Take It Easy! How Flexible Work Arrangements Bust the Commuting Life Satisfaction Nexus

14th International German Socio-Economic Panel User Conference

Marco Kühne
kuehne@europa-uni.de
https://github.com/MarcoKuehne
www.marco-kuehne.com

European University Viadrina

June 30, 2022

Imagine

Commuting and Happiness

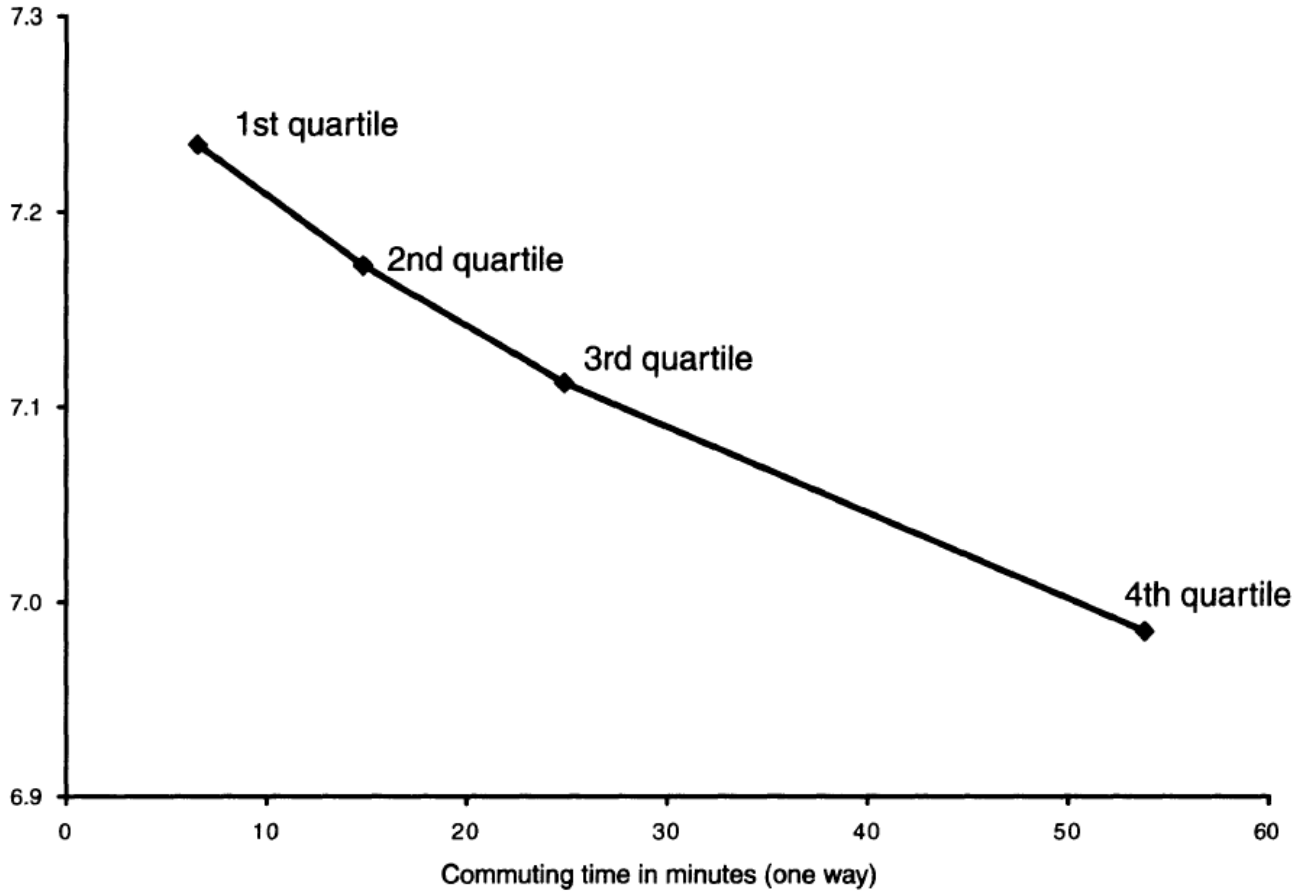


Fig. 3. Commuting time and average reported satisfaction with life, Germany, 1985–2003
Data source: GSOEP.

Stutzer, A., & Frey, B. S. (2008). Stress that doesn't pay: The commuting paradox. Scandinavian Journal of Economics, 110(2), 339-366. Robustness: Commuting Mode, Monetary Compensation, Household Level, Life Domains, Job/Residence Change

Commuting and Happiness

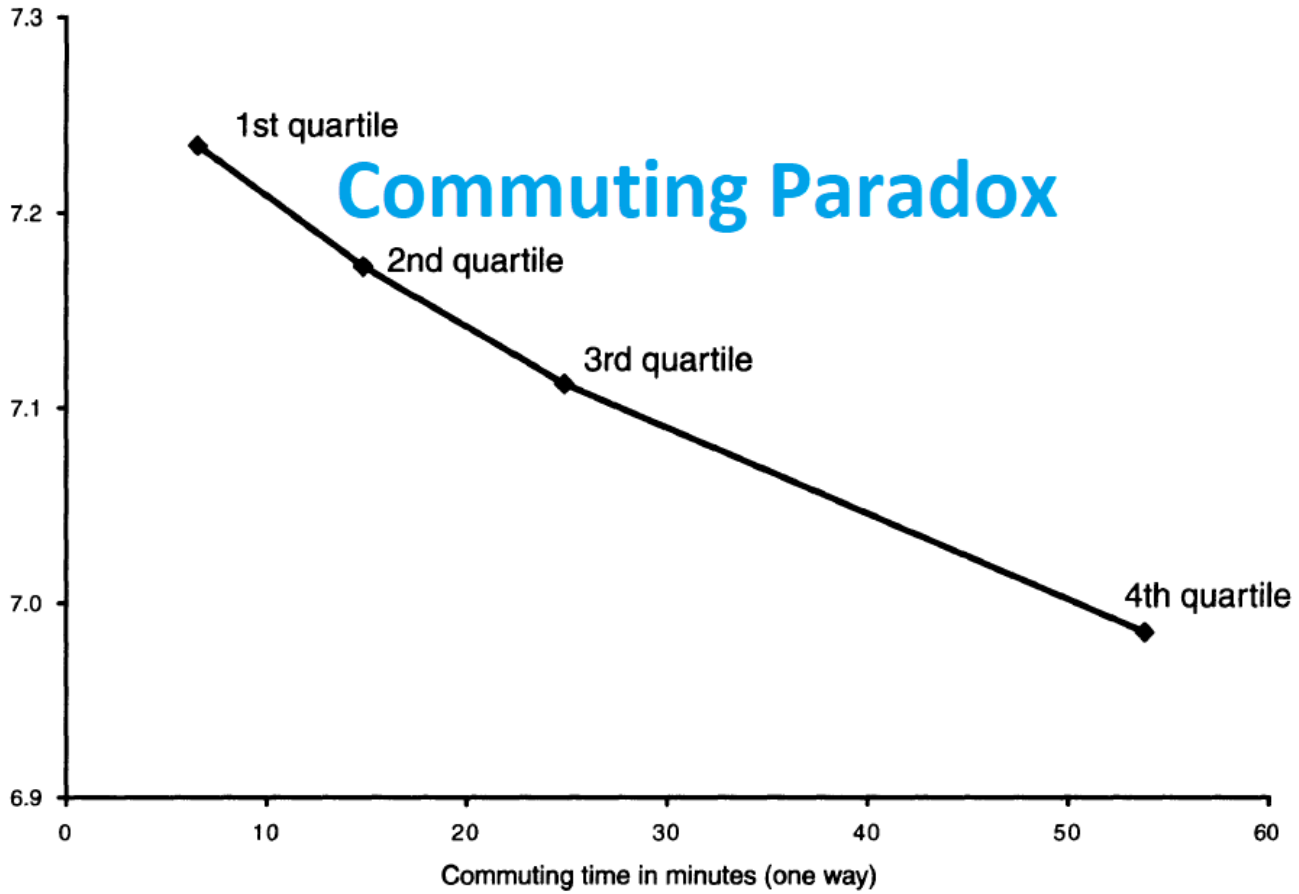


Fig. 3. Commuting time and average reported satisfaction with life, Germany, 1985–2003
Data source: GSOEP.

Research Question

Can flexible working arrangements mitigate the negative effects of commuting on well-being?

Method

Sample

- German Socio-Economic Panel (13 waves 2003-2019)
- Full-time working age from the private sector

Empirical Model

Equation (1) summarises the empirical model:

$$Y_{it} = \alpha_i + \beta_1 \text{CD}_{it} + \beta_2 \text{CD}_{it}^2 + \beta_3 \text{CD}_{it} \cdot \text{FT}_{it} + \beta_4 \text{CD}_{it}^2 \cdot \text{FT}_{it} + \beta_5 \text{FT}_{it} + \gamma X_{it} + \epsilon_{it}. \quad (1)$$

- Y_{it}, life satisfaction of person i at time point t.
- CD_{it}, one-way commuting distance in km.
- FT_{it}, flexitime dummy.
- X_{it}, vector of time-varying covariates.
- α_i, person-specific potentially correlated error term.
- ϵ_{it}, idiosyncratic error term.

Variables

- Satisfaction. Self-report from 0 to 10.
- Commuting. Self-report one-way distance in km.
- Flexitime.
  - Fixed working time (0)
  - Self-determined working time (1)
  - Working time account (1)
- Controls...

Identification strategy

- Concern: Self-selection into commuting (endogeneity).

Identification strategy

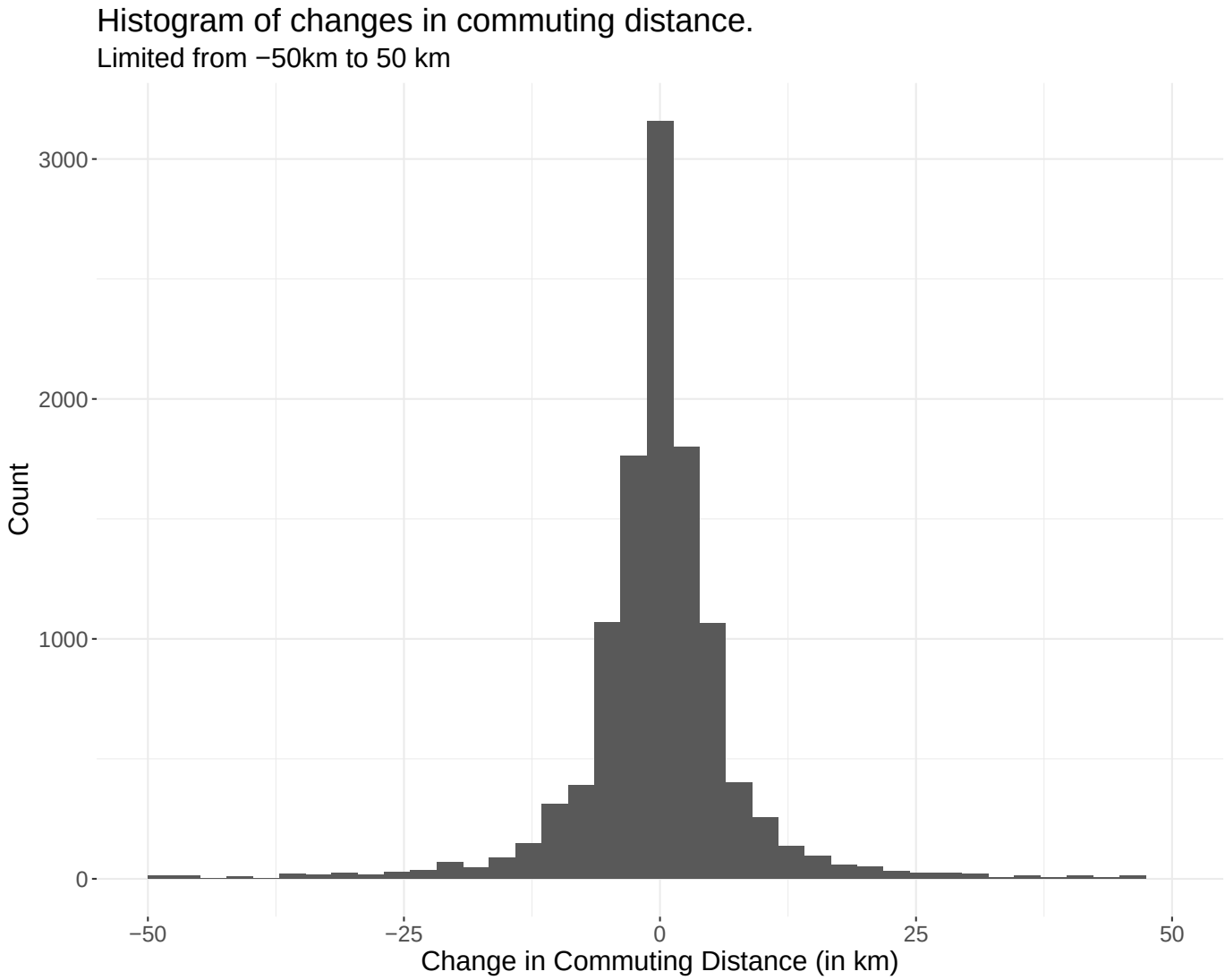
- Concern: Self-selection into commuting (endogeneity).
- Strategy: Firm relocation as source of exogenous commuting distance variation

Identification strategy

Firm relocation.

- Fixed-effects models for employees who do not change their residence or job position.
  - In This Dwelling One Year Ago: *hlf0105* (vs *hid*)
    - *Yes*
  - Occupational Change: *pgjobch*
    - *Employed No Change*

Identification strategy



Results

Results

The average marginal effect of a 1-km increase in oneway commuting distance is

- -0.0022248 non-flexible regime
- -0.000283 flexible regime

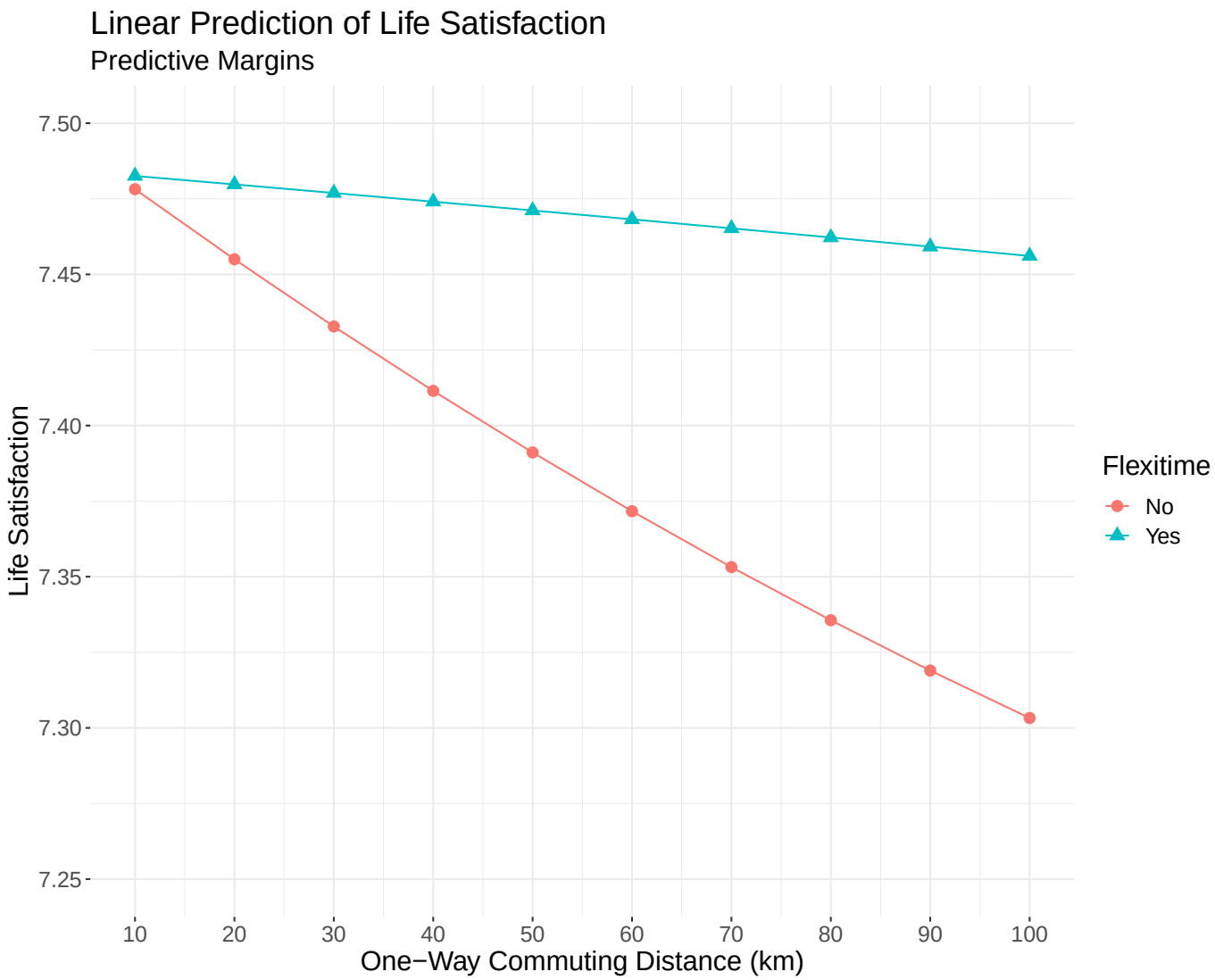
Results

The average marginal effect of a 1-km increase in oneway commuting distance is

- -0.0022248 non-flexible regime
- -0.000283 flexible regime

8x higher in non-flexible work arrangements

Predictions



Conclusion

- Negative causal effect of commuting on well-being.
- The negative effect can be almost completely mitigated by a flexible work time regime.

Thank you

Backup

References

- Stutzer, A., & Frey, B. S. (2008). Stress that doesn't pay: The commuting paradox. Scandinavian Journal of Economics, 110(2), 339-366.
- Roberts, J., Hodgson, R., & Dolan, P. (2011). "It's driving her mad": Gender differences in the effects of commuting on psychological health. Journal of health economics, 30(5), 1064-1076.
- Dickerson, A., Hole, A. R., & Munford, L. A. (2014). The relationship between well-being and commuting revisited: Does the choice of methodology matter?. Regional Science and Urban Economics, 49, 321-329.
- Lorenz, O. (2018). Does commuting matter to subjective well-being?. Journal of Transport Geography, 66, 180-199.
- Ingenfeld, J., Wolbring, T., & Bless, H. (2019). Commuting and life satisfaction revisited: Evidence on a non-linear relationship. Journal of Happiness Studies, 20(8), 2677-2709.
- Clark, B., Chatterjee, K., Martin, A., & Davis, A. (2019). How commuting affects subjective wellbeing. Transportation, 1-29.
- Hirte, G., & Illmann, U. (2019). Household decision making on commuting and the commuting paradox. Empirica, 46(1), 63-101.

The consequences of commuting

The effects of more commuting

- ↓ productivity, i.e. ↑ absenteeism
  (Van Ommeren and Gutierrez-i Puigarnau, 2011)
- ↑ visits to the general practitioner (Künn-Nelen, 2016)
- ↑ divorce rates (Sandow, 2019)
- ↓ social participation (Mattisson et al., 2015)
- ↓ effort (Rupietta and Beckmann, 2016)

Descriptive Statistics

Table: Summary statistics.

Statistic	N	Mean	St. Dev.	Min	Max
Overall Satisfaction	24,631	7.458	1.450	1	10
Commuting Distance	24,631	24.611	47.518	1	999
Flexitime	24,631	0.648	0.478	0	1
Age	24,631	44.902	9.590	19	65
Female	24,631	0.434	0.496	0	1
HH Person	24,631	2.920	1.327	1	10
HH Children	24,631	0.806	1.069	0	8
HH Income (log)	24,631	10.16	0.44	7.93	13.07
Annual Work Hours	24,631	2,323	394	1,820	6,328
Education	24,631	2.396	0.533	1	3
Health Status	24,631	2.400	0.823	1	5
Marital Status	24,631	1.645	1.066	1	5

Robustness

- Measurement error in self-report commuting distance
- Sample with/out 2016 and 2018 (zipcode imputation)
- Fixed-effect individual slopes
- Fixed-effect ordered logit
- Fixed-effect asymmetry

Fixed-Effects Regressions

DV: Satisfaction with Life	FE	FE (CD $>$ 5km)	FEIS	FEOLOGIT
CD	-0.00246*	-0.00232*	-0.00219	-0.00582*
	(0.00128)	(0.00128)	(1119.3)	(0.00299)
CD^2	0.00000466	0.00000437	0.00000285	0.0000117
	(0.00000308)	(0.00000308)	(11.54)	(0.00000756)
FT	-0.0169	-0.0131	-0.0276	-0.0577
	(0.0385)	(0.0385)	(85139.8)	(0.0923)
FT $\times$ CD	0.00218*	0.00198	0.00381	0.00547*
	(0.00128)	(0.00128)	(2428.1)	(0.00309)
FT $\times$ CD^2	-0.00000484	-0.00000445	-0.00000701	-0.0000128*
	(0.00000311)	(0.00000311)	(13.45)	(0.00000770)
Individual characteristics[a]	YES	YES	YES	YES
Year fixed-effects	YES	YES	YES	YES
No. of observations[b]	24631	24631	18211	38835

Data source: SOEP long v36 dataset.
Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. FE = linear fixed-effects, FEIS = fixed-effects with individual slopes, FEOLOGIT = fixed-effects ordered logit (via blow up and cluster estimator), FEASYM = fixed-effects with asymmetric effects.
[a] Individual control variables in specification FE include age, age squared, gender, number of person and children in the household, household equivalence income (log), annual work hours, three categories for education, health status, marital status and state of residence.
[b] All models are run on the same sample. FEIS requires a minimum of three observations per unit and, thus, uses fewer observations. The blow up and cluster estimator of FEOLOGIT replaces every observation with copies of itself, and thus increases the size of the sample.