarchical system categorizes all possible activities undertaken by the general population during a 24-hour day and provides a framework for producing meaningful and comparable statistics on time use across countries and over time (United Nations, 2021).

Eurostat's guidelines for the *Harmonized European Time Use Survey* (HETUS) provide another classification—the Activity Coding List (ACL)—which reflects European-specific contexts (Eurostat, 2009).

Both systems allow for the addition of new activities to account for country-specific circumstances and particularities.

2.2. Additional information collected in diaries

Although the time spent, frequency, and participation rate by activity are the primary focus of time use surveys, collecting additional information about how activities take place improves data quality and provides deeper insights into the context of episodes. Gathering contextual data is more common in diary-based surveys, since the diary structure is well suited to capturing such details and these surveys typically have greater financial and time resources. Adding columns to diaries makes it easier to incorporate this type of information. Contextual data also serve as auxiliary variables, increasing the accuracy of classifying and coding time use activities.

In addition to the main activities, diaries often include the following variables:

- **Secondary activity.** Respondents identify which activity is the main one and which is secondary, based on the importance they assign to each simultaneous activity. When the diary is organized with open intervals, main and secondary activities cannot overlap for the entire episode, and different episodes of secondary activities can be reported. The level of detail for secondary activities can match that of main activities; however, in some surveys, only certain secondary activities are collected, as in the American Time Use Survey.

- **Use of ICT during the activity.** This information has been added to diaries in recent waves due to the rise of activities carried out using computers and other electronic devices. The spread of new technologies has also diversified this variable. For example, internet access is now common across multiple devices, unlike in the past, when it was less widespread or unavailable in many contexts.
- **Location.** This refers to where the episode takes place. Broad categories typically include home, work, and school, while more detailed options may cover places such as restaurants or other households. For travel, the location is defined by the mode of transportation, such as on foot, by car, bicycle, bus, or train.
- **With whom the activity is done.** This information is usually collected in separate columns for each category. It is particularly useful for studying childcare, which may be underestimated if only main activities are considered, since childcare is often performed simultaneously with other tasks. Recording the presence of children—especially young children—provides a more accurate measure of childcare. Diaries also commonly include an option to indicate whether the respondent is alone, which is useful for analyzing loneliness and related well-being issues.
- **For whom.** This variable specifies whether the activity is done for members of the respondent’s household or for others, as these are classified differently under major divisions.
- **For pay or profit.** This distinguishes paid employment from unpaid volunteer work, which are counted separately.

The relevance of these variables for analyzing time use varies, and their inclusion differs across surveys. Location and secondary activities are typically recorded in diaries. Information about the presence of others during an activity is also commonly collected, though with varying levels of detail. As noted earlier, such data enable the calculation of alternative measures that provide more accurate estimates, particularly for activities such as childcare. By contrast, the last two variables—“for whom” and “for pay or profit”—are less commonly included. While especially useful in societies where informal work is more prevalent, they are not considered essential in other contexts and are therefore collected less frequently.

2.3. Sociodemographic information collected at household and individual level

The collection of socioeconomic and demographic information at both the individual and household levels is essential for understanding how time use varies across population groups and for identifying the most vulnerable groups from a time-use perspective. This information provides valuable context on how daily activities are conducted and helps explain differences across different collectives.

At the individual level, the most fundamental variables include:

- Age (or alternatively, year of birth)
- Gender
- Level of education
- Employment status
- Income
- Health
- Place of birth or nationality
- Availability of external help
- Disability status

Household composition and living arrangements are also critical determinants of how individuals allocate their time and how tasks are distributed among household members. Household size, for instance, plays a significant role: larger households typically require more total housework due to greater needs for food preparation, laundry, and cleaning. Living with a partner also significantly affects time allocation, as gender dynamics tend to differ compared to those living alone.

Parenthood and the presence of children in the household are additional factors shaping the distribution of time, often reinforcing traditional gender roles. This typically widens the gender gap, with women spending more time on unpaid work and men devoting more time to paid work (Dribe and Stanfors, 2009; Sayer, 2005).

Surveys use different methods to collect household composition data. A common approach is to ask about each individual's relationship to the household head. While this works well for simple households where all members are directly related to the head, it can be difficult to establish relationships among members not directly linked to the head. A more accurate approach is to collect a detailed roster of relationships among all household members. Although this requires more effort from respondents, it provides reliable information on partnerships and parent-child relationships. Where partnership status cannot be directly established, marital status can serve as a useful proxy, particularly in contexts where cohabitation is uncommon.

Determining co-residence with children can also be challenging, especially when trying to distinguish one's own children from others. A common strategy for harmonizing surveys and ensuring comparability is to calculate the number of children below a certain age within a household (see Multinational Time Use Study—MTUS, Fisher et al., 2019). While this approach may conflate different situations, such as co-residence with siblings or grandchildren, it remains a practical and valuable method when the limitations are acknowledged. It is particularly useful for comparing surveys, as the limitations apply consistently across all units of comparison.

Alternatively, direct questions—such as whether the respondent lives with a partner or the number of children below a certain age in the household—provide simple ways to obtain basic household composition data.

SECTION 3: THE MULTI-COUNTRY ANALYSIS TOPICS OF INTEREST

This list of topics includes some of the most common areas analyzed using time-use surveys, while also introducing new fields relevant for understanding population dynamics. We propose novel areas of analysis and suggest alternative approaches to topics traditionally explored from a time-use perspective, particularly with regard to gender differences.

3.A. General differences in time use

This topic refers to computing indicators that evaluate overall differences in time use, taking into account all activities.

While scholars agree there has been some convergence in how men and women use their time, notable differences remain in its distribution. Women have reduced the time spent on domestic work and increasingly participate in the labor market. This shift has led to more time spent on paid work, narrowing the gender gap in this area. Conversely, men have increased the time they dedicate to housework, though not to the same extent as women have reduced theirs. Parenting norms have also evolved, with both men and women seeking more time with their children. Nevertheless, men continue to devote more time to leisure activities, while women spend more time on unpaid care for other adults—a responsibility that is becoming more demanding as populations age and assistance to older generations grows.

The objective is to develop a single indicator that evaluates the general distribution of time between men and women, accounting for all activities at the one-digit level. This indicator can also be calculated for other characteristics, such as educational attainment (e.g., university-educated versus non-university-educated populations) or union and parenthood status. Ultimately, it provides a measure of how time distribution differs across population groups.

3.B. Unpaid domestic work by household members

The distribution of unpaid domestic work is often used as an indicator of gender equality. As also noted in the unpaid care work section (See **Section 3.C**), this type of work has traditionally been labeled a *female-stereotyped* responsibility—one that individuals, particularly men, often seek to avoid. In recent decades, the gender gap in domestic work has narrowed, though it remains significant in certain contexts and for specific groups.

To address this issue, we propose calculating indicators that evaluate differences between men and women across all activities, as well as at the task level. Moreover, this activity will be analyzed as one that is significantly segregated by gender. The subcategories or tasks included in the analysis are as follows:

- **Nutrition management:** preparing food, serving meals, cleaning up after food preparation, and storing and preserving food items.
- **Sanitation:** maintaining household cleanliness and hygiene, including indoor and outdoor cleaning (e.g., sweeping the compound, watering flowers, trimming hedges and grass), and garbage management and disposal.
- **Clothes and laundry:** laundry, ironing, and repairing clothes.
- **Household maintenance and repairs:** maintaining and repairing dwellings, installing household goods, vehicle repairs, and other tasks related to household upkeep.
- **Household management for own final use:** paying bills, shopping, budgeting, and organizing duties and activities within the household.

In an internal working EXCEL file the aggregation performed for each country analyzed in [Time Use and Social Inequality: A Gendered Perspective report](#) was stored. This aggregation also accounts for the fact that assistance to non-household members is classified as volunteering, and that travel is categorized under a specific activity.

3.C. Unpaid caregiving services by household members

Care activities for both household and non-household members have traditionally been classified as unpaid work in time-use studies. As noted above, unpaid work is generally viewed as a *female-stereotyped* activity, often considered the responsibility of women in the traditional division of labor. However, housework and care activities are increasingly classified separately due to their different natures. Housework is generally perceived as less desirable and often avoided, whereas care activities—particularly childcare, one of the main forms of unpaid care—are often more enjoyable. Still, not all unpaid care activities are equally pleasant. While both fathers and mothers have increased the time spent on childcare, men’s involvement tends to focus more on activities such as playing or reading with children. In contrast, more demanding tasks—feeding, cleaning, physical care, and providing medical care—remain predominantly the responsibility of mothers. Similarly, the care of adult household members, which is becoming more demanding, continues to be performed mostly by women.

Time-use surveys typically specify in the main activity code whether care is directed toward a child or an adult and distinguish unpaid care provided to non-household members. Based on this, the proposed indicators will evaluate gender differences in care activities across three levels, which can be further detailed depending on survey data:

- **Childcare:** including both the main activity and “with whom” dimension. Activities covered include feeding, cleaning, physical care, providing medical care, instructing, teaching, training, helping, talking and reading with children, playing sports, minding children (passive care), and arranging meetings with schools or childcare service providers.

- **Care for dependent adults:** assisting dependent adults with daily living tasks, providing medical care, handling forms, administration and accounts, offering emotional support, passive supervision, and arranging meetings with adult care service providers.
- **Assistance to non-dependent adult household members:** feeding, cleaning, and caring for non-dependent adults (including temporary illness care), offering emotional support, and accompanying persons or goods during travel.

Unpaid care activities will be further examined in the task segregation section (**Topic E**).

3.D. Estimating total yearly hours of unpaid work

To assess the value of time spent on unpaid work, international organizations have developed guidelines for constructing a satellite account of household production (United Nations, 2018). The main objective is to estimate the global value of unpaid work by converting time spent into an annual total of hours performed across various unpaid work activities by the population aged 15 and older.

According to these guidelines, the average amount of unpaid work performed by an individual includes four components: production of goods for own final use, unpaid domestic work, unpaid care work, and volunteering. The average daily time spent on these activities is multiplied by 365 to estimate the annual time. This annual time is then multiplied by the total adult population and converted into hours (by dividing by 60) to calculate the total volume of unpaid work. Estimates can be produced for the overall population and disaggregated by gender.

For more details on the methodology and extended analysis using Georgian data from 2021, see Charmes, 2024.

3.E. Task segregation

Comparative studies often analyze the *segregation* of tasks in specific activities. The most common example is the segregation of housework, where women consistently devote more time to *female-stereotyped* or *routine* tasks, while men spend more time on non-routine, *male-stereotyped* tasks. These studies typically focus on the size of the gender gap across aggregated tasks. However, the reduction of the gender gap in housework has not occurred uniformly across tasks, and higher levels of inequality are often linked to greater task segregation.

In this context, we propose calculating a segregation index for unpaid domestic tasks based on the categories described in **Topic B**. We also suggest applying this indicator to assess the segregation of care activities, particularly childcare, as well as different types of leisure activities.

3.F. Time poverty

The concept of time poverty refers to the lack of available personal time (Vega-Rapun et al., 2020). When analyzing the scarcity of personal time, it is important to consider its unequal distribution, which is significantly influenced by social factors such as class, gender, origin, age, and functional diversity. In this sense, the ability to control one's time, and thus achieve sovereignty over it, is shaped by structural factors that go beyond individual choice (Ruiz et al., 2023).

Studies on time poverty distinguish between necessary and committed activities—those including basic personal care and both paid and unpaid work—and the remaining discretionary time. The level of time poverty is typically determined based on available discretionary time. Thresholds are usually set as a percentage of the median discretionary time, most often at 50, 60, or 70 percent (Burchardt, 2008 for the United Kingdom; Kalenkoski et al., 2011 for the United States; Vega-Rapun et al., 2020 for Spain). Individuals with less discretionary time than the threshold are considered time poor. In essence, discretionary time reflects the degree of freedom individuals have after fulfilling their essential obligations and serves as an important indicator of well-being and work–life balance. Limited discretionary time is associated with stress, burnout, and reduced quality of life.

Another approach involves analyzing only the time spent on committed activities, such as paid work or a combination of paid and unpaid work. This method was used by Bardasi and Wodon (2010) for Guinea and by Najam-us-Saqib and G.M. Arif (2012) for Pakistan. Here, the time poverty line is set at 1.5 (and sometimes 2) times the median time spent on committed activities, with those spending significantly more time considered time poor.

The Levy Institute introduced a measure that considers both income and time deficits (Zacharias et al., 2012). The *Levy Institute Measure of Time Poverty* (LIMTIP) combines income and expenditure surveys with time-use surveys. A household is deemed to have a time deficit when the time spent on employment and necessary household production by all members exceeds a predefined threshold (available waking hours minus a set number of hours reserved for personal care and leisure). Households are also classified by income relative to the poverty line. For households above the income poverty line but experiencing time deficits, an adjustment is made: the monetary value of forgone income (due to reallocating time from paid work to household production) is estimated. If this adjustment pushes household income below the threshold, the household is reclassified as poor.

A mixed-methods approach can also be used. For example, Chopra and Zambelli (2017) combined quantitative surveys with in-depth interviews in India, Nepal, Rwanda, and Tanzania. They targeted women in the lowest income decile, working outside the home, and with at least one child under 18. This study identified four dimensions of time poverty: work intensity, lack of time for self-care, lack of time for caregiving, and lack of time for rest and leisure.

Finally, time-use surveys allow for estimating whether time poverty affects specific groups by combining the two approaches mentioned above: analyzing discretionary time and time spent on committed activities.

3.G. Simultaneous activities and multitasking

People often engage in more than one activity at a time. Unpaid work—particularly unpaid care work—is frequently performed alongside other tasks. Research shows that multitasking is associated with negative emotions, stress, psychological distress, and work–family conflict, especially for mothers (Offer and Schneider, 2011). These effects are less pronounced for fathers. In this context, the presence of children during unpaid work activities is more common for mothers, suggesting that women are often required to perform additional tasks while caring for children (Gershuny, 2000; Kingston and Nock, 1987; Sevilla-Sanz, 2010). This highlights the hidden burden of multitasking, as the time devoted to the less *valued* activity is often underestimated when only the primary activity is recorded.

To address this issue, time-use diaries allow respondents to report a secondary activity in addition to the primary one. The “with whom” dimension provides another way to capture simultaneous activities, particularly childcare. This approach enables more accurate measurement of childcare, including supervision that occurs while performing another task.

When collecting data through stylized questions, it is essential to avoid double-counting activities performed simultaneously in order to ensure accuracy.

3.H. Transportation

Time-use surveys collect information about transportation and commuting in various ways. By analyzing the main activities reported in diaries, it is possible to estimate both the total time spent on transportation and the reasons for traveling. Although the International Classification of Activities for Time-Use Statistics (ICATUS) activity list does not include a one-digit category specifically for travel, it provides detailed two-digit categories under major divisions. For example, code 18 refers to “travelling and commuting for employment,” while code 25 corresponds to “travelling, moving, transporting, or accompanying goods or persons related to own-use production of goods.”

From main activity data, the total time spent traveling can be estimated and further disaggregated by commute purpose. From the average time spent on each purpose, the percentage of time dedicated to different types of travel can be computed. These data also reveal whether short or long commutes are more common.

Transportation details can also be derived from the reported location of activities. Respondents who indicate being “in transit” specify the mode of transport (e.g., car, train, on foot). These data allow us to estimate the prevalence of different modes and calculate average time spent using each. Modes of transportation can be grouped depending on the research objective—for example, average time spent walking, distinguishing between private and public transport, or time spent traveling by car.

3.I. Flexible work arrangements

Studying flexible work through time-use surveys poses challenges, as typically only one diary (or occasionally two, one for a workday and one for a weekend day) is collected per respondent. Collecting multiple workday diaries would allow comparisons of work schedules, providing better insight into flexibility. Some time-use surveys include a “weekly schedule of working time” questionnaire, where employed respondents report the periods of the week during which they worked. However, this module is uncommon and was removed from the Harmonised European time use survey (HETUS) 2018 guidelines to streamline the survey process.

One way to explore flexible work arrangements is by analyzing the reported location of paid work activities. For respondents who report paid work in the diary, it is possible to determine whether they worked from home, either fully or partially. When calculating population-level measures, it is important to account for occupations that do not allow remote work. Depending on the indicator, it may be necessary to exclude employees who cannot work from home.

In addition to capturing the total time spent on paid work, diaries can identify when respondents start and end their workday. Between these two points, respondents may work continuously or intersperse work with other activities. One way to assess work flexibility is to examine the ratio between total paid work time and the span from work start to end. If respondents work continuously with few or no breaks, this ratio will approach 1. Working late hours (e.g., after 7 p.m.) may also serve as an indicator of flexible work arrangements.

3.J. Well-being

How individuals spend their daily lives is closely related to their well-being. Making time for activities we enjoy or find fulfilling is crucial for personal development. Conversely, being limited to obligatory tasks can lead to stress and discomfort. Activities hold different meanings across individuals—for example, while unpaid work is often viewed as unpleasant, some people may find particular household tasks satisfying. Cooking may be relaxing for some but stressful when it becomes a routine obligation. Similarly, time spent with children can be joyful at times and stressful at others.

Although there is broad agreement that time use is strongly related to well-being, developing a harmonized measure remains challenging. Some elements are collected in time-use surveys, but questions and methodologies vary across countries, limiting comparability. Estimates of time poverty (**Topic F**) offer one approach to evaluating well-being. Some surveys add a column where participants report their feelings during each time interval. This was the case in the United Kingdom time-use survey, but the results showed little variation in enjoyment levels by activity or gender, suggesting that the question design may have lacked clarity. In the American Time Use Survey, emotional data are collected for only three selected activities, with several emotional indicators—such as happiness, sadness, stress, tiredness, pain, and sense of meaning—recorded for each. Some surveys also ask whether respondents felt rushed during the diary day.

Another method involves asking participants to identify the most pleasant, unpleasant, and stressful activities of the day. This is the preferred approach in Eurostat guidelines (2009), which also recommend including an overall daily assessment. However, there is no widely accepted analytical framework for interpreting these results.

Ultimately, how well-being is measured depends heavily on the data available and the methods of collection.

SECTION 4. SET OF INDICATORS

The United Nations proposes a general indicator to monitor progress toward Goal 5.4 of the Sustainable Development Goals (SDGs): the proportion of time spent on unpaid domestic and care work, by sex, age, and location (United Nations Statistical Commission, 2017). In this section, we introduce a set of additional indicators that can be derived from time-use surveys. These indicators apply not only to unpaid domestic and care work but also provide insights into the overall time-use patterns of both women and men. Several of the indicators are relevant to multiple topics discussed in the previous section.

4.1. General differences in time use across all activities

The general indicator for all activities evaluates differences in the proportion of time spent on each activity by men and women. This indicator can only be calculated for surveys that cover a full 24-hour day, where the total reported time equals 1,440 minutes.

It can be interpreted as an **index of dissimilarity**, which compares the distribution of time use between two groups. This index quantifies gender inequality in time allocation across activities, providing a single summary measure of the extent of dissimilarity.

The index is calculated using the following formula:

$$\text{General Indicator} = \frac{1}{2} \sum_x \left| \frac{\text{Women's Time}_x}{1440} - \frac{\text{Men's Time}_x}{1440} \right|$$

Where:

- x refers to each activity or category of time use.
- Women's Time_x is the amount of time women spend on activity x .
- Men's Time_x is the amount of time men spend on activity x .
- 1,440 represents the total number of minutes in a day (24 hours \times 60 minutes).

Explanation:

- *Normalization by 1,440*: Dividing women's and men's time by 1,440 expresses time spent on each activity as a proportion of the full day. This ensures comparability across groups, as the values become percentages of daily time.
- *Difference calculation*: The absolute difference for each activity captures how much women's and men's time use diverges for that specific activity.
- *Summation*: Summing across all activities gives the total dissimilarity in time use.
- *Division by 2*: Dividing by 2 ensures that the index is scaled between 0 and 1.

Interpretation:

- A value of **0** indicates **complete similarity**, meaning men and women allocate their time identically across all activities.
- A value of **1** indicates **maximum dissimilarity**, meaning men and women spend time on entirely different sets of activities.
- The **closer the value is to 1**, the **more unequal** the time distribution between women and men.

4.2. Inequality index

Since some surveys do not capture a full 24-hour day (i.e., the total reported time does not sum to 1,440 minutes), we propose a variation of the dissimilarity measure that accounts for the total time spent on an activity by both men and women (see Garcia and Gracia, 2022). This **inequality index** is useful for assessing the level of gender imbalance in time spent on individual activities, where differences are common.

The inequality index for a given activity x is calculated as follows:

$$\text{Inequality Index}_x = \frac{\text{Women's Time}_x - \text{Men's Time}_x}{\text{Women's Time}_x + \text{Men's Time}_x}$$

Where:

- *Women's Time_x* is the amount of time women spend on activity x .
- *Men's Time_x* is the amount of time men spend on activity x .

Interpretation:

- The index ranges from -1 (all time spent by men) to 1 (all time spent by women).
- A value of 0 indicates that men and women spend **equal time** on the activity.
- This index can also be calculated at the **task level**. For example, domestic work can be broken down into specific tasks such as cleaning, cooking, laundry, odd jobs, grocery shopping, or household management and administration.

Calculating the **inequality index** for each of these tasks enables a more detailed understanding of how domestic work is shared between genders. The inequality index can also be applied to other categories of activity, such as childcare, adult care, or leisure, offering a flexible tool for assessing gendered patterns in time use across domains.

4.3. Segregation index

Inequality indices at the task level can be used to evaluate whether tasks within a broader category are segregated by gender. Previous studies have shown, for example, that housework remains segregated: women spend more time on routine, “female-stereotyped” tasks (e.g., cleaning, cooking), while men spend more time on non-routine, “male-typed” tasks (e.g., repairs) (Carlson 2022; García-Román and Ophir, 2024).

To summarize this task-level segregation within a broader category (e.g., housework), we compute a **segregation index** as a weighted mean of the absolute values of the task-level inequality indices. Each task is weighted by the proportion of total time it represents within the broader category.

The segregation index for a given activity x is calculated as follows:

$$\text{Segregation Index} = \frac{\sum_{x=\text{task}} |\text{Inequality Index}_x \times \left(\frac{\text{Women's Time}_x + \text{Men's Time}_x}{\text{Total HW}} \right)|}{n_{\text{tasks}}}$$

Where:

- *Inequality Index_x* is the inequality index for task *x*.
- *Women's Time_x + Men's Time_x* is the total time spent on task *x*.
- *Total HW* is the total time spent on housework by both women and men.
- *n_{tasks}* refers to the number of tasks considered.

Interpretation:

- The segregation index ranges from **0** (all tasks are shared equally between men and women) to **1** (all tasks are completely segregated).
- Higher values indicate stronger gender specialization across tasks.

The **segregation index** can also be calculated for other categories of activity, such as childcare, adult care, or leisure, providing a flexible tool for assessing gendered patterns in time use across domains.

4.4. Women-to-men ratio

- The women-to-men ratio is a straightforward and insightful measure for comparing the time that women and men allocate to a specific activity.
- The ratio women-to-men is calculated as follows:

$$\text{Ratio (women to men)} = \frac{\text{Time devoted by women to activity X}}{\text{Time devoted by men to activity X}}$$

Interpretation:

- A value close to **1** indicates that women and men spend roughly **equal time** on the activity.
- A value closer to **0** suggests that **men spend more time than women** on the activity.
- The indicator has no upper limit. **Values greater than 1 occur when women spend more time than men** on the activity. The higher the number, the more it reflects that women are spending disproportionately more time compared to men.

This ratio can be applied to the total workload, which combines both paid and unpaid work activities. It can also be segmented by demographic groups (e.g., by education level or parental status) to reveal differences in time allocation within populations. Using this ratio makes it easier to track gender disparities in time allocation across different types of work and responsibilities.

4.5. Probability of men to outperform women in an activity

Following an approach similar to that used by Bergeron-Boucher et al. (2022) to study inequality in lifespan between sexes, we propose a new indicator to calculate inequalities in a specific activity between men and women. This formula provides a probabilistic measure of gender inequality in time spent on specific activities. One such activity is housework, but the indicator can also be applied to others to determine which are the most unequal. Probabilities can be presented as percentages to facilitate interpretation.

This method does not simply compare the average time spent by men and women. Instead, it incorporates the distribution of time, providing a more nuanced measure of inequality. For example, even if men and women have similar averages, the probability that men outperform women could be higher if men's distribution is skewed toward higher values. Since time distribution differs significantly between weekdays and weekends, only diaries from Monday to Friday are included in the calculation.

The indicator is calculated as follows:

$$\text{Probability Men to Outperform Women} = \sum_{x=0}^{1440} P_{\text{Men},x} \cdot P_{\text{Women}<x} + d$$

Where:

- x corresponds to each number of minutes spent on activity X .
- $P_{\text{Men},x}$ is the proportion of men who spend exactly x minutes on the activity.
- $P_{\text{Women}<x}$ is the proportion of women who spend less than x minutes on the activity.
- d corresponds to the probability that individuals in both populations spend the same amount of time:

$$d = \frac{\sum_{x=0}^{1440} P_{\text{Men},x} \cdot P_{\text{Women},x}}{2}$$

Explanation:

- *Activity time range*: The summation runs from $x = 0$ to $x = 1440$, covering the full range of possible minutes allocated to an activity.
- *Proportion of men spending x minutes*: $P_{Men,x}$ is computed as the proportion of men who spend exactly x minutes on the activity:

$$P_{Men,x} = \frac{\text{Number of men spending exactly } x \text{ minutes on the activity}}{\text{Total number of men}}$$

- *Proportion of women spending less than x minutes*: $P_{Women < x}$ is calculated by summing the frequencies of women who spend less than x minutes and dividing by the total number of women:

$$P_{Women < x} = \frac{\sum_{y < x} \text{Number of women spending } y \text{ minutes on the activity}}{\text{Total number of women}}$$

This represents how many women are outperformed by men who spend x or more minutes on the activity.

- *Combining probabilities*: The product $P_{Men,x} \cdot P_{Women < x}$ gives the joint probability that a man spends exactly x minutes while a woman spends less than x minutes.
- *Summation*: Summing across all x gives the total probability that a randomly selected man spends more time on the activity than a randomly selected woman.

Interpretation:

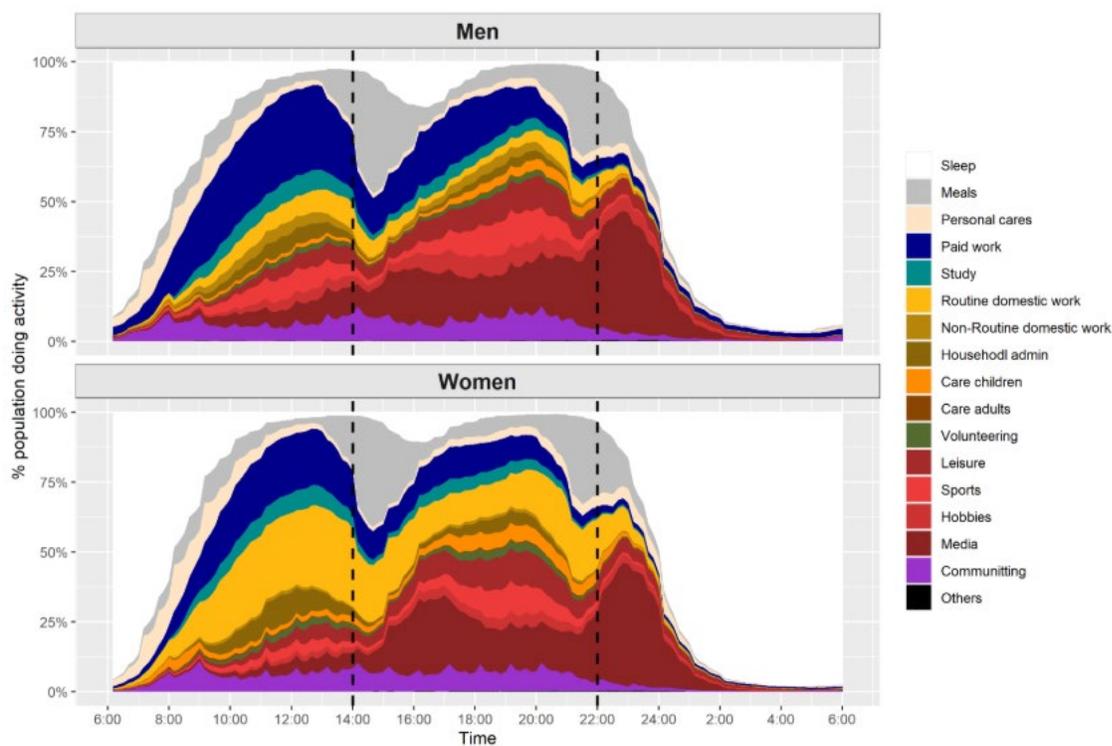
- A value close to **1** means it is **highly probable that men spend more time** on the activity than women.
- A value close to **0** means **men rarely spend more time than women** on that activity.
- A value **around 0.5** indicates a roughly **equal probability** of men and women spending more time.

4.6. Tempo-graphs

Tempo-graphs provide a visual representation of the most prevalent activities, the duration of time spent on each activity, and the sequential arrangement of activities throughout the day. They show the proportion of the population engaged in each activity at each moment of the day, highlighting the different rhythms of daily life among population groups.

The X-axis corresponds to the start and end times of the diary. The Y-axis shows the percentage of the target population engaged in each activity. At any given moment, the sum of all activities is 100%.

Figure 5. Example of tempo-graph. Distribution of activities during the day in Spain by gender



Source: Spanish Time Use Survey 2009–2010

4.7. Time poverty

The most common measures of time poverty use time as a direct variable, and they more often compute relative poverty rather than absolute values. The indicators we propose are based on these two premises. Time poverty is calculated only for the population aged 16–64, to exclude children and retired individuals, whose daily routines differ significantly. To account for differences in time use on weekends—when paid work is less common—only diaries from Monday to Friday are included.

To define time poverty, it is necessary to establish a threshold line based on the median available time for the overall population. The most common time poverty line is set at 60 percent of the median available time. Available time (also referred to as discretionary time in some studies) is the time remaining after accounting for personal care, production of goods for own final use, unpaid work, and paid work (also called committed time).

Time poverty can be calculated as follows:

Committed time (minutes) = Personal care + Paid work + Production of goods for own final use + Unpaid work + Studies

- **Personal care:** sleep and other necessary activities such as eating and drinking. Sleep is capped at 8 hours per day to exclude individuals reporting excessive sleep by choice.
- **Paid work:** labor market activities, commuting to work, and time devoted to job seeking.
- **Production of goods for own final use:** activities in which households or entities produce goods for their own consumption or use, rather than for sale or market exchange.
- **Unpaid work:** domestic tasks, childcare, and unpaid care for household members and other households.
- **Studies:** school attendance and time spent studying.

Available time (minutes) = 1,440 – Committed time

Time poverty line (60% threshold) = Median(Available time) × 0.60

Once the time poverty line is established, the time poverty rate can be computed for the overall population or for subgroups such as men and women, by education level, employment status, or type of living arrangement. Results are typically presented as percentages.

$$\text{Time poverty rate} = \frac{\text{Population below time poverty line}}{\text{Total population}} \times 100$$

An alternative measure of time poverty, used in developing countries (Bardasi and Wodon, 2010; Najam-us-Saqib and Arif, 2012), considers only total work time and establishes the poverty line as 1.5 or 2 times the median of total work time. In our estimates, we use two times the threshold.

Total work time (minutes) = Paid work + Own-account work + Production of goods for own final use + Unpaid work + Studies

Time poverty line (2x threshold) = Median(Total work time) × 1.5

$$\text{Time poverty rate} = \frac{\text{Population above time poverty line}}{\text{Total population}} \times 100$$

4.8. Prevalence of home-based work

This indicator measures the prevalence of home-based work, reflecting the growing trend of working from home as a means for individuals to balance work and family responsibilities. It also captures structural characteristics of some developing economies, where many workshops are home-based (Cling, 2018).

The indicator is calculated for the population reporting at least one episode of paid work. It is derived from the location variable available in time-use surveys such as HETUS, ATUS, or MTUS, where “at home” is typically one of the designated location codes.

$$\text{Prevalence of home-based work} = \frac{\text{Population who reported at least one episode of paid work at home}}{\text{Population who reported at least one episode of paid work}}$$

An alternative indicator considers the **total time spent on paid work at home**. This measure captures situations where individuals divide their work time between home and other locations.

$$\text{Proportion of home-based work} = \frac{\text{Time of paid work at home}}{\text{Total time of paid work}}$$

In both cases, values range between 0 and 1. A value closer to 1 indicates that a **larger proportion of paid work is performed at home**.

This indicator is computed for all paid work and across all occupations. However, since not all occupations can be performed at home (e.g., agriculture, manual labor), some may be excluded from the calculation. Similarly, results can be presented for the overall population or disaggregated by occupation type, industry, or other demographic characteristics.

4.9. Work continuity schedule

This indicator measures the continuity of paid work throughout the day by comparing the total time spent on paid work with the time span between the start and end of the workday. Its purpose is to capture the extent to which paid work is performed in a continuous block with minimal interruptions.

$$\text{Work continuity} = \frac{\text{Time spent on paid work}}{\text{Hour work schedule end} - \text{Hour work schedule start}}$$

Where:

- **Time spent on paid work:** total duration reported in the diary when the main activity is paid work.
- **Hour work schedule start:** the earliest time in the diary when paid work is recorded as the main activity.
- **Hour work schedule end:** the latest time in the diary when paid work is recorded as the main activity.

The indicator takes values between **0** and **1**. A value **close to 1** indicates a **more continuous workday** with few breaks, suggesting lower flexibility or more structured schedules. **Lower values** indicate **more fragmented work patterns**, potentially reflecting part-time work, multiple work shifts, or greater flexibility.

4.10. Prevalence of late work

This indicator measures the proportion of employees who work during late hours. Late hours are defined as any instance of paid work occurring after 7 p.m. The indicator focuses on employees who primarily work daytime hours, defined as between 8 a.m. and 10 p.m., in order to exclude night-shift workers who may follow a different schedule.

$$\text{Prevalence of late work} = \frac{\text{Population who reported paid work after 7 pm (and before 10 pm)}}{\text{Population who reported paid work between 8 am and 10 pm}}$$

Similar to the prevalence of telework, an alternative indicator that considers the total amount of time spent working late can also be calculated:

$$\text{Proportion of late work} = \frac{\text{Time of paid work during 7 pm and 10 pm}}{\text{Total time of paid work between 8 am and 10 pm}}$$

4.11. Prevalence of mode of transportation

This indicator uses the mode of transport reported in the “where the activity is done” variable when the main activity is travel. It can be computed for specific modes of transportation (e.g., car, bus) or grouped categories (e.g., private vs. public). It can also be broken down by the purpose of the trip (paid work, study, leisure). The purpose is to quantify the prevalence of different modes of transport based on reported travel activities.

The prevalence of mode of transportation can be calculated as follows:

$$\text{Prevalence of mode of transport } X = \frac{\text{Users of mode of transportation } X}{\text{Total population}}$$

Where:

- **Users of mode of transportation:** the population who reported at least one episode of travel using a specific mode of transport.
- Similarly to the prevalence of home-based work, an alternative indicator can be calculated to account for the total time spent traveling by each mode:

$$\text{Proportion of time of mode of transportation } X = \frac{\text{Time of traveling by mode } X}{\text{Total time of traveling}}$$

Where:

- **Time of traveling by mode:** total time (in minutes or hours) spent traveling as a main activity using the specified mode.
- **Total time of traveling:** total time spent traveling across all modes of transport.

These indicators range from 0 to 1. Values **closer to 0** indicate that the **mode of transport is rarely used**, while values **closer to 1** indicate **higher prevalence**.

4.12. Simultaneity of activities

While simultaneity of activities can occur across all types of activities, it is most commonly observed in unpaid work. Therefore, the indicators proposed here focus on domestic tasks and childcare, with a particular emphasis on gender differences. The calculations for these indicators account not only for the primary activity but also for secondary activities (for domestic work) and the combination of secondary activities with the presence of a child (for childcare).

$$\text{Ratio_domestic} = \frac{\text{Total domestic time (women)}}{\text{Total domestic time (men)}}$$

$$\text{Ratio_childcare} = \frac{\text{Total childcare time (women)}}{\text{Total childcare time (men)}}$$

Where:

- **Total_domestic:** total time spent on domestic work as a primary or secondary activity.
- **Total_childcare:** total time spent on childcare as a primary or secondary activity, or in the presence of a child.

Comparing these ratios with those calculated based only on primary activities will help identify whether multitasking is more prevalent among women or men.

5. DIMENSIONS OF DATA ANALYSIS

While cross-country comparisons of time use provide valuable insights, incorporating variables that enable the study of behavior across diverse population groups greatly enriches the analysis. As noted in **Section 2.3**, sociodemographic variables commonly included in time-use surveys facilitate more detailed examination. These variables allow researchers to explore how time is distributed among different groups, identify characteristics associated with greater inequality in time use, and assess whether such inequalities manifest uniformly across contexts.

When establishing disaggregation categories for each dimension, it is important to consider survey sample size to ensure that each category includes a sufficient number of respondents for reliable representation. Moreover, harmonizing data from independent surveys poses challenges, particularly when combining data from multiple countries that use different classifications.

Assuming gender is a key variable in explaining individuals' time use, we propose the following dimensions as essential for a deeper understanding of inequalities:

- **Age:** At a minimum, it is important to differentiate between younger populations, working-age adults, and older adults who may no longer be active in the labor market. Additionally, children's time use—often dominated by education—should be considered. The minimum age for diary completion varies across countries. Age analysis also captures differences in daily rhythms across generations.

Proposed basic groups: 15–29, 30–59, and 60 and above.

- **Living arrangements:** A fundamental categorization should account for partnership status and parenthood. Although categorization may be complex in some samples, clear definitions are essential. Suggested categories include: single-person households, couples without children, couples with minor children, single parents living with children, and other living arrangements.
- **Educational attainment:** Harmonizing educational categories is challenging due to varying national education systems. Using the *International Standard Classification of Education* (ISCED), a simplified scheme centered on secondary education can be applied, with categories such as: below secondary, secondary completed, and above secondary.
- **Labour market participation:** A primary distinction should be made between employed and non-employed populations. Where data permit, employed individuals can be subdivided into full-time and part-time workers, while the non-employed can be further divided into unemployed and inactive populations.

FINAL REMARKS

Time-use surveys are invaluable tools for analyzing how populations allocate their time. They capture a broad range of information beyond primary activities, offering rich insights into daily life from the perspective of people’s activities. Nationally representative time-use surveys also play a critical role in compiling National Household Satellite Accounts (NHSA) by providing detailed data on unpaid work, which is often excluded from traditional national accounts. This guideline has summarized the key data collected in these surveys, highlighted various topics for exploration, and proposed innovative indicators that go beyond measuring average time spent on activities.

Despite efforts by international organizations such as the United Nations Statistics Division and Eurostat to standardize data collection, cross-country comparisons remain challenging—especially when working with raw datasets from national statistical institutes. Establishing clear definitions for fundamental data elements is essential, even if this requires excluding certain details. Measures must be as objective as possible to minimize cross-country biases, particularly those arising from perceptions or stigmas associated with specific individual characteristics. As a result, some findings in the multi-country comparison included in this guideline should be interpreted with caution, as observed differences may be partly artificial.

Access to microdata is also not always guaranteed. In many cases, limited availability restricts the scope of analysis. Given the high cost and complexity of conducting time-use surveys, we strongly encourage national statistical institutes to make the most detailed data possible available. Comprehensive datasets—including complete household rosters with basic demographic information and full 24-hour diaries—would substantially enhance the quality and depth of analysis.

REFERENCES

- Bardasi, E., and Wodon, Q. (2010). Working long hours and having no choice: Time poverty in Guinea. *Feminist Economics*, 16(3), 45–78. <https://doi.org/10.1080/13545701.2010.508574>
- Bergeron-Boucher, M.-P., Alvarez, J.-A., Kashnitsky, I., and Zarulli, V. (2022). Probability of males to outlive females: An international comparison from 1751 to 2020. *BMJ Open*, 12(8), e059964. <https://doi.org/10.1136/bmjopen-2021-059964>
- Bonke, J. (2005). Paid work and unpaid work: Diary information versus questionnaire information. *Social Indicators Research*, 70(3), 349–368. <https://doi.org/10.1007/s11205-004-1547-6>
- Carlson, D.L. (2022). Reconceptualizing the gendered division of housework: Number of shared tasks and partners' relationship quality. *Sex Roles* 86(9–10): 528–543. doi:10.1007/s11199-022-01282-5.
- Burchardt, T. (2008). *Time and income poverty* (CASE Report No. 57). Centre for Analysis of Social Exclusion. <http://sticerd.lse.ac.uk/dps/case/cr/CASereport57.pdf>
- Charmes, J. (2024). *Unpaid household work satellite account in Georgia*. UN Women.
- Chopra, D., and Zambelli, E. (2017). *No time to rest: Women's lived experiences of balancing paid work and unpaid care work*. Institute of Development Studies.
- Cling, J.-P. (Ed.). (2018). *The informal economy in developing countries*. Routledge.
- Dribe, M., and Stanfors, M. (2009). Does parenthood strengthen a traditional household division of labor? Evidence from Sweden. *Journal of Marriage and Family*, 71(1), 33–45. <https://doi.org/10.1111/j.1741-3737.2008.00578.x>
- Durán, M. Á., and Rogero-García, J. (2009). La investigación sobre el uso del tiempo. *Cuadernos Metodológicos*, 44. Madrid: CIS.
- Eurostat. (2009). *Harmonised European time use surveys: 2008 guidelines*. Eurostat.
- Fisher, K., Gershuny, J., Flood, S. M., Backman, D., and Hofferth, S. L. (2019). *Multinational Time Use Study Extract System: Version 1.3* [Dataset]. Minneapolis, MN: IPUMS. <https://doi.org/10.18128/D062.V1.3>
- García Román, J. and Gracia P. (2022). Gender Differences in Time Use across Age Groups: A Study of Ten Industrialized Countries, 2005–2015. *PLOS ONE* 17(3): e0264411. doi: 10.1371/journal.pone.0264411.
- García-Román, J.; Ophir, A. (2024) "Housework Time and Task Segregation: Revising Gender Inequality Among Parents in 15 European Countries". *Demographic Research*, 50 (19): 503-514. doi.org/10.4054/DemRes.2024.50.19
- Gershuny, J. (2000). *Changing times: Work and leisure in post-industrial society*. Oxford University Press.
- Gershuny, J., and Sullivan, O. (1998). The sociological uses of time-use diary analysis. *European Sociological Review*, 14(1), 69–85. <https://doi.org/10.1093/oxfordjournals.esr.a018228>
- Kalenkoski, C. M., Hamrick, K. S., and Andrews, M. (2011). Time poverty thresholds and

rates for the US population. *Social Indicators Research*, 104(1), 129–155.

<https://doi.org/10.1007/s11205-010-9732-2>

- Kan, M. Y. (2008). Measuring housework participation: The gap between “stylised” questionnaire estimates and diary-based estimates. *Social Indicators Research*, 86(3), 381–400. <https://doi.org/10.1007/s11205-007-9184-5>
- Kan, M. Y., and Pudney, S. (2008). Measurement error in stylized and diary data on time use. *Sociological Methodology*, 38(1), 101–132. <https://doi.org/10.1111/j.1467-9531.2008.00197.x>
- Kingston, P. W., and Nock, S. L. (1987). Time together among dual-earner couples. *American Sociological Review*, 52(3), 391. <https://doi.org/10.2307/2095358>
- Kitterød, R. H., and Lyngstad, T. H. (2005). Diary versus questionnaire information on time spent on housework: The case of Norway. *Electronic International Journal of Time Use Research*, 2(1), 13–32. <https://doi.org/10.13085/eIJTUR.2.1.13-32>
- Maina, L. W., and Kimani, E. (2019). *Gendered patterns of unpaid care and domestic work in the urban informal settlements of Nairobi, Kenya: Findings from a household care survey – 2019*. Oxfam. <https://doi.org/10.21201/2019.5068>
- Mückenberger, U. (2011). Time abstraction, temporal policy and the right to one’s own time. *KronoScope*, 11(1–2), 66–97. <https://doi.org/10.1163/156852411X595288>
- Najam-us-Saqib, and Arif, G. M. (2012). Time poverty, work status and gender: The case of Pakistan. *The Pakistan Development Review*, 51(1), 23–46. <https://doi.org/10.30541/v51i1pp.23-46>
- Offer, S., and Schneider, B. (2011). Revisiting the gender gap in time-use patterns: Multitasking and well-being among mothers and fathers in dual-earner families. *American Sociological Review*, 76(6), 809–833. <https://doi.org/10.1177/0003122411425170>
- Robinson, J. P. (1999). The time diary method: Structure and uses. In *Time use research in the social sciences* (pp. 47–89).
- Ruiz, S., Monge, G., Martí, B., and Paricio, A. (2023). *De la pobresa de temps al temps per a la vida* (Col·lecció “Dossiers del temps”). Ajuntament de Barcelona. <https://bcnroc.ajuntament.barcelona.cat/jspui/handle/11703/132742>
- Sayer, L. C. (2005). Gender, time and inequality: Trends in women’s and men’s paid work, unpaid work and free time. *Social Forces*, 84(1), 285–303. <https://doi.org/10.1353/sof.2005.0126>
- Sevilla, A. (2014). On the importance of time diary data and introduction to a special issue on time use research. *Review of Economics of the Household*, 12(1), 1–6. <https://doi.org/10.1007/s11150-014-9242-0>
- Sevilla-Sanz, A. (2010). Household division of labor and cross-country differences in household formation rates. *Journal of Population Economics*, 23(1), 225–249. <https://doi.org/10.1007/s00148-009-0254-7>
- Szalai, A. (1972). *The use of time: Daily activities of urban and suburban populations in twelve countries*. Mouton.

- United Nations. (2018). *Guide on valuing unpaid household service work*. United Nations. <https://doi.org/10.18356/d78ca32d-en>
- United Nations. (2021). *International classification of activities for time-use statistics 2016*. United Nations.
- United Nations Statistical Commission. (2017). *Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development*. United Nations.
- Vega-Rapun, M., Domínguez-Serrano, M., and Gálvez-Muñoz, L. (2020). The multidimensionality of poverty: Time poverty in Spain. *Journal of Time Use Research*, 1–16. <https://doi.org/10.32797/jtur-2020-2>
- Zacharias, A., Antonopoulos, R., and Masterson, T. (2012). *Why time deficits matter: Implications for the measurement of poverty*. Levy Economics Institute. https://www.levyinstitute.org/pubs/rpr_08_12.pdf