

>Time Use Data:

A window into society

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How do you spend your time?

- The answer to this question can help us understand SO MANY THINGS about society.
- Time use survey is used across the social sciences, from urban planning to economics to sociology.
- At its core, time use survey usually asks:
 - What do you do?
 - When did you do it?
 - Who did you do it with?
 - Where did you do it?
 - How did you do it?
 - What was the sequence of the things you did?

Think about it 🤔 :

how to collect people's time use?

- If you want to do a time use survey to collect information regarding how much time respondents spent on various activities in the day before survey day (yesterday), what questions would you ask?

Think about it 🤔 :

how to collect people's time use?

“Individual-based”

- How much time did you spend on sleeping?
- Where were you when you were sleeping?
- Who were you with when you were sleeping?
- How much time did you spend on ... (e.g., working, traveling, socializing)

“Episode-based”

- Think about what you have done yesterday. Let's start from the first activity at 4:00 in the morning:
 - What were you doing at 4:00am?
 - Starting at 4:00 am, how long did this activity last?
 - Where were you?
 - Who were you with?



Think about it 🤔 :

how to collect people's time use?

“Individual-based”

- How much time did you spend on sleeping?
- Where were you when you were sleeping?
- Who were you with when you were sleeping?
- How much time did you spend on ... (e.g., working, traveling, socializing)

“Episode-based”

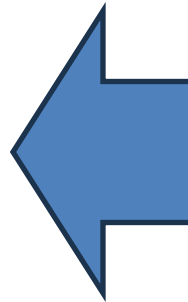
- Think about what you have done yesterday. Let's start from the first activity at 4:00 in the morning:
 - What were you doing at **7:35am**?
 - Starting at **7:35am**, how long did this activity last?
 - Where were you?
 - Who were you with?



We choose Episode-based questions. But why?

“Individual-based”

- How much time did you spend on sleeping?
- Where were you when you were sleeping?
- Who were you with when you were sleeping?
- How much time did you spend on ... (e.g., working, traveling, socializing)



“Episode-based”

- Think about what you have done yesterday. Let's start from the first activity at 4:00 in the morning:
 - What were you doing at **7:35am**?
 - Starting at **7:35am**, how long did this activity last?
 - Where were you?
 - Who were you with?



Morning Time, am	What were you doing? <small>Please record your main activity for each 10-minute period.</small>	What else were you doing? <small>Write in the most important activity you were doing at the same time</small>	Where were you? <small>e.g. At home, at friends, in car, on bus, train, cycling, walking</small>	Were you with anybody? <small>Please mark the boxes. See example on page 3.</small>				
	<small>Enter one main activity on each line.</small>			<small>Alone or with people you don't know</small>	<small>Children up to 9 living in your household</small>	<small>Children aged 10 to 14 living in your household</small>	<small>Other household members</small>	<small>Other persons that you know</small>
7:00 - 7:10	Sleeping			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7:10 - 7:20	↓			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7:20 - 7:30	Had a shower		At home	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7:30 - 7:40	Made breakfast		↓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7:40 - 7:50	Ate breakfast	Read newspaper	↓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7:50 - 8:00	Did washing up		↓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8:00 - 8:10	Got my son dressed	Talked with my son	↓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8:10 - 8:20	Walked to school with son	↓	Walking	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8:20 - 8:30	Dropped son off at school		↓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8:30 - 8:40	Walked to bus stop		↓	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8:40 - 8:50	Travel by bus to work	Read newspaper	On the bus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8:50 - 9:00	↓	↓	↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9:00 - 9:10	↓	↓	↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9:10 - 9:20	Walked from bus stop to main job		Walking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9:20 - 9:30	↓		↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9:30 - 9:40	↓		↓	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9:40 - 9:50	Main job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9:50 - 10:00	↓			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 1: Part of the 2000/1 UK HETUS diary form

Pros:

- More intuitive to respondents (instead of researchers/ investigators!)
- Easily recall
- International comparison
- Continuous 24-hour period

Cons:

- Hard to answer
- Difficulty in coding
- Hard to be digitalized

Using time use data in GGR 274

- You will be working with the time use data from Statistics Canada in this course.
- Canada does a national time use survey every five years
 - You can access these datasets at chass.utoronto.ca going back to 1986
 - Most recent: 2022
- Statistics Canada describes the survey in more detail here:
 - <https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&Id=1268587>

So what data does Statistics Canada Collect?

- Use the episode-based method (but in a digital form)
- Belong to General Social Survey (GSS) every 5 years
- Target population for the survey is non-institutionalized persons 15 years of age or older, living in the 10 provinces across Canada
- Sample size of approximately 20,000 respondents
 - weights computed to help make responses nationally representative
- Overview of 2019 survey from Stats Can:

<https://www150.statcan.gc.ca/n1/en/pub/89f0115x/89f0115x2019001-eng.pdf?st=1YxqIEvL>

So what data does Statistics Canada Collect?

- Episode File:

```
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
CASEID,pumfid,dday,epino,wapi,wght,epi,duration,endmin,endtime,location,starttime,startmin,techflag,totepiso,tui_01,tui_06a,tui_06b,tui_06c,tui_06d,tui_06e,tui_06f,tui_06g,tui_06h,tui_06i,tui_06j,tui_03a,tui_03b,tui_07,tui_10
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10001,10001,5,11,0.0000,8516.6140,90,1350,"2230",300,"2100",1260,2,12,41,2,1,2,2,2,2,2,2,2,2,2,2,999,999,2,"96"
10001,10001,5,12,0.0000,8516.6140,330,1680,"0400",300,"2230",1350,2,12,1,2,1,2,2,2,2,2,2,2,2,2,2,996,996,2,"08"
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One person with 18 episodes (activities) on Saturday.

So what data does Statistics Canada Collect?

- Main (Individual) File (aggregated from episode file):



 MAIN FILE - GSS Time Use 2015.csv

pumpfid, wght, pnr, survmth, wtsbs_001, agecsg, agegr10, agehscdy, agegrgrd, chh0014c, chnkidc, cxr0014c, cxrflag, cxrttime6, hsdsizec, hsdeligc, livarr08, livarr11, marstat, multigen, pnrnum, sex, sexpr, prvr, luc, rst, gtu, 110, gtu, 130, dvtday, dur01, dur02, dur03, dur04, dur05, dur06, dur07, dur08, dur09, dur10, dur11, dur12, dur13, dur14, dur15, dur16, dur17, dur18, dur19, dur20, dur23, dur24, dur25, dur26, dur27, dur28, dur29, dur30, dur31, dur32, dur33, dur34, dur35, dur36, dur37, dur38, dur39, dur40, dur41, dur42, dur43, dur44, dur45, dur46, dur47, dur48, dur49, dur50, dur52, dur53, dur54, dur55, dur56, dur57, dur58, dur59, dur60, dur61, dur62, dur63, dur65, dur69, dur80, dur81, dur82, dur83, dur84, dur85, dur86, dur87, dur88, dur89, dur90, dur91, dur92, dur93, dur94, dur95, dur96, dur97, dur98, dur99, dur100, dur1302, dur1303, dur1304, dur1305, dur1306, dur1307, dur1308, dur1309, dur1310, dur1311, dur1312, dur1313, dur1314, dur1315, dur1316, dur1317, dur1318, dur1319, 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mrw_05, mrw_20, mrw_30, mrw_40, mrw_d40a, mrw_d40b, mrw_10, agecslwkc, wet_110, wet_171, rbi_10, rbi_20, wti_130, noc110y, naic12cy, wly_145, wly_150, wly_160, wly_170c, noc110y, naic12cy, whw_110, whw_120c, whw_130c, whw_140c, whw140c, whw_d141, whw_160a, whw_160b, whw_160c, whw_160d, whw_160e, whw_160f, whw_160g, whw_160h, whw_160i, whw_210, whw_230, wfs_10, src_10, src_20a, src_20b, src_20c, src_20d, src_20e, src_20f, src_20g, src_20h, wtb_10, b_20, hrh_10a, hrh_10b, hrh_10c, hrh_10d, hrh_10e, hrh_10f, att_120, tcs_140a, tcs_140b, tcs_140c, tcs_140d, tcs_140e, tcs_140f, tcs_140g, tcs_140h, tcs_140i, tcs_140j, tcs_190, escl_01, edm_02, ehg_01, map_10, c_map_130, dwelc, lrc_10, lrc_20, agearrc, brthcan, brthmacr, brthmcen, brthfcan, bpr_16, dcit, yrarr1, brthprc, amb_01, vismin, reliflg, ree_02, ree_03, flr_110, lan_01, lanhome, lanhmth, lanm, lanmth, lncgl, hlnco1, wtsbs_002, wtsbs_003, wtsbs_004, wtsbs_005, wtsbs_006, wtsbs_007, wtsbs_008, wtsbs_009, wtsbs_010, wtsbs_011, wtsbs_012, 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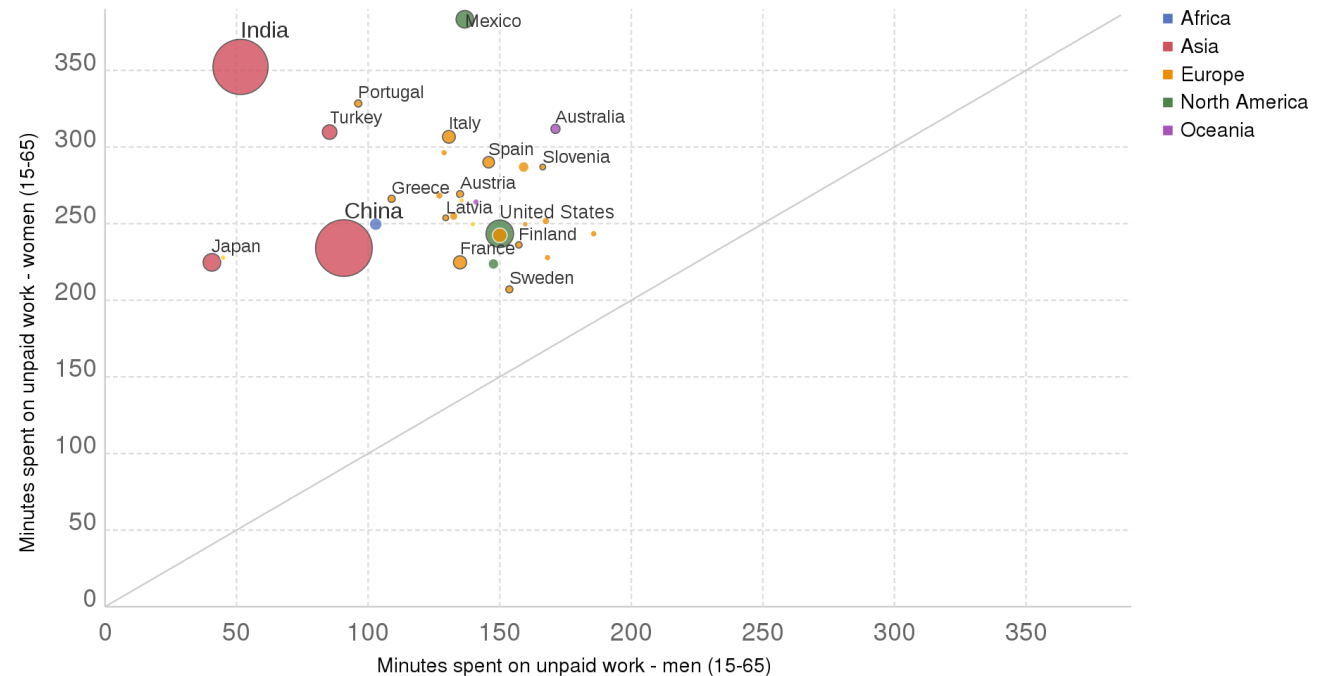
The guy with 18 activities
but aggregated in duration

Exploring time use data

- The power of these data comes from our ability to explore **aggregate trends**, as well as **individual patterns**
- At the **aggregate level**, we can examine type of time use (let's say unpaid work) and split our dataset using another.
- World Bank Blog on the importance of time use data:
 - <https://blogs.worldbank.org/opendata/why-time-use-data-matters-gender-equality-and-why-it-s-hard-find>

Time spent on unpaid work, per day, men vs women

Average minutes spent on unpaid work or study, per day, by sex (ages 15-65). Unpaid work activities include: routine housework; care for household members; child care; adult care; care for non-household members; volunteering; travel related to household activities; other unpaid work. Estimates come from time-use surveys and include both weekdays and weekends. The survey years differ across countries. See the source description for the survey year used for each country.

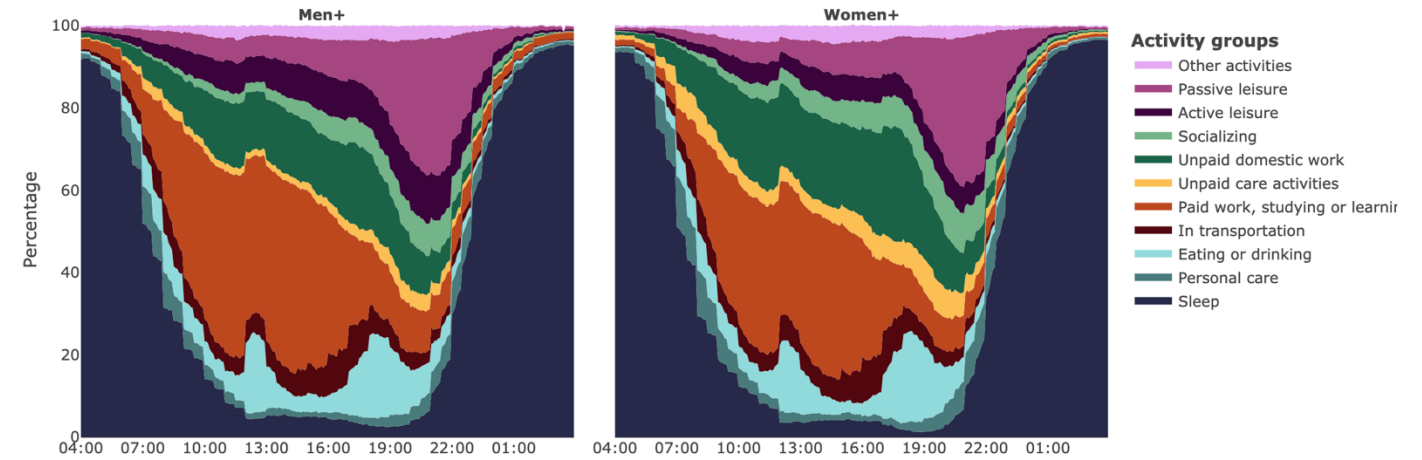


Source: OECD Gender Data (2018), Population (Gapminder, HYDE(2016) & UN (2019))

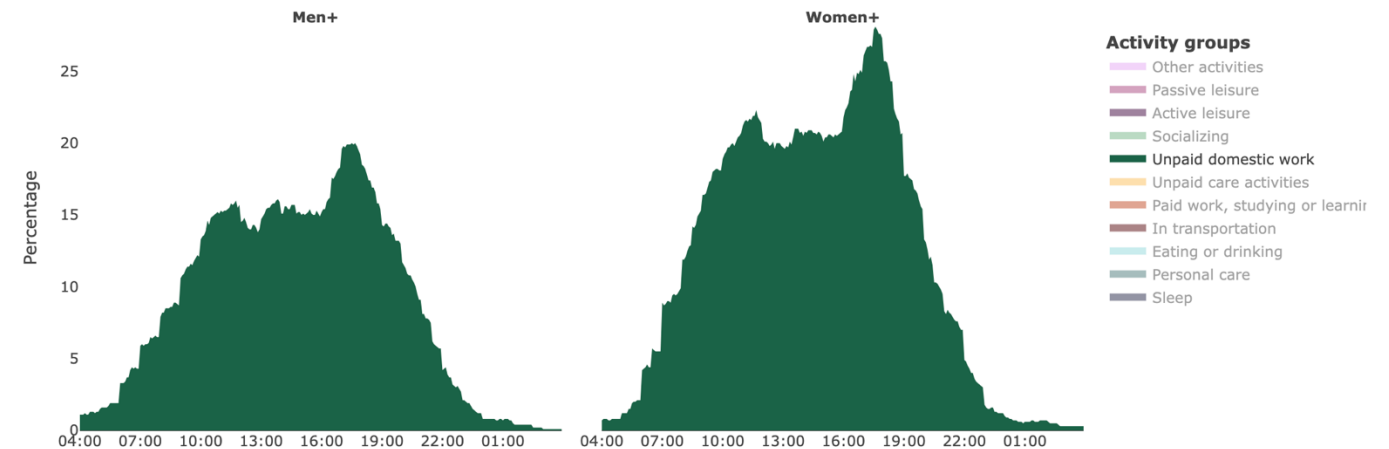
Exploring time use data

- Statistical Canada provides an interactive tool for 2022 Time Use Survey data (the most recent survey)
- You're welcome to explore!
- <https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2025002-eng.htm>

Percentage of participants in various activities, by time of day and gender:
Total, weekdays and weekends

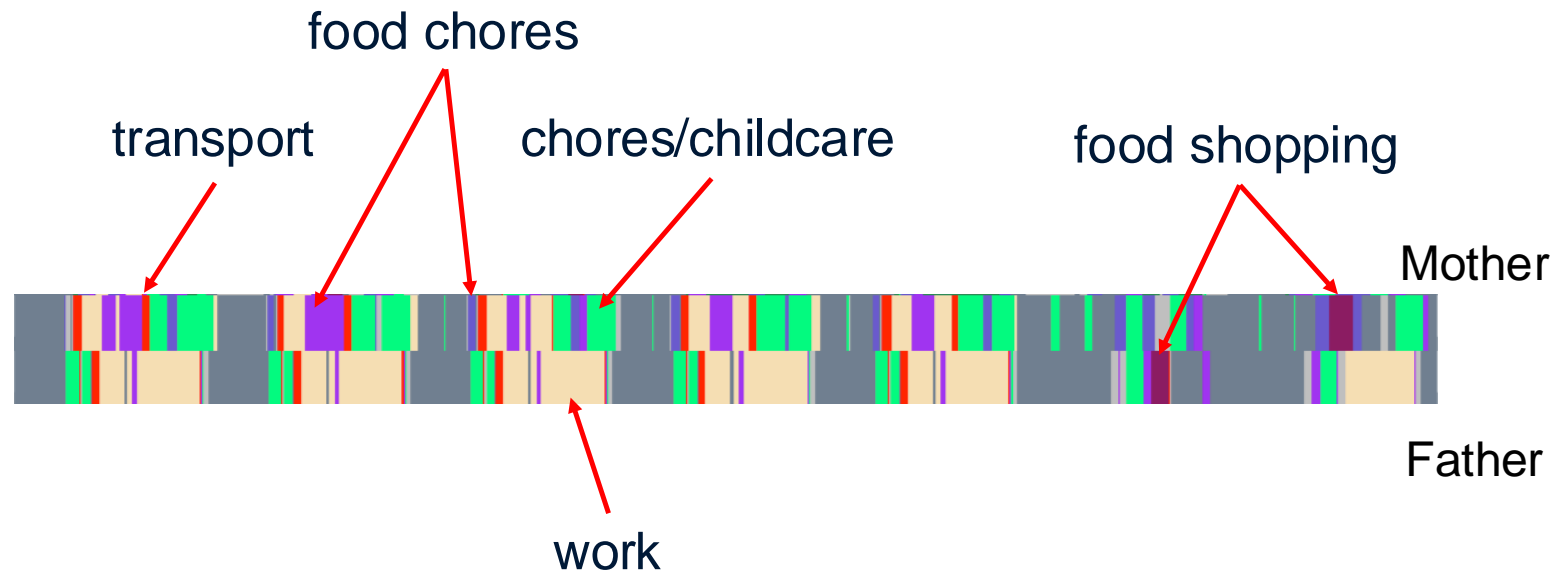


Percentage of participants in various activities, by time of day and gender:
Total, weekdays and weekends



Exploring time use data

- At the **individual level**, we can explore sequences of activities to understand why certain events happen before/after others
 - We can also look at how connected individuals coordinate activities at a household level



7 days time-use sequences in a household

Questions to think about...

- What type of information is found in Episode File?
 - When do we want to use this data?
- What type of information is found in Main File?
 - How can we link episode file and main file?
- What are some limitations to using time use data?
 - What CAN'T it tell us?

