

Matching it up: non-standard work and job satisfaction

Katarzyna Bech Magdalena Smyk Joanna Tyrowicz Lucas van der Velde

Income and wealth inequality: drivers and consequences
Gdansk, September 2023

Motivation

- Ambiguity haunts empirical work on job satisfaction and flexibility
 - Wheatley (2017): correlations positive for M and negative for W
 - Bellmann and Hübler (2020): patterns for JS unclear, correlations with WLB negative.
 - Hayman (2009): correlations with FWC and WFC lower

Motivation

- Ambiguity haunts empirical work on job satisfaction and flexibility
 - Wheatley (2017): correlations positive for M and negative for W
 - Bellmann and Hübler (2020): patterns for JS unclear, correlations with WLB negative.
 - Hayman (2009): correlations with FWC and WFC lower
- Workers **offered** flexibility are happy
(Atkinson et al. 2011, Bloom et al. 2015, O'Connor and Cech 2018, Hamplová 2019)

Motivation

- Ambiguity haunts empirical work on job satisfaction and flexibility
 - Wheatley (2017): correlations positive for M and negative for W
 - Bellmann and Hübler (2020): patterns for JS unclear, correlations with WLB negative.
 - Hayman (2009): correlations with FWC and WFC lower
- Workers **offered** flexibility are happy
(Atkinson et al. 2011, Bloom et al. 2015, O'Connor and Cech 2018, Hamplová 2019)
- (Some) People lack **boundary management strategies** and suffer when forced to set them
(Lee et al. 2002, Kossek et al. 2004, Bainbridge and Townsend 2020)

Our contribution

Flexibility enactment theory → match between a person and work arrangements

- 1 *Inclination* to specific working arrangements (WA) is:
individual,

Our contribution

Flexibility enactment theory → match between a person and work arrangements

- 1 *Inclination* to specific working arrangements (WA) is:
individual, potentially time-varying,

Our contribution

Flexibility enactment theory → match between a person and work arrangements

- 1 *Inclination* to specific working arrangements (WA) is:
individual, potentially time-varying, and unobservable

Our contribution

Flexibility enactment theory → match between a person and work arrangements

- 1 *Inclination* to specific working arrangements (WA) is:
individual, potentially time-varying, and unobservable
- 2 Machine learning to uncover latent link between JS and WA ...
- 3 ... and obtain counterfactual levels of JS ...
- 4 thus identify individuals who are (mis)matched

Hypotheses

H1 Ability to actively manage boundaries is higher for women and parents.

H2 Overall job satisfaction with NWA is higher than in a scenario eliminating NWA.

European Working Conditions Survey

- Spans 2001-2015; every five years, 36 countries, approx. 1000 workers
salaried workers, aged between 18 and 65 years of age, private employer

European Working Conditions Survey

- Spans 2001-2015; every five years, 36 countries, approx. 1000 workers
salaried workers, aged between 18 and 65 years of age, private employer
- Broad range of individual and HH characteristics:
gender, age, education, HH-structure, tenure, health

European Working Conditions Survey

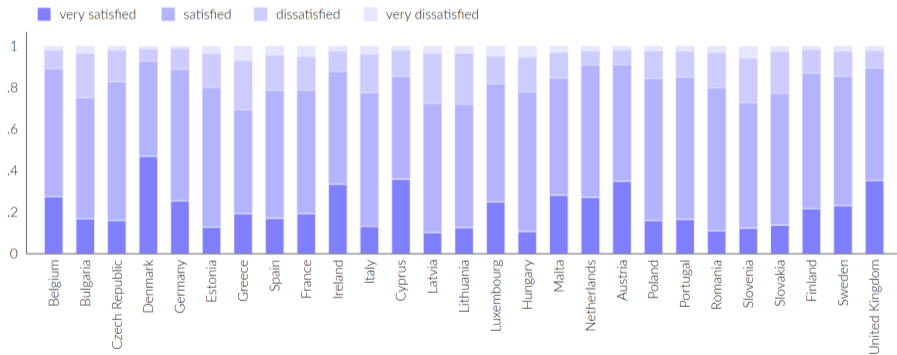
- Spans 2001-2015; every five years, 36 countries, approx. 1000 workers
salaried workers, aged between 18 and 65 years of age, private employer
- Broad range of individual and HH characteristics:
gender, age, education, HH-structure, tenure, health
- Rich on work characteristics:
occupation, industry, temporary/permanent, (long) hours, work on weekends, commute, direct hazards, discomfort (tedious tasks, etc), wearing protective gear, hours fit schedules, supportive colleagues, enough time to finish tasks, etc.

European Working Conditions Survey

- Spans 2001-2015; every five years, 36 countries, approx. 1000 workers
salaried workers, aged between 18 and 65 years of age, private employer
- Broad range of individual and HH characteristics:
gender, age, education, HH-structure, tenure, health
- Rich on work characteristics:
occupation, industry, temporary/permanent, (long) hours, work on weekends, commute, direct hazards, discomfort (tedious tasks, etc), wearing protective gear, hours fit schedules, supportive colleagues, enough time to finish tasks, etc.
- Job satisfaction: 4-level categorical scale

Descriptive statistics

Job satisfaction across countries in waves in EWCS



Non-standard working arrangements (NWAs)

Six non-standard working arrangements (NWAs):

- varying hours,
- nights,
- long hours,
- Sundays

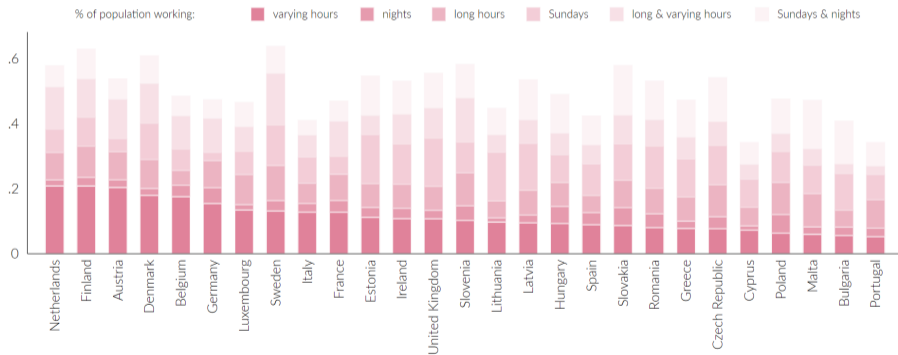
Non-standard working arrangements (NWAs)

Six non-standard working arrangements (NWAs):

- varying hours,
- nights,
- long hours,
- Sundays

- long & varying hours
- Sundays & nights

NWAs across countries in EWCS



Methods

The link between NWA and JS is ambiguous and endogenous

- 1 ML model of JS: low level of arbitrariness, use all available variables
 - individual and household characteristics + job characteristics

Methods

The link between NWAs and JS is ambiguous and endogeneous

- 1** ML model of JS: low level of arbitrariness, use all available variables
 - individual and household characteristics + job characteristics
- 2** Estimate it for people who work in standard WAs (reference group, NWA=0)

▶ ML model works well

Methods

The link between NWAs and JS is ambiguous and endogeneous

- 1** ML model of JS: low level of arbitrariness, use all available variables
 - individual and household characteristics + job characteristics
- 2** Estimate it for people who work in standard WAs (reference group, NWA=0)
 - ▶ ML model works well
- 3** Obtain *counterfactual JS* for each individual with NWA *as if* no NWA

Methods

The link between NWA and JS is ambiguous and endogeneous

- 1 ML model of JS: low level of arbitrariness, use all available variables
 - individual and household characteristics + job characteristics
- 2 Estimate it for people who work in standard WAs (reference group, NWA=0)
 - ▶ ML model works well
- 3 Obtain *counterfactual JS* for each individual with NWA *as if* no NWA
- 4 Compare the actual and the counterfactual levels of JS:

$$\Delta JS_i = \text{Factual } JS_i - \text{Counterfactual } JS_i$$

Does taking away NWA's improve job satisfaction?

A counterfactual experiment of taking away *NWA*.

Example 1: dissatisfied to very satisfied = $4 - 1 = 3$

Example 2: very satisfied to dissatisfied = $1 - 4 = -3$

$$\text{Improvement}(Y/N)_i = \beta_0 + \beta_w \times \text{woman} + \beta_p \times \text{parent} + \gamma_i \text{woman} \times \text{parent} + \delta \mathbb{X} + \epsilon_i \quad (M1)$$

$$\Delta JS_i = \beta_0 + \beta_w \times \text{woman} + \beta_p \times \text{parent} + \gamma_i \text{woman} \times \text{parent} + \delta \mathbb{X} + \epsilon_i \quad (M2)$$

Mismatch in working arrangements

We classify workers into:

- actual and counterfactual job satisfactions are the same – indifferent
a worker is just as well off with and without NWA

Mismatch in working arrangements

We classify workers into:

- actual and counterfactual job satisfactions are the same – indifferent
a worker is just as well off with and without NWA
- job satisfaction is higher in actual than in counterfactual – matched
a worker is better off keeping NWA and would lose from having standard working arrangements

Mismatch in working arrangements

We classify workers into:

- actual and counterfactual job satisfactions are the same – indifferent
a worker is just as well off with and without NWA
- job satisfaction is higher in actual than in counterfactual – matched
a worker is better off keeping NWA and would lose from having standard working arrangements
- job satisfaction is lower in actual than in counterfactual – mismatched
a worker would benefit from changing from NWA to standard working arrangements

We aggregate the individuals to country-level measures.

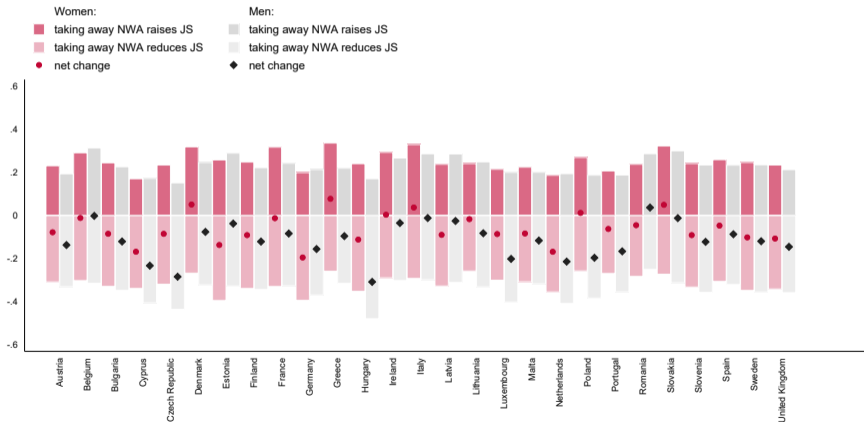
Does taking away NWA's improve job satisfaction?

	All NWA samples	
	Logit	OLogit
woman (β_w)	-0.17*** (0.03)	-0.19*** (0.03)
parent (β_p)	-0.24*** (0.05)	-0.23*** (0.04)
woman \times parent (γ)	0.13*** (0.07)	0.13*** (0.06)
Observations	27 729	

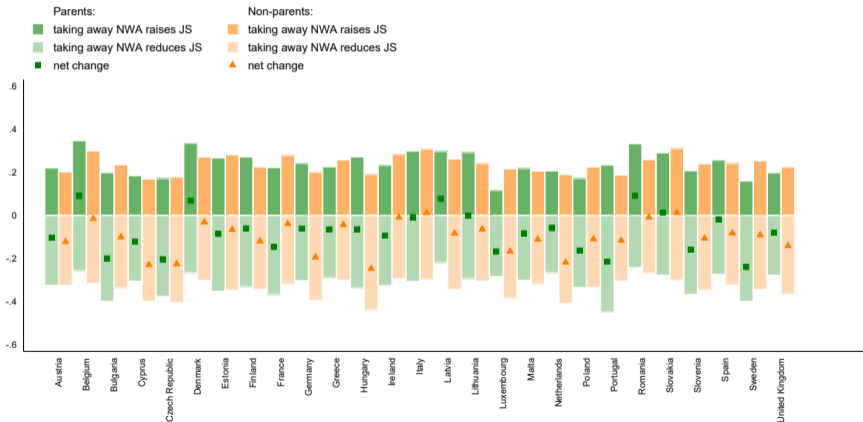
Does taking away NWA improve job satisfaction?

	Varying hours		Nights		Long hours		Sundays	
	Logit	OLogit	Logit	OLogit	Logit	OLogit	Logit	OLogit
woman (β_w)	-0.08 (0.07)	-0.12** (0.06)	-0.13 (0.10)	-0.19*** (0.09)	-0.29*** (0.06)	-0.32*** (0.06)	-0.01 (0.07)	-0.03 (0.05)
parent (β_p)	-0.22** (0.13)	-0.26*** (0.11)	-0.19* (0.13)	-0.28*** (0.11)	-0.08 (0.11)	-0.12 (0.09)	-0.31*** (0.14)	-0.31*** (0.09)
woman \times parent (γ)	-0.01 (0.19)	0.04 (0.13)	-0.54 (0.43)	0.01 (0.25)	0.09 (0.19)	0.10 (0.17)	0.15 (0.18)	0.17 (0.13)
Observations	6 312		1 728		4 461		5 577	
	Long & varying hours		Sundays & nights		All NWA samples			
	Logit	OLogit	Logit	OLogit	Logit	OLogit	Logit	OLogit
woman (β_w)	-0.30*** (0.08)	-0.31*** (0.07)	0.01 (0.05)	-0.01 (0.06)			-0.17*** (0.03)	-0.19*** (0.03)
parent (β_p)	-0.41*** (0.09)	-0.25*** (0.08)	-0.21*** (0.07)	-0.20*** (0.06)			-0.24*** (0.05)	-0.23*** (0.04)
woman \times parent (γ)	0.41** (0.24)	0.23 (0.16)	0.37*** (0.19)	0.29* (0.19)			0.13*** (0.07)	0.13*** (0.06)
Observations	4 407		5 243				27 729	

Mismatch in working arrangements across countries



Mismatch in working arrangements across countries





Questions or suggestions?
Thank you!

w: grape.org.pl
t: grape_org
f: grape.org
e: j.tyrowicz@grape.org.pl

References I

- Atkinson, C., Lucas, R. and Hall, L.: 2011, Flexible working and happiness in the nhs, *Employee Relations* **33**, 88–105.
- Bainbridge, H. T. and Townsend, K.: 2020, The effects of offering flexible work practices to employees with unpaid caregiving responsibilities for elderly or disabled family members, *Human Resource Management* **59**(5), 483–495.
- Bellmann, L. and Hübler, O.: 2020, Working from home, job satisfaction and work–life balance—robust or heterogeneous links?, *International Journal of Manpower* .
- Bloom, N., Liang, J., Roberts, J. and Ying, Z. J.: 2015, Does working from home work? evidence from a chinese experiment, *The Quarterly Journal of Economics* **130**(1), 165–218.
- Hamplová, D.: 2019, Does work make mothers happy?, *Journal of Happiness Studies* **20**(2), 471–497.
- Hayman, J. R.: 2009, Flexible work arrangements: Exploring the linkages between perceived usability of flexible work schedules and work/life balance, *Community, work & family* **12**(3), 327–338.
- Kossek, E. E., Lautsch, B. A. and Eaton, S. C.: 2004, Chapter 12: Flexibility enactment theory: Implications of flexibility type, control, and boundary management for work–family effectiveness, *Work and Life Integration: Organizational, Cultural and Individual Perspectives*, Psychology Press.
- Lee, M. D., MacDermid, S. M., Williams, M. L., Buck, M. L. and Leiba-O’Sullivan, S.: 2002, Contextual factors in the success of reduced-load work arrangements among managers and professionals, *Human Resource Management* **41**(2), 209–223.
- O’Connor, L. T. and Cech, E. A.: 2018, Not just a mothers’ problem: The consequences of perceived workplace flexibility bias for all workers, *Sociological Perspectives* **61**(5), 808–829.
- Wheatley, D.: 2017, Employee satisfaction and use of flexible working arrangements, *Work, Employment and Society* **31**(4), 567–585.

Descriptive statistics

Variable	Full sample	Reference group	Varying hours	Nights	Long hours	Sundays	Long & varying h.	Sundays & nights
% satisfied with their job	82.9	85.1	84.6	75.5	81.0	78.3	83.7	76.2
<i>Personal characteristics:</i>								
% of women	40.4	46.1	46.4	23.7	27.7	52.0	20.3	25.6
% of single hh	10.3	10.2	11.5	10.3	9.5	9.4	11.6	10.0
% of hh with a child aged<7 yo	12.3	12.0	12.8	13.1	12.2	11.6	14.0	12.2
% of hh with an elder member	1.5	1.5	1.0	1.8	1.1	1.6	1.8	2.2
<i>Job characteristics:</i>								
% working part-time	11.2	11.8	18.5	6.8	4.0	17.5	2.8	7.9
% working on Saturdays	37.6	23.1	30.9	35.8	33.8	89.7	33.5	90.7
% report hours fit schedules	81.9	89.5	86.4	74.7	78.4	71.6	71.1	58.1
% report supportive colleagues	92.7	92.5	91.1	92.4	95.1	92.6	93.2	93.2
% report enough time for tasks	92.8	94.1	93.6	93.5	89.6	92.4	88.1	91.9
% with long commute	29.7	27.0	30.6	28.1	36.2	26.3	40.6	32.0
hazardous conditions (count)	3.03	2.95	2.67	4.00	3.23	3.19	2.78	3.53
<i>NWAs:</i>								
% working in varying hours	11.9	0	100	0	0	0	0	0
% working nights	3.6	0	0	100	0	0	0	0
% working in long hours	8.1	0	0	0	100	0	0	0
% working on Sundays	8.4	0	0	0	0	100	0	0
% working long&varying hours	8.7	0	0	0	0	0	100	0
% working on Sunday nights	8.5	0	0	0	0	0	0	100
Observations	56 107	28 378	6 312	1 728	4 461	5 577	4 408	5 243

ML works: true vs model JS in the sample

Actual JS	ML - Random Forest Predicted JS				Parametric (OLogit) Predicted JS			
	1 Cell %	2 Cell %	3 Cell %	4 Cell %	1 Cell %	2 Cell %	3 Cell %	4 Cell %
very satisfied (1)	15.6	3.9	1.9	1.2	2.3	20.7	0.0	0.0
satisfied (2)	11.1	35.2	10.2	6.1	1.8	58.7	0.2	0.0
dissatisfied (3)	1.2	1.4	8.3	1.3	0.1	13.0	0.2	0.0
very dissatisfied (4)	0.1	0.1	0.2	2.3	0.0	2.6	0.2	0.0
N	8 302	11 094	5 932	3 050	1 218	26 965	187	8