A world unseen: How time diary data is essential to constructing policy advice

Economics Society of NSW

Education Event

9 July 2024

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Acknowledgement of Country

We acknowledge that Aboriginal and Torres Strait Islander peoples are the First Peoples and Traditional Custodians of Australia, and the oldest continuing culture in human history. We pay respect to Elders past and present and commit to respecting the lands we walk on, and the communities
we walk with.

Artwork:
Regeneration by Josie Rose

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Economics Society of NSW

Professor Jonathan Gershuny

Overview & history of time use data and its validation

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A video from Professor Gershuny…

https://unswbusiness.au.panopto.com/Panopto/Pages/Viewer.aspx?id=5419f525-50de-46b5-96dd-b1a3005a5d2b

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Economics Society of NSW

Professor Siobhan Austen

Labor supply - "a world unseen: how time diary data is essential to constructing policy advice"

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Labour Supply

Siobhan Austen

panel presentation

"a world unseen: how time diary data is essential to constructing policy advice"

Sydney,
Tuesday July 9, 2024

WiSER
Women in Social & Economic Research

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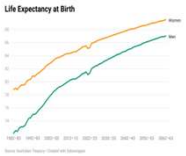
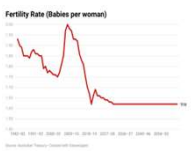
A changing age structure

Life Expectancy at Birth



Fertility Rate (Babies per woman)



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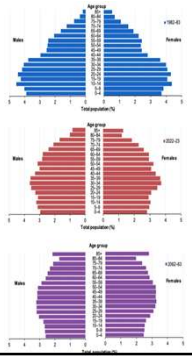
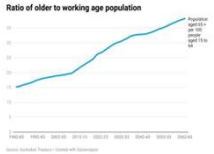


Ratio of older to working age population



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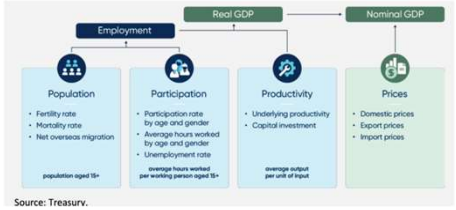

Source: Treasury.

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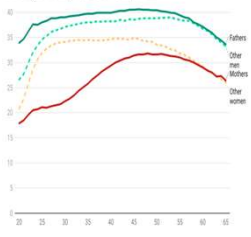
• P for Participation

Average Weekly Hours of Work, 2022



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Policy on labour supply should aim to lift women's labour force participation rates and paid work hours

This:

- Will have smaller environmental impacts than increasing migration or fertility rates
- Can be positive for gender equity, because having an independent source of income is critical to wellbeing.
- Will improve savings rates, because households save more from 'secondary' than 'primary' earners' income.
- Will be positive for productivity, because women have relatively high levels of education.

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But we need good policy

- And good policy on women's participation in paid work can only be accomplished if it's based on a comprehensive understanding of unpaid work and its interconnections with paid work
- A well-designed Time Use Survey can best serve these ends

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Demonstrating what can be done with good TUS data

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Life cycle labour supply of Australian couple households (from Apps and Rees, 2005)

Women's paid work hours | Men's paid work hours | Women's unpaid work hours | Men's unpaid work hours

	Women's paid work hours	Men's paid work hours	Women's unpaid work hours	Men's unpaid work hours
young couples without children	1,789	2,379	983	596
couples with children of pre-school age	535	2,278	3,548	1,571
couples with children of primary school age	745	2,258	3,185	1,491
couples with children predominantly in the age range 13-15	861	2,304	2,724	1,307
couples with children aged 15 and over and living at home	1,192	2,209	1,777	866
working age couples where the children have left home	1,112	2,166	1,593	831
couples approaching retirement age	509	1,123	1,801	1,116
couples of retirement age	46	152	1,720	1,380

data taken from Apps, P. and Rees, R. 2005 'Gender, Time Use and Public Policy', IZA DP 1855

Created with Datawrapper

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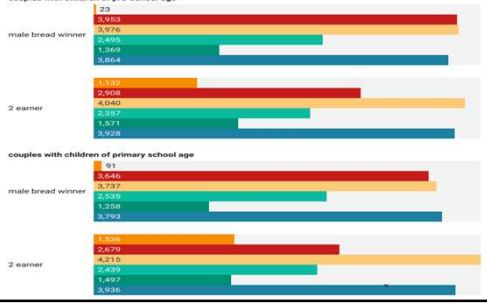
Labour Supply and Unpaid Work Across Male Breadwinner & 2 Earner Households, Australia (from Apps & Rees 2005)

Women's paid work hours | Women's unpaid work hours | Women's total work hours | Men's paid work hours | Men's unpaid work hours | Men's total work hours



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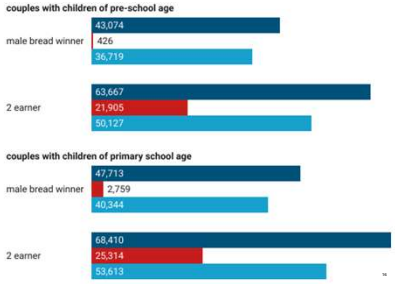
Income and Earnings by Household Type, Australian Couple Households (from Apps & Rees, 2005)

Household Private Income | Women's Earnings | Household Net Income



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Time diary data is essential to constructing policy advice on labour supply

- Responding to the challenges posed by population ageing requires policies focused on women's labour supply.
- For any such policies to be effective they need to be based on good evidence on unpaid work and its interaction with paid work.
- Such data was available in earlier versions of the TUS but are missing now.

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Economics Society of NSW

Professor Lyn Craig

What time diary data can tell us about childcare: social and policy implications

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THE UNIVERSITY OF MELBOURNE

What time diary data can tell us about childcare: social and policy implications

Economics Society of Australia Event

A WORLD UNSEEN: HOW TIME DIARY DATA IS ESSENTIAL TO CONSTRUCTING POLICY ADVICE

Sydney 9th July 2024

Lyn Craig, Professor of Sociology and Social Policy
School of Social and Political Sciences
University of Melbourne

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Acknowledgment of Country

I acknowledge the Gadigal people of the Eora nation, the traditional owners and custodians of the unceded land on which we meet.

I pay my respects to their Elders past, present and emerging and extend that respect to Aboriginal and Torres Strait Islander people here today.

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Time use data

Distinctive contribution of time use data is to yield valid, reliable and detailed quantitative information from within households, of what is done and who does it

- For example, the Australian Bureau of Statistics (ABS) Time Use Survey 1992, 1997, 2006
- Nationally representative sample of Australian households
- Time use information provided over 2 days to detail level of 5 min intervals – leave-behind diary
- Respondents recorded their main activities, any simultaneous activities, who they are with and where they are throughout each day
- Diary completed by all aged 15+ in respondent households, so multiple family members

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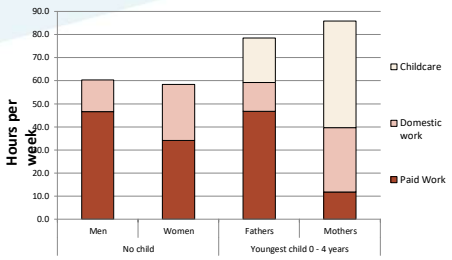
Time use changes with parenthood, by gender



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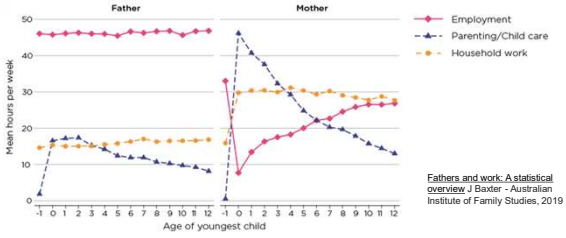
The time impacts of parenthood are persistent

Figure 1: Mother and father's time use up to and after the birth of first child



Fathers and work: A statistical overview J Baxter - Australian Institute of Family Studies, 2019

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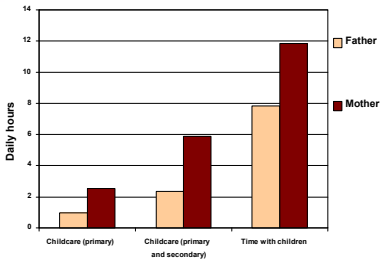
Measuring childcare is not straightforward

Calculate hours/minutes per day caring for children - but how?

- As a main activity (active care)
- As a secondary activity alongside e.g. housework, working at home (what else were you doing at the same time?)
- All time in children's company

  May not be active care, but constraint, other activities pre-emptible, contingent, need to be present, to step in as needed
- Pervasive responsibility



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Childcare activity is heterogenous

Important to know what **activities** childcare consists of, because varied

Supervising, monitoring, available as needed

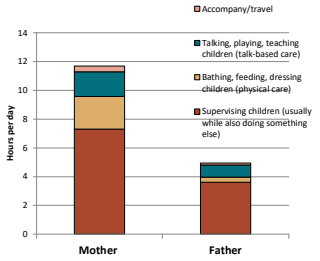
Physical care: bathing, dressing, feeding, holding, changing, soothing, putting to bed

Accompanying: to school, daycare, sports

routine, time-critical, deadlines

Talk-based: playing, reading, talking, listening

non-routine, time-flexible



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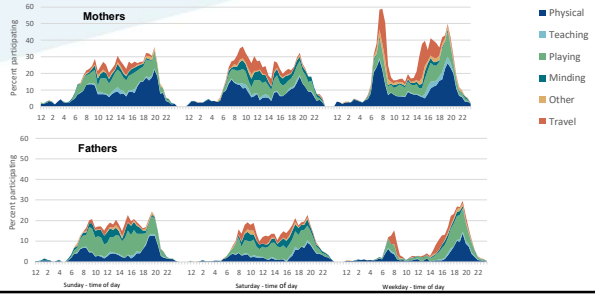
Who does what childcare when?



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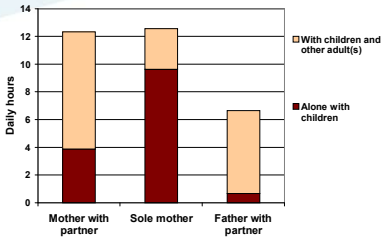
Daily hours with children by gender and family structure



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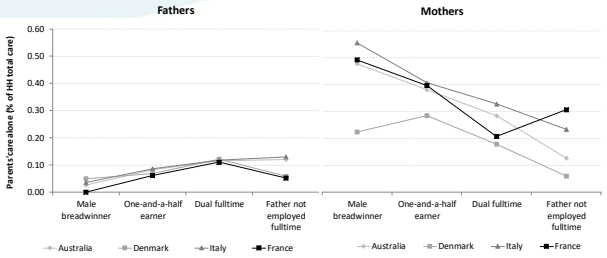
Parents' share of household total care that is performed solo by household type and gender in four countries



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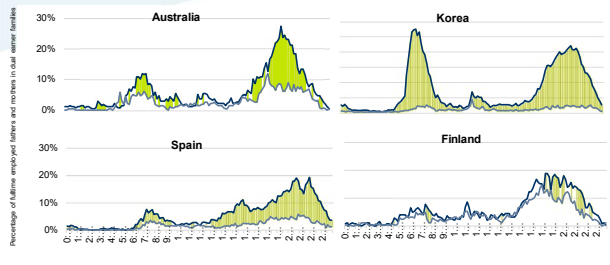
The gendered rush hour: nonsynchronous leisure and childcare in fulltime dual earner families in four countries



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Gender differences in leisure quality, mothers cf. fathers

	Australia	Italy	USA	France	Denmark
Total leisure	-.4**	-1.6***	-.6***	-1.0***	-.7**
Leisure with child		-.6***		-.4***	-.3
Home-based leisure without child	-.1**	-.3***	-.3***	-.2**	-.1
Non-home leisure without child	-.3***	-.7***	-.3***	-.4***	-.3*

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Leisure and multitasking

	Leisure as sole activity		Multitasking leisure and childcare		Multitasking two forms of unpaid work	
Predictor	**Fathers**	**Mothers**	**Fathers**	**Mothers**	**Fathers**	**Mothers**
Mother works full time		−1.97*		−2.64*		−4.57***
Father works >50 hours	−2.09*		−2.03*		−1.26*	
Father works weekends			−2.45**			
Mother works weekends		−3.17*				
Constant term	21.18***	16.18***	6.04**	22.69***	−1.77	9.08**

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Time shifting, time squeezing, time sharing

	Gender division of labour more equal?	Reduce total workload?
Non-parental childcare	✓	No
Domestic outsourcing	✓	No
Mother works non-standard hours	✓	No
Father works non-standard hours	x	No
Self-employment	x	No
Work at home	x	No
Mother works part time	x	No

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Summary

Compared to father's care, mother's care involves not only more overall time commitment but also

- more of the routine and time-constraining childcare tasks
- more rigid scheduling and pressing daily deadlines
- more time alone with children
- more overall responsibility for managing care
- less childfree leisure, more interruptions (fragmentation)
- more multitasking, more rapid task switching
- employed (and other) mothers protect time with children, at cost to selves

Why does this matter?

- Because the scope *and* detail is necessary to understanding parents' work and family lives
- Therefore, necessary for effective policy development

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Unfortunately…

The ABS TUS 2020-21 did not gather usable data on secondary activity, co-presence, location

Future ABS TUS will now exclude them, instead will ask, "during most or all of [this main activity]

a) *Was there a child aged 14 years and under in your care? "*

b) *Was there a person aged 15 years and over in your care because of their disability, illness or limitations related to ageing?*

Includes when another person is in the same location to provide care, so solo/joint care indivisible

No independent start-finish times, so cannot be accurately counted

Upshot: will only have care as a main activity (gross underestimate) and 'in your care' (gross overestimate)

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Policy: apply a gender lens (that isn't blind)

The scope and the detail are needed for effective policy and accurate accounting

Policy priority to raise women's workforce participation: e.g., 'If Australia could lift female participation to that of males, it would increase GDP by 8.7% or $353 billion by 2050' (Gallaher 2022)

But at what cost?

Value of unpaid domestic labour and care is estimated to average 15% of Gross Domestic Product cross-nationally (OECD 2022)

74% of women find balancing work and family stressful, compared to 57% of men (National Working Families Report, 2024)

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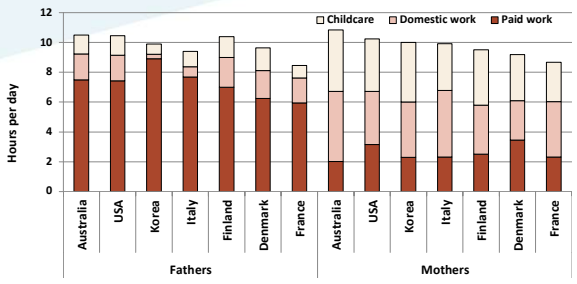
Australian parents work long (total) hours



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Policy: apply a gender lens *and* a care lens

Care not only makes life possible but also worth living, and ensuring there is an adequate supply of it is a matter for everyone; overworked families cannot solve the problem alone

Care services	Pink tax HECS-HELP
Income support	Retirement incomes
Flexibility	Workplace exploitation
Paid parental leaves	Worktime regulation

Work-life balance = enough time *and* enough money

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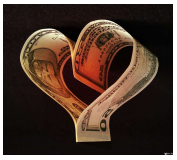
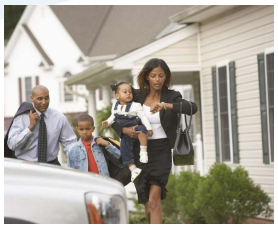
Time, work, money and love





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Economics Society of NSW

Emeritus Professor Michael Bittman

Transport & work from home

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Reversal of separation of home and work, characteristic of industrial revolution

- When the framework knitters or makers of silk stocking had a great price for their work, they have been observed seldom to work on Mondays and Tuesday but to spend most of their time at the ale-house or ninepins… The weavers, 'tis common with them to be drunk on Monday, have their head-ache on Tuesday and their tools out of order on Wednesday. As for the shoemakers, they'll rather be hanged than not remember St. Crispin on Monday … and it commonly holds as long as they have a penny of money or pennyworth of credit' (Thompson 1967:72)'

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Solution: Factories a dedicated workspace time devoted exclusively to employer directed tasks.

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ELiDDI: Samples period and work location

	Men (diaries)		Women (diaries)		Total (diaries)
2016	PT	FT	PT	FT	
Work		106		63	169
Covid sample					
Work	40	235	74	118	467
Home	73	516	107	321	1017
Total	113	751	181	439	1484

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Disruptions to workflow apply both at workplace and at home (following Leroy et al, 2020)

Work tasks

- **Intrusions** – one work demand forces switch of attention (e.g. phone call from important client interrupts email to your boss)
- **Distraction** – unforced switch of attention, often difficult to block (e.g. overheard conversation in open plan office, non-urgent notification by your mobile)
- **Breaks** – a restorative pause in workflow (e.g coffee, lunch break)
- **Multitasking** – attending to more than one demand for attention by doing toe activities at the same time

Non-work tasks

- Home is the site of **activities extraneous to employment** such as personal care, domestic and unpaid care and leisure, which are assigned by gender
- **Multitasking** – attending to more than one demand for attention by doing toe activities at the same time (e.g talking to your child while completing an email)
- **Frequency and source** (personal needs. domestic and care duties, leisure) worse in the home setting?

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Hypothesized differences between work at workplace and working from home (WFH)

- H1: WFH lowers 'intrusions' because of remoteness of colleagues?
  - Or does perpetual contact afforded by modern communication devices make this remoteness meaningless? H1: WFH lowers 'intrusions' because of remoteness of colleagues?
- H2: WFH reduces 'distractions' -- no office noise, no overhearing live and visible discussions
  - Or does the frequency of virtual meetings counteract this?
- H3 WFH eliminates the journey to work, how is this time-bonus used by employees?
- H4: WFH increases the restorative powers of breaks?
  - Or does wider pantry choice and availability of left-overs offset an extra time?
- H5: Since domestic responsibilities are unequally assigned by gender does WFH overburden female employers especially mothers?

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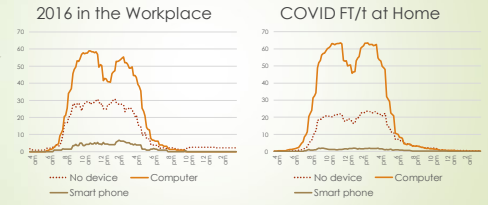
Intrusions, distractions ad device use



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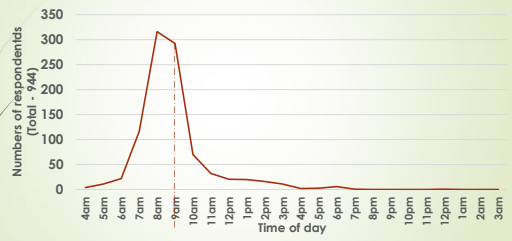
WFH eliminates journey to work increased scheduling flexibility, e.g. start time



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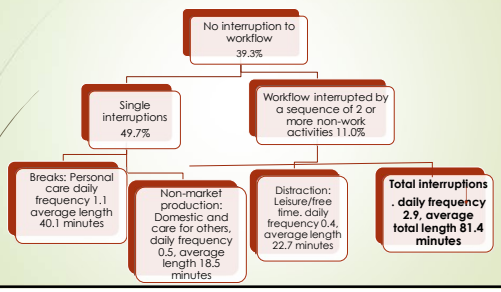
Male F/T workflow disruptions = work episode, one or more non-work episode followed by a return to a work episode



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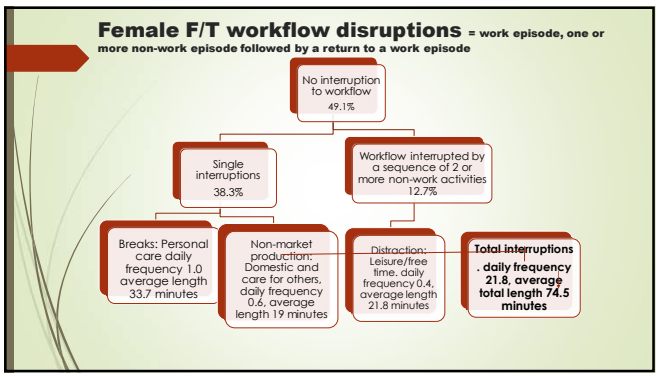

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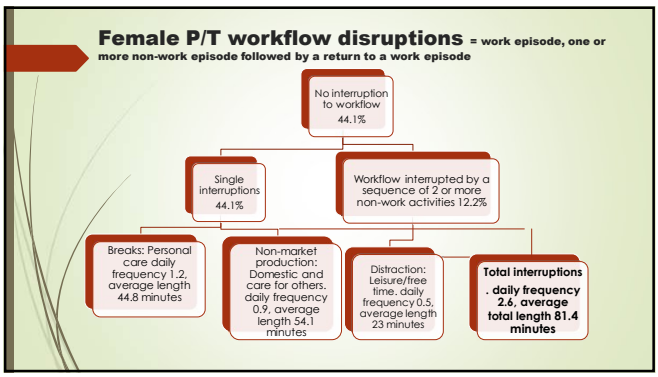

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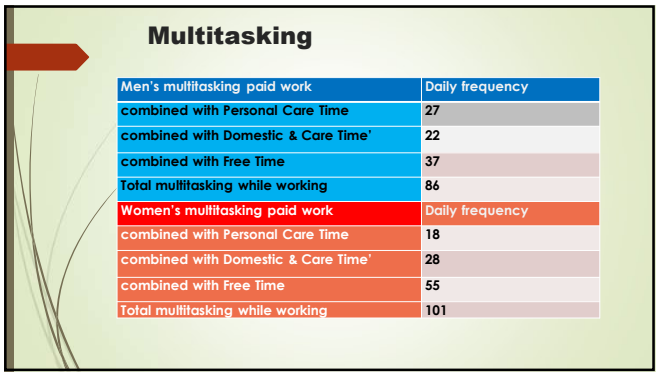

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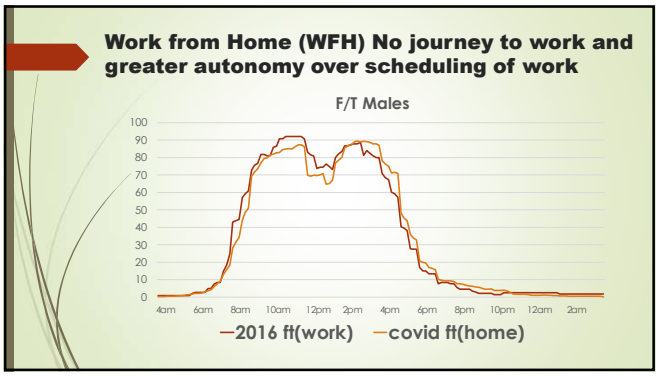

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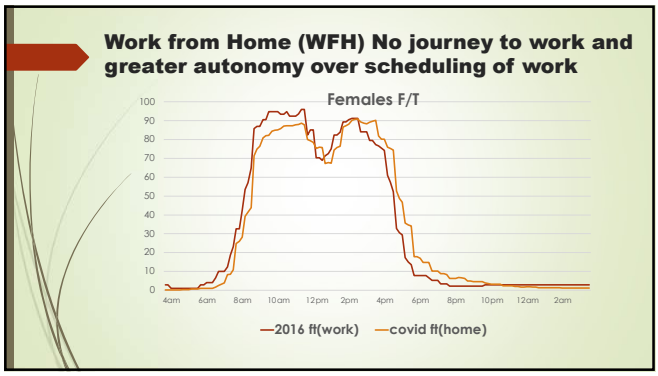

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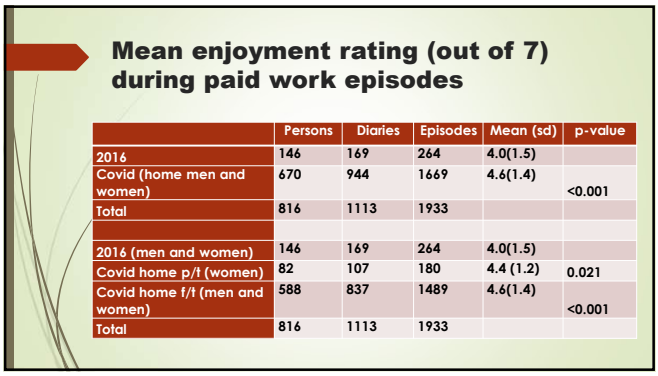

	Persons	Diaries	Episodes	Mean (sd)	p-value
2016	146	169	264	4.0(1.5)	
Covid (home men and women)	670	944	1669	4.6(1.4)	<0.001
Total	816	1113	1933		
2016 (men and women)	146	169	264	4.0(1.5)	
Covid home p/t (women)	82	107	180	4.4 (1.2)	0.021
Covid home f/t (men and women)	588	837	1489	4.6(1.4)	<0.001
Total	816	1113	1933		

54

Economics Society of NSW

Morning tea

Video – Digital time-use diary

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Demonstration of digital time-use diary

https://timeuse.org/new-hetus-compatible-caddi

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Economics Society of NSW

Professor Gigi Foster

Time Diary Data and Human Wellbeing

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UNSW SYDNEY

Never Stand Still | Business School | Economics

Time Diary Data and Human Wellbeing

Professor Gigi Foster
School of Economics, University of New South Wales
Sydney, Australia

July 9, 2024
A World Unseen ESA Community Education Event
NSW Treasury

UNSW Business School

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In-press forthcoming book, *Research Handbook on Time Use and Society* (Edward Elgar), edited by Michael Bittman and Oriel Sullivan

Chapter 20
"Beyond GDP or SDGs:
The Role of Time Diary Data and Subjective Wellbeing in Tracking and Driving Human Thriving"

and

Faculty and Staff Time Use in the Age of COVID: A Pilot Study of Time Use, Productivity, and Satisfaction using Data from a Large Research University (with Charlene Kalenkoski)

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What do policy-makers aim for?

To keep their jobs
To set policy consistent with the fads and fashions of the day
To please their politician task-masters
To please their bosses in the administrative hierarchy within public bureaucracies
To set policy that grants favours to the loudest lobbyists

To set policy that in expectation maximises human wellbeing

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How do we measure human wellbeing?

GDP

SDGs

QALYs

HDI

Everyday happiness

Overall satisfaction with life (or job, or relationships, or…)
→ the WELLBY

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One wellbeing-measurement approach using time diary data

Capture how happy you felt when doing various activities
Aggregate these scores to form a "total happiness" measure

Problems with this approach

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An alternative

Capture life satisfaction (and perhaps satisfaction with particular aspects of life) TOGETHER with time-diary data

Discover "the daily habits of highly satisfied people"

Things this approach doesn't include: indicators of social and environmental sustainability

63

Example: Job satisfaction in universities

Time-diary survey of US and Aussie university employees in mid-2021 (co-authored with Charlene Kalenkoski)

For professional staff, categorise primary activities into types

Investigate the association of job satisfaction with primary time spent in each type of activity

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Example: Job satisfaction in universities

Staff activity coding:

General administration: a catch-all category for administrative work not easily categorized into another category.
Compliance: Writing reports, reviewing performance, or otherwise participating in systems of monitoring, checking, reviewing, verifying, and quality control.
Contact-making: Emails, phone calls, general communication, and putting people in touch with one another.
Persuasion: Writing marketing materials, advertising the university's services, or otherwise engaged in tasks intended to persuade others (excluding compliance activities).
Teaching support: Direct support of teaching and learning.
Training: Engagement in training to build one's own or others' human capital.
Research support: Direct support of research.
Purchasing and finance: Work concerned with accounts, receivables, and systems of finance and purchasing.
Physical space: Engagement with alteration of physical spaces on campus.
IT: Engagement with troubleshooting or support in relation to information technology.
Other: All other activities that cannot be categorized into one of the above groups

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Table 6A: What predicts job satisfaction? (FACULTY)

	Job Satisfaction (continuous)			
	Time measured as usual hours per week			Time measured as minutes on diary day
	(1)	(2)	(3)	
Expected stringency of continued Covid restrictions	-0.39331 **	-0.2004	-0.05567	-0.1086742
	(.1631921)	(.1381016)	(.1467242)	(.1568017)
Male	1.2555 *	0.6407	0.28306	-0.1770891
	(.6232231)	(.5199842)	(.4707582)	(.5318575)
Total hours spent (diary day)		0.00871	0.02435	
		(.0782731)	(.0771719)	
Usual hours worked per week		-0.08787 ***		-0.1325178 ***
		(.0282803)		(.0361091)
Time spent on teaching			-0.09797 **	0.0009331
			(.0351498)	(.0017355)
Time spent on research			-0.15808 ***	-0.0014443
			(.0458586)	(.0020745)
Time spent on service			-0.09762 *	-0.0018326
			(.0475956)	(.0033762)
Time spent on administration			-0.13873 **	0.0003614
			(.0544855)	(.0020224)
Tenured		-1.52478 ***	-1.16129 *	-1.286445 *
		(.5168545)	(.6091351)	(.6995387)
Has a working spouse			-1.22675 *	-0.9584447
			(.5727509)	(.6392479)
Has a school-aged child			1.16866 *	0.8981489
			(.6267821)	(.6957159)
Has a young child			0.03756	-0.2445431
			(.7138114)	(.7185284)
Prime age (30-49)			0.15306	0.0319915
			(.8865127)	(.8385186)
Humanities			-1.03525	-1.122614

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Table 6B: What predicts job satisfaction? (STAFF)

	Job Satisfaction (continuous)		
	(1)	(2)	(3)
Male	0.6659	0.3976	0.0748
	(.5889)	(.6559)	(.7348)
Total hours spent (diary day)		-0.0409	
		(.0773)	
Usual hours worked per week		0.02	0.04
		(.0508)	(.0534)
Hours spent on general admin (diary day)			0.0288 (.1188)
Hours spent on compliance (diary day)			-0.272 * (.1450)
Hours spent on contact-making (diary day)			0.0602 (.0987)
Hours spent on persuasion (diary day)			-0.508 * (.5754)
Hours spent on teaching help (diary day)			-0.157 (.1818)
Hours spent on training (diary day)			-0.061 (.1686)
Hours spent on research help (diary day)			-0.066 (.2549)
Percentage of job in "ongoing activities"		0.0065	-0.004
		(.0108)	(.0115)
Salaried		0.722	0.4064
		(.5510)	(.5702)
Has a school-aged child		1.1624	0.8395
		(.7119)	(.7299)
Has a young child		-0.4715	-0.65
		(.7148)	(.7676)
Prime age (30-49)		-0.258	-0.153
		(.6636)	(.7103)
"Social" academic department		-0.2382	0.2243
		(.7384)	(.8131)
"Material" academic department		0.1982	0.6914
		(.7790)	(.8823)

***NO association between usual hours worked per week and job satisfaction for professional staff

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Very new tentative results on Aussie professional staff

Job satisfaction appears to be positively associated with working in teaching support, research support, compliance (!), or finance/purchasing

Time spent in most of the rest of the activities (including persuasion) is negatively related to job satisfaction

Implications for wellbeing and university productivity

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Q&A

Gigi.foster@scienceandfreedom.org
Gigi.foster@unsw.edu.au

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Economics Society of NSW

Professor Nancy Folbre

National accounts, extended

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A video from Nancy…

https://www.youtube.com/watch?v=I6xNW6K_RG0

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Economics Society of NSW

Emeritus Professor Bauman AO, Public Health, Sydney University

Health related uses of Time-Use Diary Surveys

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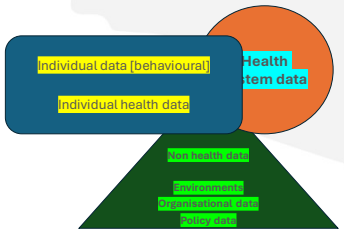
Health related uses of Time-Use Diary Surveys

Adrian Bauman
Emeritus Professor, Public Health
Sydney University

74

Many population surveillance systems for use in public health



Sectors contributing Health-relevant data

Health
Education
Sport
Agriculture
Environment / climate change
Tourism
Urban planning
Transport
Treasury
[private sector/ commercial / ...]

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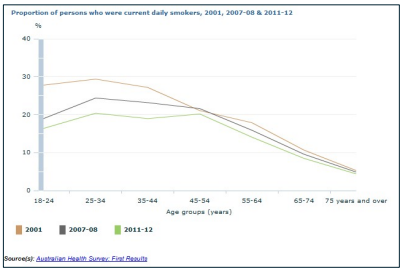
Trends in tobacco smoking: ABS national health surveys



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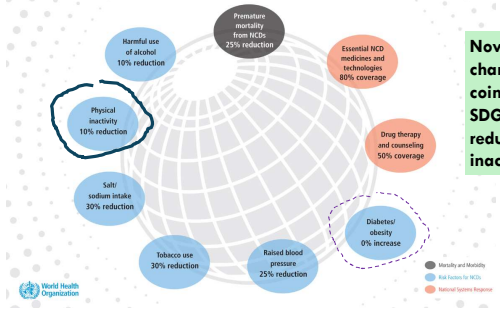
"Physical activity"

" any bodily movement produced by contraction of skeletal [large] muscles that results in energy expenditure"

(Caspersen et al 1985)

77

Set of 9 voluntary global NCD targets for 2025



Now WHO target is changed to coincide with SDGs, aim is 15% reduction in inactivity by 2030

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How we measure PA: six questions + total sitting time (hours/day)

The Active Australia Survey

Are you sufficiently active for health benefits?	
Walking: total times/week = _____	Total hours/week = _____
Moderate PA (MPA): total times/week = _____	Total hours/week = _____
Vigorous PA (VPA): total times/week = _____	Total hours/week = _____

Frequency of physical activity Total time [duration]

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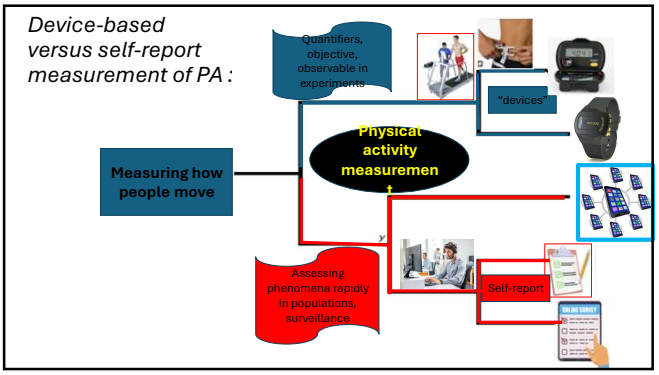
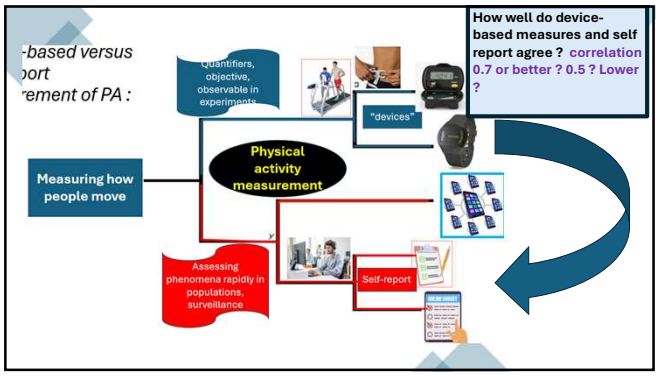
Device-based versus self-report measurement of PA :



80



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Validity of TUS data compared to usual PA questions in relation to accelerometers

Van Der Ploeg, H. P., et al. (2010). Advances in population surveillance for physical activity and sedentary behavior: Reliability and validity of time use surveys. American Journal of Epidemiology 172(10): 1199-1206.

- 2007, (n = 134 adults recruited from work sites in NSW and completed a 2-day time use diary twice, 7 days apart, and wore an accelerometer.
- Participants reliability ICCs of 0.74 for nonoccupational SB and 0.73 MVPA
- Comparison of the TUD with accelerometer showed Spearman correlations of 0.57-0.59 for SB and 0.45-0.69 for MVPA
- Time use surveys appear to be more valid for population surveillance of nonoccupational sedentary behaviour and health-enhancing physical activity than more traditional surveillance systems

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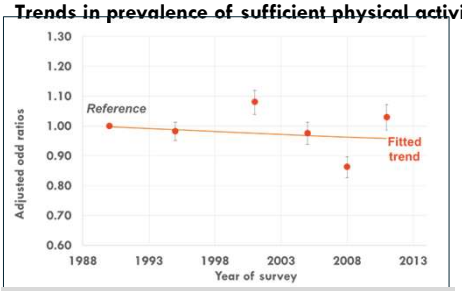
Trends in prevalence of sufficient physical activity



Overall fitted trend for years: OR = 0.998; p=0.012
Interpretation: There was a 0.2% decrease per year over 22 years in prevalence of sufficient physical activity

Chau J, Chey T, Burks-Young S, Engelen L, Baum A. Trends in prevalence of leisure time physical activity and inactivity: results from Australian National Health Surveys 1989 to 2011. Australian and New Zealand journal of public health. 2017 Dec 1;41(6):617-24.

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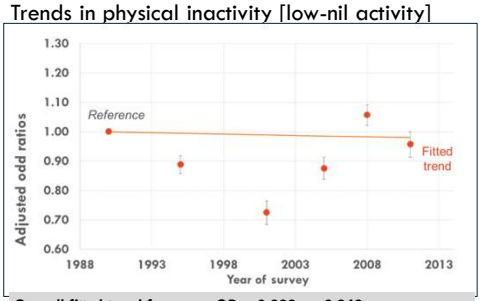
Trends in physical inactivity [low-nil activity]



Overall fitted trend for years: OR = 0.999; p=0.242
Interpretation: No change over 22 years in prevalence of inactivity

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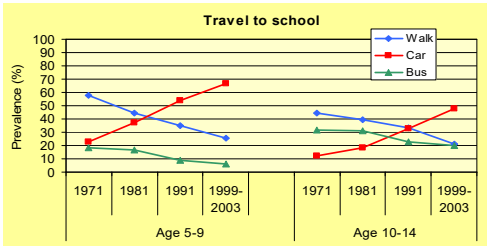
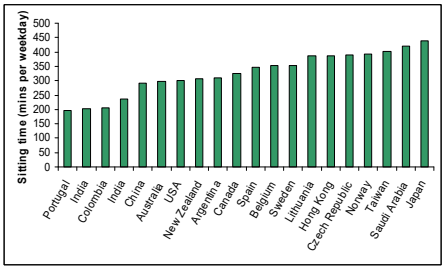
Inactive transport to school, NSW



Van der Ploeg H et al., Prev Med 2008

85

Prevalence of sitting in 20 countries



Bauman A et al; AJPM 2011

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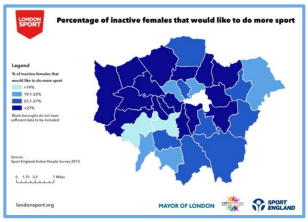
Active People survey , England

carried out 2005-2015 with representative samples up to n=330,000 adults and children



- **Local level micro data possible**
- **Comparison between small regions are valid, even if self report absolute values biased**
- **Important for local planning and local monitoring**

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Health research using Australian TUDs

- 1997 random sample of households, adults 15+ years
- TUDs for two designated days across the year
- 3,471 males and 3,776 females provided 14,315 diary days of data
- household 94% and person 84% response rates

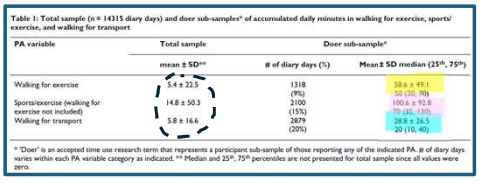

Table 1: Total sample (n = 14315 diary days) and doer sub-samples[a] of accumulated daily minutes in walking for exercise, sports/exercise, and walking for transport

PA variable	Total sample	Doer sub-sample[a]	
	mean ± SD[bc]	# of diary days (%)	Mean ± SD median (25th, 75th)
Walking for exercise	5.4 ± 22.5	1318 (9%)	58.6 ± 49.1 50 (30, 70)
Sports/exercise (walking for exercise not included)	14.8 ± 50.3	2100 (15%)	100.6 ± 92.8 70 (45, 130)
Walking for transport	5.8 ± 16.6	2879 (20%)	28.8 ± 26.5 20 (10, 40)

[a] "Doer" is an accepted time use research term that represents a participant sub-sample of those reporting any of the indicated PA. # of diary days varies within each PA variable category as indicated. [bc] Median and 25th, 75th percentiles are not presented for total sample since all values were zero.

Tudor-Locke C, Bittman M, Merom D, Bauman A. Patterns of walking for transport and exercise: a novel application of time use data. International Journal of Behavioral Nutrition and Physical Activity 2005, 2:5 doi:10.1186/1479-5868-2-5

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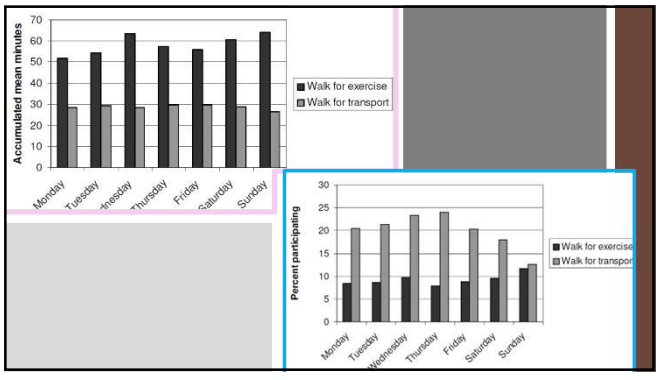

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	ABS time use 1992			ABS use 1997		
	Males	Females	Persons	Males	Females	Persons
Recreation and leisure mins/day	252	233	242	283	254	268
Sport and outdoor activity	38	24	31	33	20	27
Games/hobbies/arts/crafts	11	17	14	18	15	17
Reading	23	23	23	24	26	25
Audio/visual media(d)	126	100	113	143	118	130
other rec/leisure time use	56	71	63	70	80	73
Proportion sport / outdoors	15.1	10.3	12.8	11.7	7.9	10.1

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USA time use data: physical activity trends

Table 1: Comparative summary of time use surveys constituting the AHTUS with a focus on walking behaviours

Year(s)	1965–1966	1975–1976	1985	1992–1994	2003
Name	Americans' Use of Time (part of the Multinational Comparative Time-Budget Research Project)	Time Use in Economic and Social Accounts	American's Use of Time	US. Environmental Protection Agency National Human Activity Pattern Survey	American Time Use Survey

Tudor-Locke C, van der Ploeg HP, Bowles HR, Bittman M, Fisher K, Merom D, Gershuny J, Bauman A, Egerton M. Walking behaviours from the 1965-2003 American Heritage Time Use Study. Int J Behav Nutr Phys Act 2007, 4:45

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USA time use data: physical activity trends

Table 2: Prevalence[a] of walking behaviours, sports and exercise, and total physical activity

	Proportion of doers				
	1965 (N = 1651)	1975 (N = 1555)	1985 (N = 2923)	1992–1994 (N = 7527)	2003 (N = 19714)
Physical activity variable	n % (95% CI)	n % (95% CI)	n % (95% CI)	n % (95% CI)	n % (95% CI)
Any walking	39 2.4 (1.6; 2.1)	57 3.7 (2.7; 4.6)	443 15.2 (12.9; 16.5)	1577 21.0 (20.0; 21.9)	3720 18.9 (18.3; 19.4)
Walking for exercise	39 2.4 (1.6; 3.1)	57 3.7 (2.7; 4.6)	85 2.9 (2.3; 3.5)	NA	1073 5.4 (5.1; 5.8)
Walking for transport	NA	NA	105 3.6 (2.9; 4.3)	1244 16.5 (15.7; 17.4)	2845 14.4 (13.9; 14.9)
Walking the dog	NA	NA	275 9.4 (8.3; 10.5)	408 5.4 (4.9; 5.9)	506 2.6 (2.3; 2.8)
Sports/exercise[bbb]	97 5.9 (4.7; 7.0)	188 12.1 (10.5; 13.7)	501 17.1 (15.8; 18.5)	1438 19.1 (18.2; 20.0)	2427 12.3 (11.9; 12.8)
Total physical activity[cccc]	134 8.1 (6.8; 9.4)	237 15.2 (13.5; 17.0)	850 29.1 (27.4; 30.7)	2602 34.6 (33.5; 35.6)	5540 28.1 (27.5; 28.7)

Tudor-Locke C, van der Ploeg HP, Bowles HR, Bittman M, Fisher K, Merom D, Gershuny J, Bauman A, Egerton M. Walking behaviours from the 1965-2003 American Heritage Time Use Study. Int J Behav Nutr Phys Act 2007, 4:45

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TUD trends in PA in the Netherlands

van der Ploeg HP, Venugopal K, Chau JY, van Poppel MN, Breedveld K, Merom D, Bauman AE. Non-occupational sedentary behaviors: population changes in the Netherlands, 1975-2005. Am J Prev Med. 2013: 44 382-7.

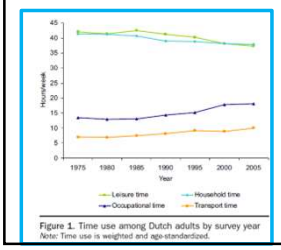

Figure 1. Time use among Dutch adults by survey year
Note: Time use is weighted and age-standardized.

- **The National Time Use Survey of the Netherlands was used, collected in 5-year intervals since 1975 (seven time points, *n* range1017–2845).**

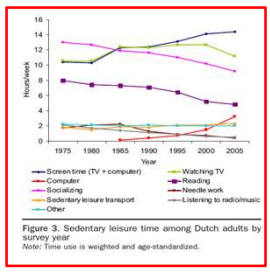

Figure 3. Sedentary leisure time among Dutch adults by survey year
Note: Time use is weighted and age-standardized.

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Average Time in Minutes in Active Housework and Walking Dogs for British People Aged 15-24, Change from 1961 to 2000-01

	Walking Dogs		Active Housework	
	1961	2000-01	1961	2000-01
All men aged 15-24	2 min	2 min	11 min	12 min
All women aged 15-24	2 min	2 min	53 min	22 min
All aged 15-24	2 min	2 min	33 min	17 min
Male participants	40 min	45 min	38 min	45 min
Female participants	32 min	52 min	1 hr 30 min	48 min
All participants	36 min	48 min	1 hr 14 min	47 min

Sources: Office for National Statistics (London), National Time Use Study, 2000-01, BBC (London), The People's Activities, April 1961.

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ABS Time use surveys [1992], 1997, 2006, 2021/2

How Australians Use Their Time

Key findings on how people use their time in Australia

Reference period 2020-21 financial year

ABS The Time Use Survey (TUS), conducted from November 2020 through to July 2021, measured the daily activities of people aged 15 years and over in Australia to provide insights into how people spent their time.

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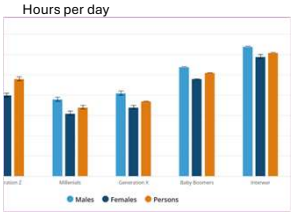
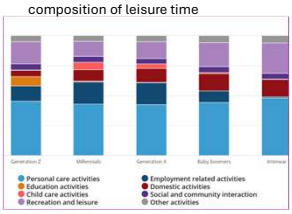
Recreation and leisure time spent by 'generation', TU surveys, ABS 2021-2022

Hours per day



composition of leisure time



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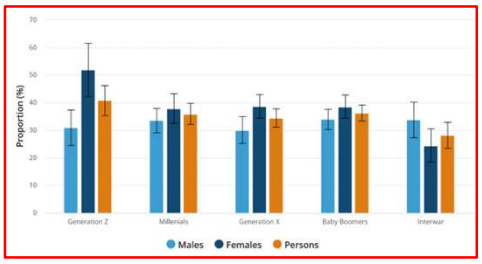
Participation in general internet and device use by gender



97

93% reported any recreation / leisure activities , mean 4 .3 hrs

- 75% watched TV and video, for an average of 3 hours
- 36% engaged in general internet and device use, mean of 1 hour
- **30% did exercise, sport or outdoor activity, average of 1.5 hours**
- 22% were reading for an average of 1.5 hours
- Males and females reported similar levels of participation in most recreation except for reading [more females] and digital/online games [more males]

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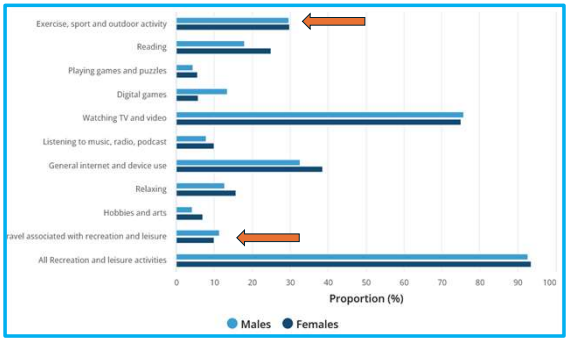

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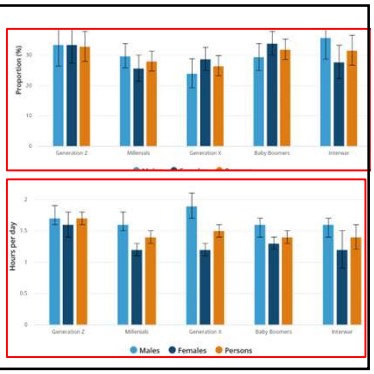
Participation in exercise, sport and outdoor activity by sex

- Includes: Walking for exercise or pleasure, running, gym, swimming, sports and water sports
- Stretching
- Fishing, yoga, golf, Bike rides.

- Excludes: Commutes including walking or cycling
- Exercises, stretches or physiotherapy for a medical reason
- Walking pets



100

101

Economic valuation of self reported health

Santos, J. V. and J. Cylus (2024). The value of healthy ageing: Estimating the economic value of health using time use data. Social Science and Medicine 340.

- Novel method to quantify the economic value of health through time use data.
- 65+ years-old and older UK TUS 2014-15
- predict time spent in non-market productive activities
- **Age and self-perceived health status** were associated with time in non-market productive activities.
- Summing monetized predictions, *very good* instead of *very bad* self-perceived health associated with additional production of 439£/month for 65 to 74 years-old
- simulation model, if 10% of older people in bad health made transition to good health it could increase ~278£ million through production of non-market activities

102

Nutritional studies

Policy relevant

O'Connor, S. G., et al. (2022). Circadian timing of eating and BMI among adults in the American Time Use Survey. International Journal of Obesity 46(2): 287-296.

- Eating & Health Module of the 2006–2008 and 2014–2016 American Time Use Surveys
- Circadian timing of eating association with BMI

103

Many physical activity studies

Policy relevant

Espinel, P. T., et al. (2015). Older adults' time in sedentary, light and moderate intensity activities and correlates: Application of Australian Time Use Survey. Journal of Science and Medicine in Sport 18(2): 161-166.

- Australian TUD 2006 for **Older adults**
- 223 and 121. min/day of waking time in light and MVPA, **mostly (88%) household chores.**
- One third of participants spent ≥600 min/day in sedentary activities,
- 85% achieved sufficient levels of MVPA by all domains, but only 30% of participants by the leisure/transport domains
- Neither age nor SES associated with insufficient MVPA

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Many physical activity studies

Davis, J., et al. (2024). Daily Moderate-to-Vigorous Activity of Native Hawaiians and Pacific Islanders and Seven Asian Subgroups by Types of Activities, American Time Use Survey, 2010–2019. Healthcare (Switzerland) 12(2).

- American TUS 2010 to 2019 to compare moderate-to-vigorous activity [30 min/day] among Native Hawaiians and Pacific Islanders (NHPI) and seven Asian ethnic subgroups.
- NHPI were the least active, and Asian Indians and Chinese more active.
- PA from household activities exceeded physical activity from sports and recreation.
- The most active group adults > 65 years, context assessed too [alone more]
- **Other context studies** from TUD - Dunton, G. F., et al. (2010); American TUD: Girls more likely to exercise with family than boys (22% vs 16%), and 18 years olds exercised alone

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Trends in sitting

Policy relevant

Chau, J. Y., et al. (2012). Temporal trends in non-occupational sedentary behaviours from Australian Time Use Surveys 1992, 1997 and 2006. International Journal of Behavioral Nutrition and Physical Activity 9.

- Australian 1992 1997 2006 TUSs
- Slight increase in sitting time over the three surveys [important for sitting domain]
- Mapped increase in computer-based and screen-time leisure as proportion of recreation time

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Many physical activity , sleep , sitting studies

Policy relevant

Harms, T., et al. (2019). Daily metabolic expenditures: Estimates from US, UK and polish time-use data. BMC Public Health 19.

- Time use surveys UK 2001, Poland 2012 and US 2003-13
- TUS 24 hr to estimate the total Physical Activity Level (PAL) – with mean PAL values 1.59 in the US to 1.74 in Poland
- Main sources of daily energy expenditure from PA paid and unpaid work activities
- Discretionary PA accounted for a tiny part (~ 3%) of adult daily energy expenditures

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24 hour physical activity , sleep , sitting

Policy relevant

Liangruenrom, N., et al. (2020). Trends and correlates of meeting 24-hour movement guidelines: A 15-year study among 167,577 Thai adults. International Journal of Behavioral Nutrition and Physical Activity 17(1).

- Thailand population prevalence of meeting 24-h movement guidelines
- 2001, 2004, 2009, and 2015 Thai Time-Use Surveys
- In 2015, prevalence meeting MVPA 82% , SB 45% , sleep 56% , and all recommendations 21%
- MVPA lowest in 2001, peaked in 2004 or 2009, and declined in 2015
- Similar, using Compositional analysis [Liangruenrom, N., et al. (2023)]

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Sleep studies

Policy relevant

Jang, Y., et al. (2023). Trends in sleep duration in Korea: The Korean time use survey. Sleep Medicine 103: 24-28.

- South Korea TUS 2004, 2009, 2014, and 2019
- Sleep duration increased from 411.1 min (SD 22.5) in 2004 to 434.5 min (SD 26.1) in 2019

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Wellbeing studies

Policy relevant

Restrepo, B. J. and E. Zeballos (2023). Working from Home and Emotional Well-Being during Major Daily Activities. International Journal of Environmental Research and Public Health 20(4).

American TUS, WFH (working from home) and wellbeing measures

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Conclusions

Many relevant uses of TUD for preventive health, especially physical activity/sleep/sitting time, context, and correlates

Time use questions seem to be useful, feasible valid, and population representative [non-health data of health relevance]

Need serial surveys using identical measures – survey discontinuity or changing the questions make interpretation difficult

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Economics Society of NSW

Emeritus Professor Michael Bittman

Public Health – cross national study of historical change in relation to social regulation of eating

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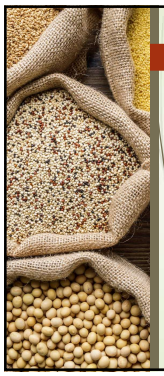

Food is a socio-cultural artefact

- Food is a *cultural* artefact. In most, if not all, societies on the planet, eating is done in a social context which regulates the acquisition, processing and distribution of food.
- Health promotion campaigns have presumed that eating is just another form of individual, private consumption that is completed by purchases in the supermarket.
- The campaigns have relied heavily on labelling and health education (recommendations).
- Ignoring the socio-cultural processes of food consumption and the way this has been socially regulated has continued, while rates of unhealthy overweight keep rising to official epidemic levels.
- Compared to the campaign for smoking cessation this campaign has a disappointment.

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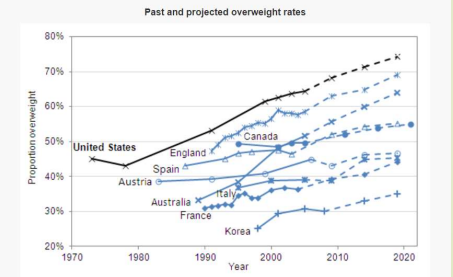
Trajectories of adult rates of overweight/obesity in OECD countries



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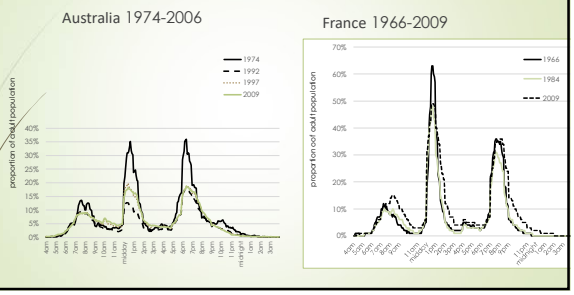
Scheduling of eating as a primary activity



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Eating time as seen in the camera record (minutes/ day)

	Eating	TV	Reading
Primary only	55	64	30
Primary + 1 secondary	108	97	42
Primary + 3 secondary activities	115	101	43

Source: Gershuny et al., 2020

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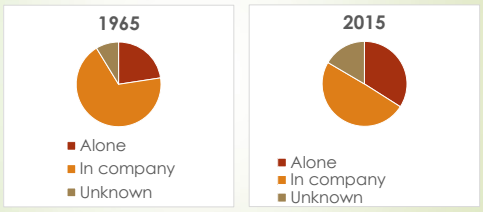
United States of America: change in the social context of eating as main activity 1965-2015



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Social disorganization of eating in many advanced economies

- Australia and the USA show that observing the luncheon meal as a social coordinated event has drastically diminished since the 1980.
- Occasions eating with others are memorable (recorded in diaries).
- Eating as a simultaneous activity that accompanies either work or leisure escapes respondents' memory and become ';mindless eating'.

- Social disorganization of eating (emphasis on individual choice = relaxation of informal social control)

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What can we learn from France?

- High value placed on episodes of food consumption, emphasis on **refined taste (pleasure) and not the mere satisfaction of hunger or acquisition of nutrients**
- **Socially coordinated mealtimes need institutional and culturally support**
- **School lunch breaks are 1.5 hours, strong workplace lunch culture**
- **Etiquette/norms discourage food consumption alone – e.g. on public transport or walking.**

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Economics Society of NSW

Professor Gerard Goggin

Digitisation of work & leisure

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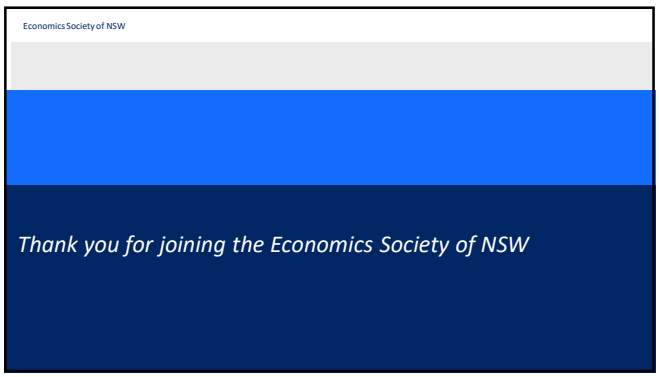
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Thank you for joining the Economics Society of NSW

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