

Gender, Parenthood and Class Specific Patterns of Digital Work: **A Comparative Perspective**



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Outline

1. Digitization, Digitalization and Digital Work: Clarification of concepts, survey designs and scenarios

1.1 Digitization and Digitalization

1.2 Digital work: Measurement design in representative surveys in Germany

1.3 Scenarios of a digital transformation

1.4 Two examples of digital work: Hybrid work collaboration and algorithmic management

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1. Digitization, Digitalization and Digital Work:

Clarification of concepts,
survey designs & scenarios



1.1 Digitization, Digitalization, Digital Work

Digitization = the process of converting information into a digital format (i.e. computer-readable)

Digitalization: No established definition yet

- **Permeation of life spheres by digital technology** (Govers and van Amelsvoort, 2019)
 - Fourth industrial revolution, second phase of digitalization, second machine age, Industry 4.0 (Brynjolfsson and McAfee, 2014; Friedrich et al. 2021; Hirsch-Kreinsen, 2016)
 - Examples: IoT, Cyberphysical Systems, Algorithms, Big Data, AI, digital networks
 - Digital work: Work supported by digital technologies
- **Systematic transformation of work** → Work 4.0, New Work (e.g. Priority Program 2276 Digitalisation of Working Worlds)

1.2 Digital work: Measurement designs

- **Existing approaches in representative surveys in Germany** (see Review by *Marx, Abendroth, Meyer, Reimann, Tisch, Submitted*):

**Work-equipment
based approach**

**Work-content
based approach**

**Opinion-based
approach**

Reviewed studies: BAuA-AZB, DiWaBe, DGB-Index “GuteArbeit”, LEEP-B3, LPP (IAB), Bertelsmann Foundation Study, SOEP, NEPS, lidA

1.3 Scenarios of a digital transformation

Substitution of work

- **Skill-biased & task biased technological change** (Autor & Katz 1999; Autor 2015; Dengler and Matthes, 2018)

Implications for the occupational structure: Polarization = Erosion of medium qualified occupations (Hirsch-Kreinsen 2018; Ittermann/Niehaus 2018)

Downgrading of work

Increase in work demands & resource drain
→ Constant connectivity, digital taylorism, technostress, ... (Kirchner et al. 2020; Collins et al., 2016; Nachtwey & Staab 2015; Tarafdar et al. 2007; Wajcman 2006),

Upgrading of work

Resource gain
→ e.g. digital self determination, digital flexibility, digital visibility, digital transparency ... (Couper & Kurland, 2002; Kirchner et al. 2020; Golden & Geisler, 2007)

Polarization: Institutional Filtering of digital work and/or involved resource drain or gain to different groups of employees

(Mills & Blossfeld 2003; Tomasic & Silbereisen 2009)

1.4 Two examples of digital work

1. Hybrid work collaboration



= Digital work-related communication

- **Resource drain:** constant connectivity
- **Resource gain:** Flexible work (= control over when/where to work), digital visibility and integration
- Mixed evidence

(Abendroth & Reimann 2018, Submitted; Chung & Van der Lippe 2020; Messenger & Gschwind 2016; Wajcman 2006)

2. Algorithmic management



= Algorithmic direction and monitoring

- **Resource drain:** Digital taylorism with digital evaluation and control
- **Resource gain:** digital self determination, digital transparency
- Mixed evidence

(Abraham et al. 2019; Gensler & Abendroth 2021; Kirchner et al. 2020; Kellogg et al. 2020; Wood 2021)

2. A Comparative Perspective

Preparation, Attenuation and Filtering

*Macro-Meso, Meso-Micro,
Micro-Meso/Macro Dynamics*



**Technological
Change &
Societal institutions**

**Down-/Upgrading
Polarization of work**



**2.1 Macro-Meso:
Institutional
Preparation and
Attenuation**

**Q1: When and how do work organizations
respond and install digital work?**

- Economic, normative, legal pressures/incentives
- Financial opportunities/restrictions



Work Organizations

**Meso-Macro:
Aggregation**



Work Organizations

**2.2 Meso-Micro:
Organizational filtering**

**Q2: Do existing organizational
inequality regimes filter digital
work and involved resource
gain/drain to specific groups of
employees?**



Employees

**Q3: When and how do
employees respond and
enact agency?**

**2.3 Micro-Meso:
Individual agency**



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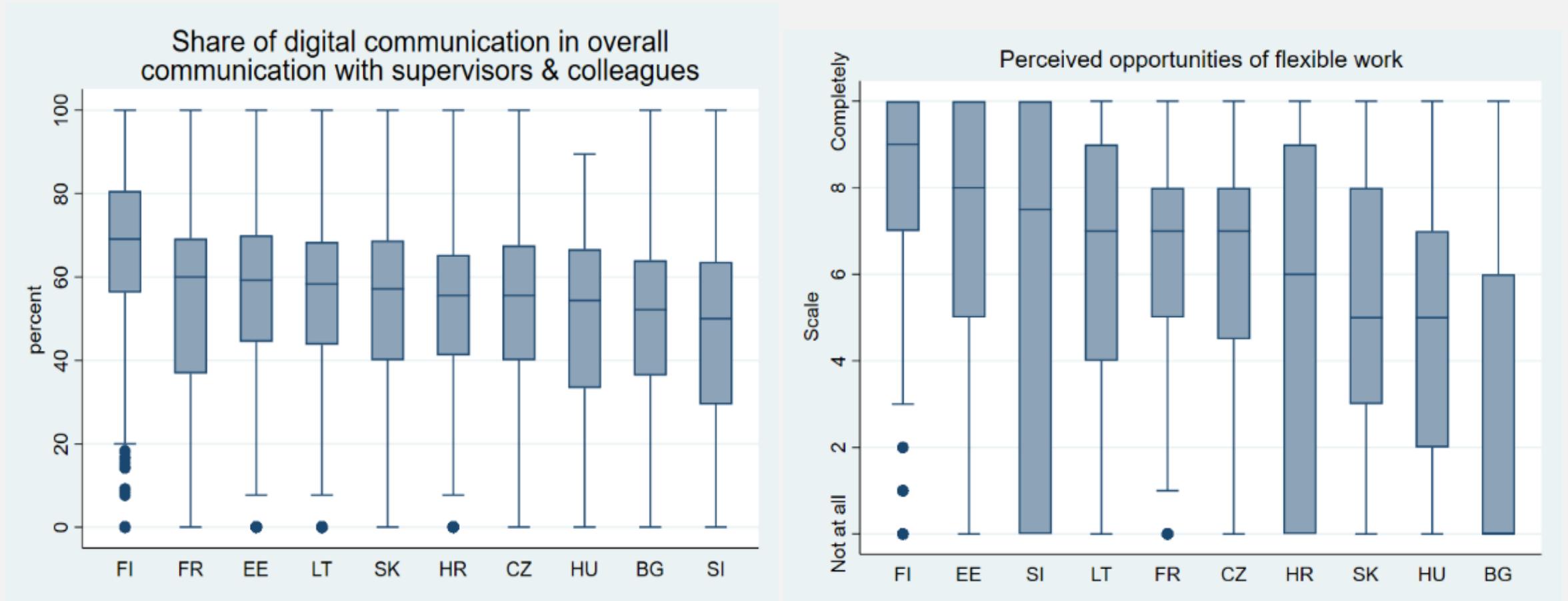
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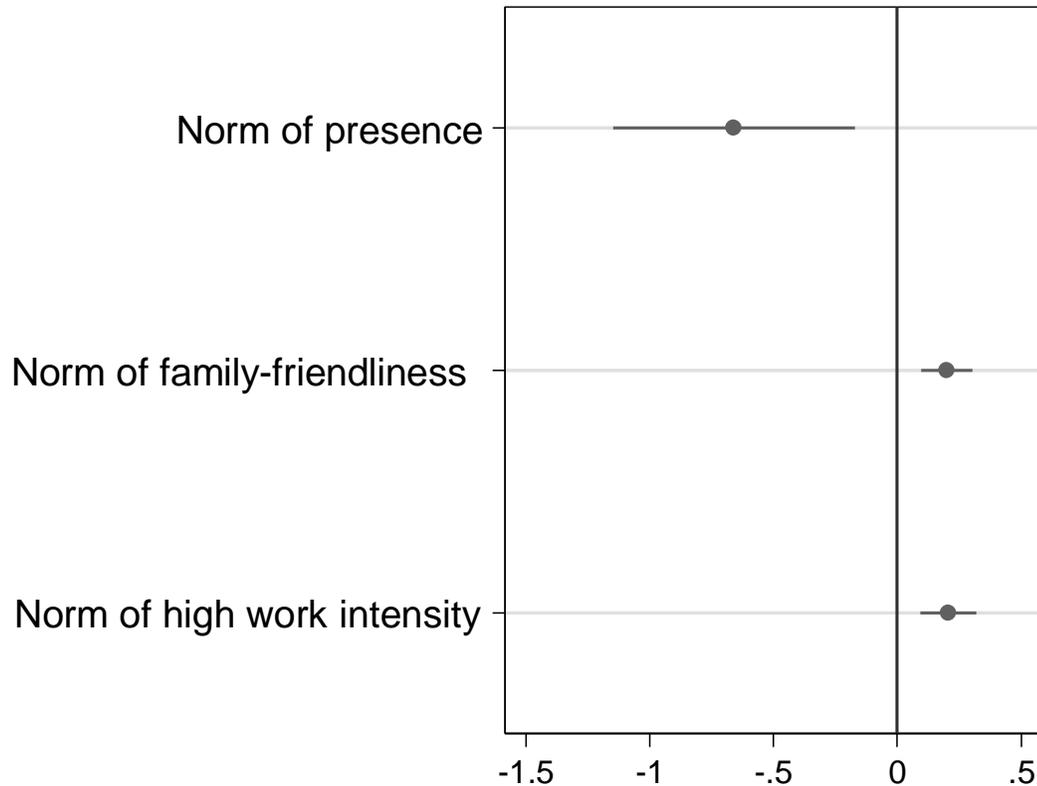
Macro-Meso dynamics: Hybrid work collaboration & opportunities of flexible work



ESS Round 10; Module Digital Social Contacts in Work and Family Life

Macro-Meso-dynamics: Hybrid work collaboration & opportunities of flexible work

The ideal worker norm and dissemination of hybrid work collaboration



Controlled for: Occupation, Sector, experience, tenure, ISEI, authority position, work autonomy gender, family situation; N=N=4,372

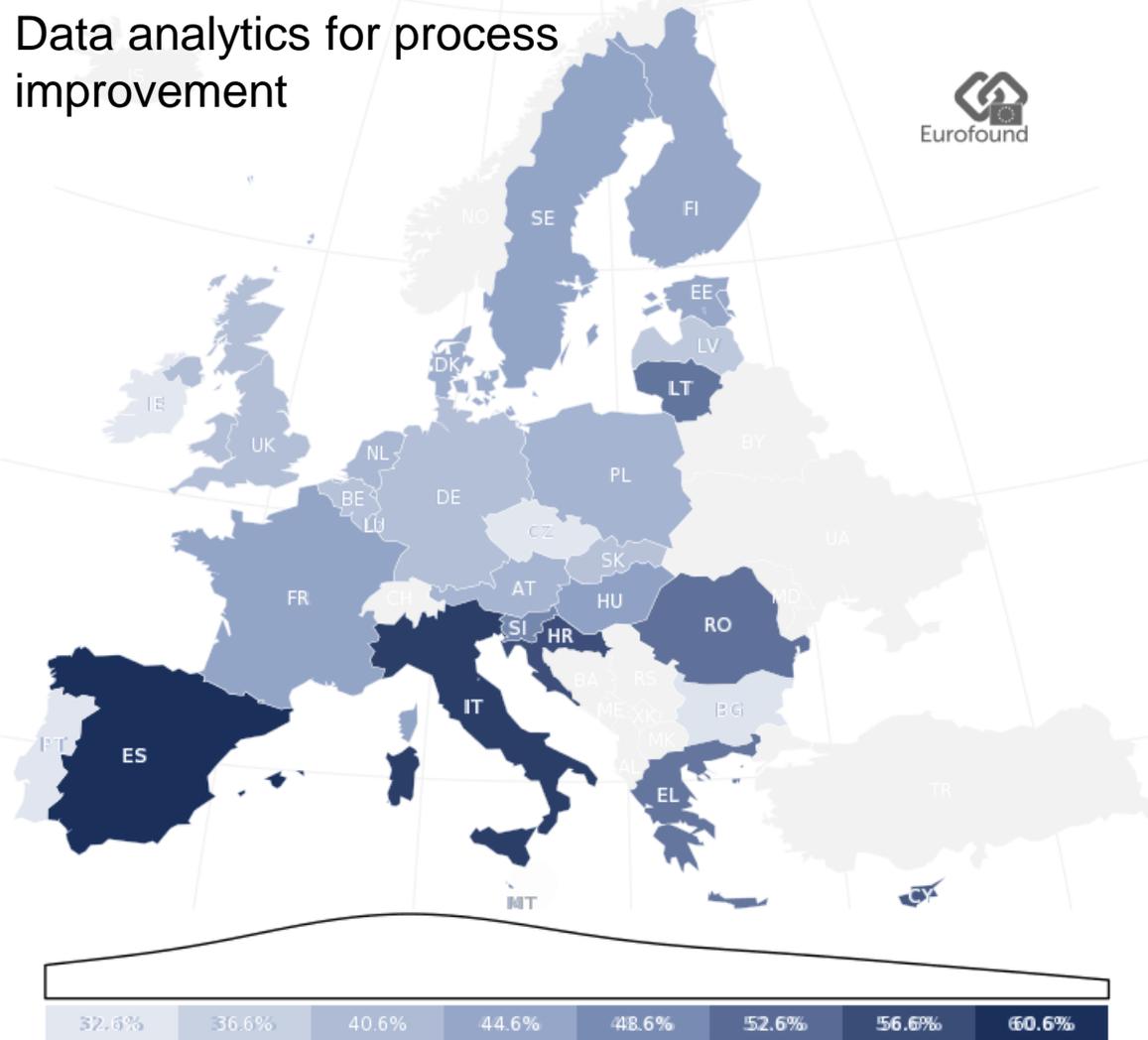
- Attenuation of hybrid work collaboration
→ Similar for opportunities of flexible working
- Preparation of hybrid work collaboration:
→ Similar for opportunities of flexible working
- Preparation of hybrid work collaboration:
→ But not flexible working

Constant connectivity was seldom reported

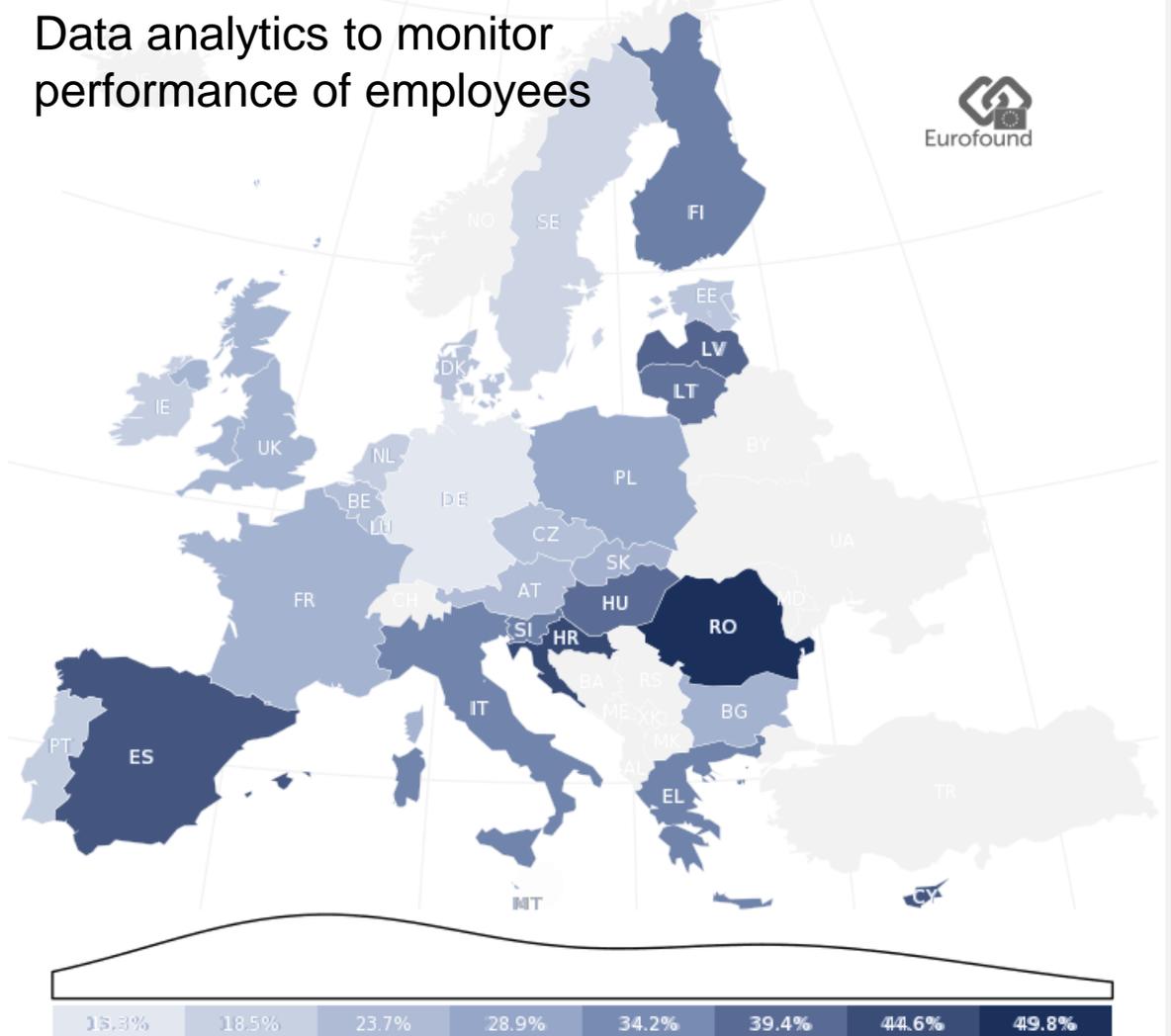
Abendroth & Reimann, Submitted

Macro-Meso dynamics: Algorithmic management & digital monitoring and evaluation

Data analytics for process improvement

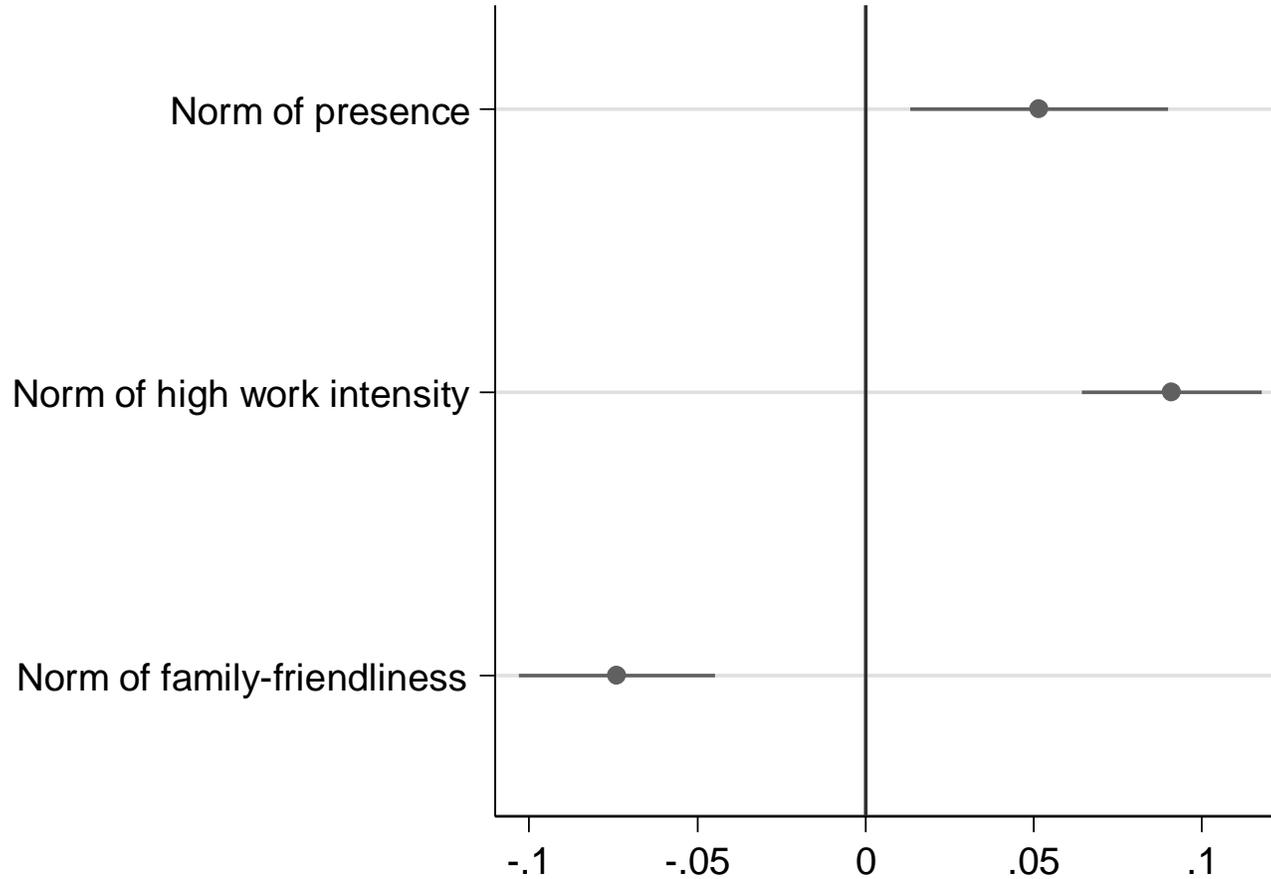


Data analytics to monitor performance of employees



Macro-Meso dynamics: Algorithmic management & risks of digital monitoring and evaluation

The ideal worker norm and dissemination of digital monitoring



Preparation of digital monitoring & evaluation

Attenuation of digital monitoring & evaluation

● Use of process produced data for evaluation of work performance

Controlled for: Occupation, Sector, experience, tenure, ISEI, authority position, work autonomy
gender, family situation; N=4,373

Technological Change & Societal institutions

Down-/Upgrading Polarization of work



2.1 Macro-Meso: Institutional Preparation and Attenuation

Q1: When and how do work organizations respond and install digital work?

- Economic, normative, legal pressures/incentives
- Financial opportunities/restrictions



Meso-Macro: Aggregation



Work Organizations

Work Organizations

2.2 Meso-Micro: Organizational filtering

Q2: Do existing organizational inequality regimes filter digital work and involved resource gain/drain to specific groups of employees?



Q3: When and how do employees respond and enact agency?



Employees

2.3 Micro-Meso: Individual agency
(Emirbayer and Mische 1998)

Technological Change & Societal institutions

Down-/Upgrading Polarization of work



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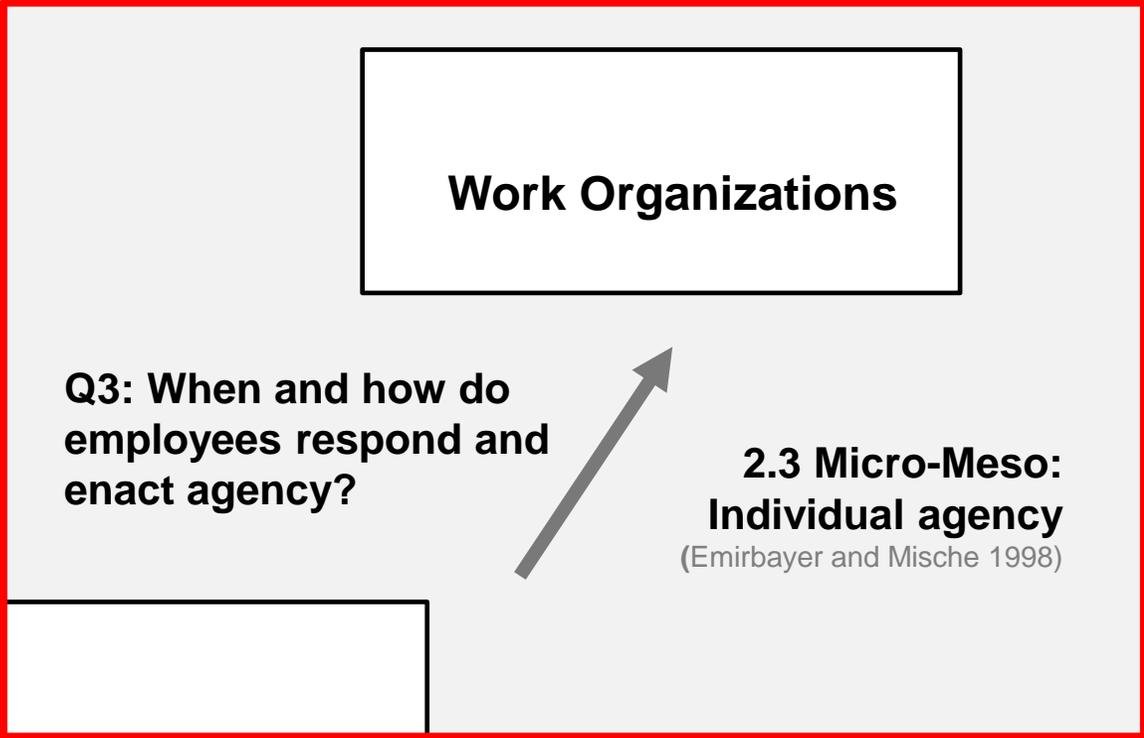
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Meso-Macro: Aggregation

Work Organizations



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Employees

Meso-Micro/Micro-Meso dynamics: Hybrid work collaboration & opportunities of flexible work

Gender & parenthood and class specific patterns

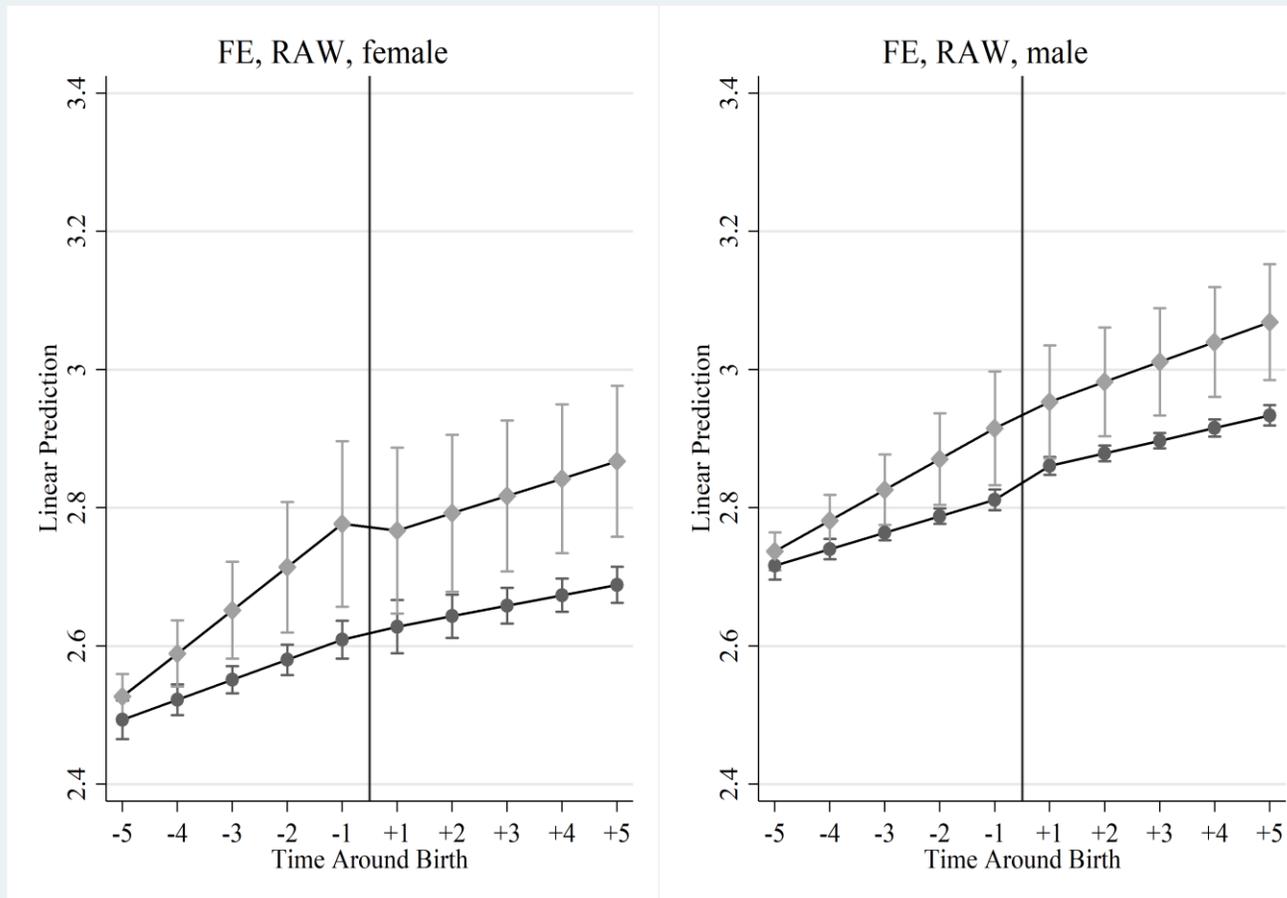


Work from home

- **2.1 Meso-Micro:** Filtering → Women/mothers: perceive more cultural barriers in organizations; but disrupted in the COVID-19 pandemic; occupational status instead gained importance
- **2.3 Micro-Meso:** Restricted Agency: Gender specific purposes for use but no fundamental change of career paths

(Abendroth et al. 2022, Homberg, Lükemann, Abendroth, Revise & Resubmit; Lott & Abendroth 2020, Lott 2019; Lükemann, Abendroth, Bürmann, WP)

Meso-Micro/Micro-Meso dynamics: Hybrid work collaboration & opportunities for flexible work

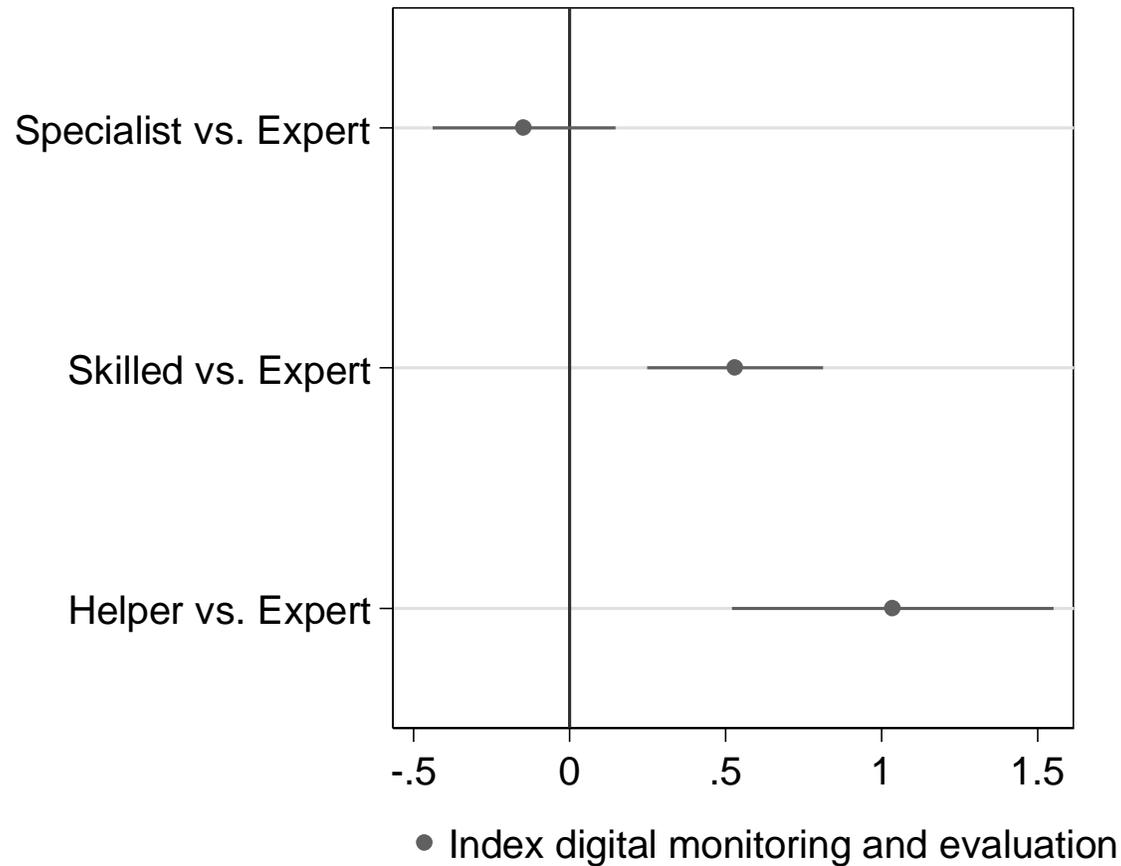


- Work from home: no impact on the pay after transitions to parenthood
- Gender and class specific career paths remain stable

Log hourly wage: ● No WfH after birth ◆ WfH after birth

Source: authors' calculations based on SOEP (1997-2014), Individual fixed effects.

Meso-Micro/Micro-Meso dynamics: Algorithmic management & digital monitoring and evaluation



→ **Class specific patterns:**
Comparison of task
requirement level/task
complexity

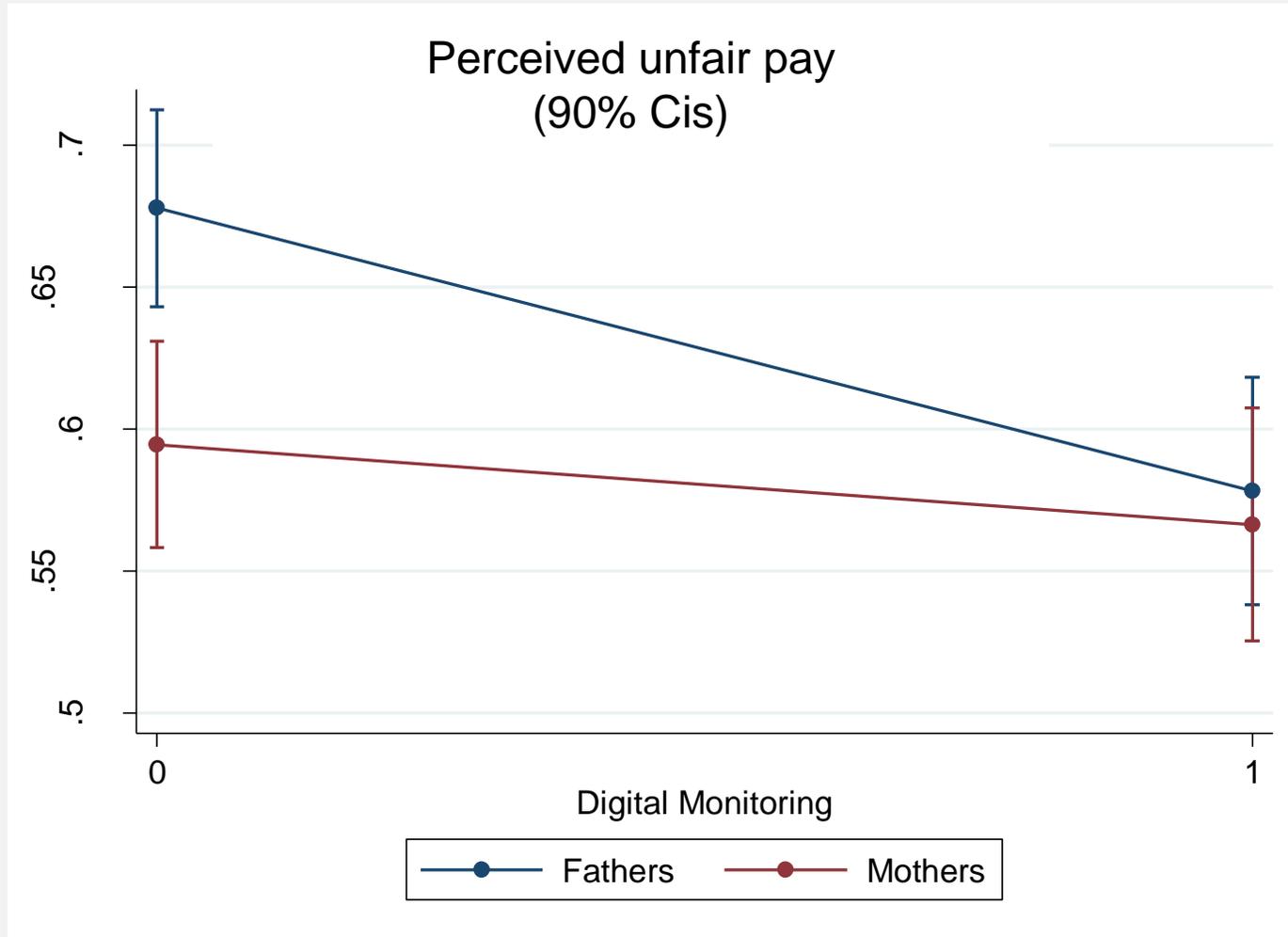


→ **Gender and parenthood:**
dependent on class



Organizational FE; Controlled for: experience, tenure, gender, family situation; N= 4373

Meso-Micro/Micro-Meso dynamics: Algorithmic management & risks of digital monitoring and evaluation



→ Digital Monitoring: less likely to perceive fairness in pay

→ Gap in perceived fairness in pay between mothers and fathers smaller

→ Gendered patterns in resource gain and drain loose importance

Organizational FE; Controlled for: experience, tenure, gender, family situation, segment, isei

3. Conclusion



Conclusion

- More sophisticated data, analyses and research required
- Digitalization: First evidence of a (limited) permeation but not of a disruptive transformation
 - The importance of macro-to-meso dynamics
 - Hybrid work collaboration and opportunities for flexible working: Institutional preparation and organizational attenuation of an upgrading scenario
 - Algorithmic management and digital monitoring and evaluation: Institutional and organizational attenuation

Conclusion

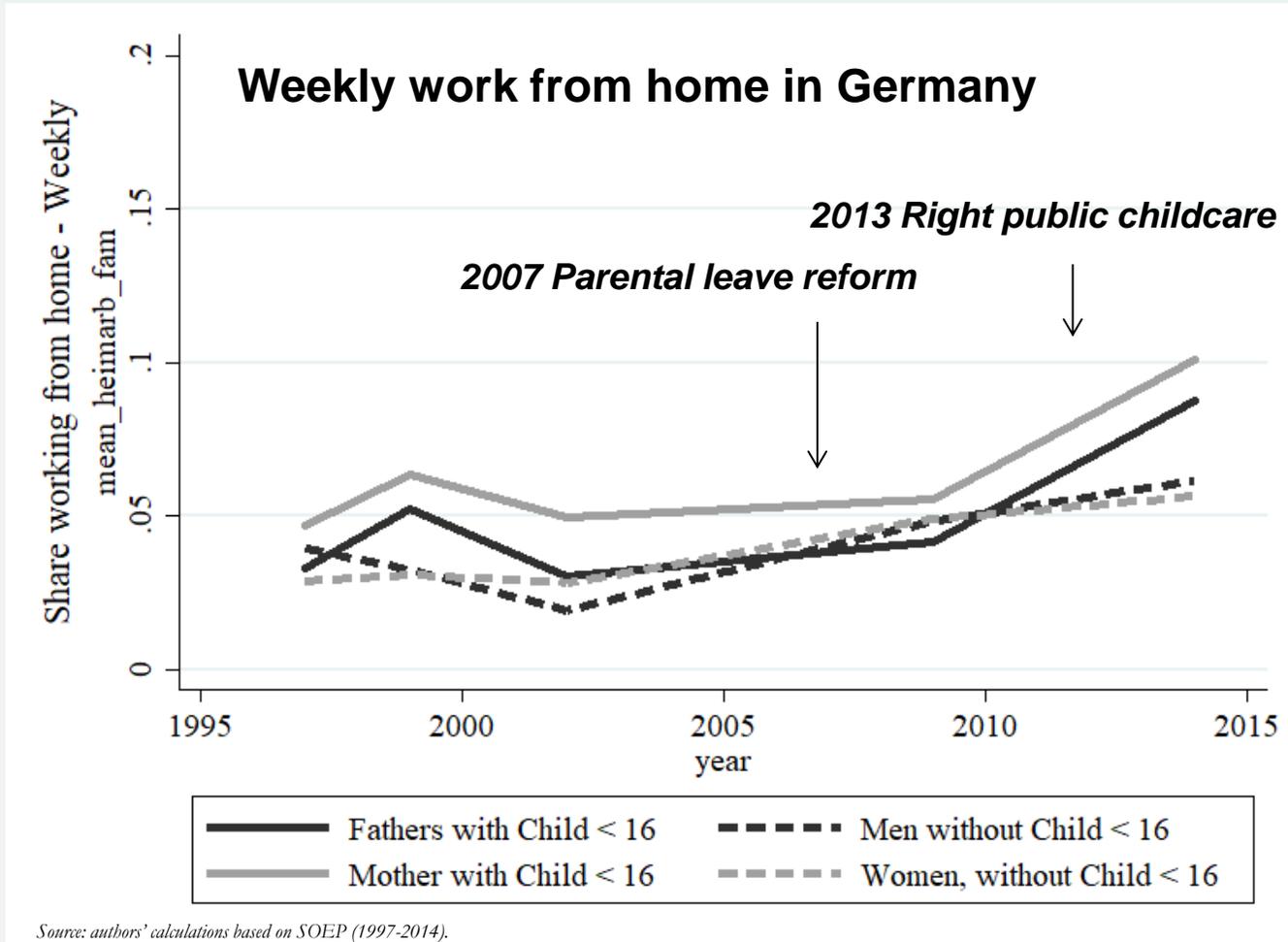
- Some evidence for polarization: Gender, parenthood and class specific patterns
 - Hybrid work collaboration and algorithmic monitoring and involved work demands and resources:
filtered to different employee status groups
 - Gender, parenthood and class specific patterns differ between the two types of digital work
 - Limited Agency

Thank you for your attention!

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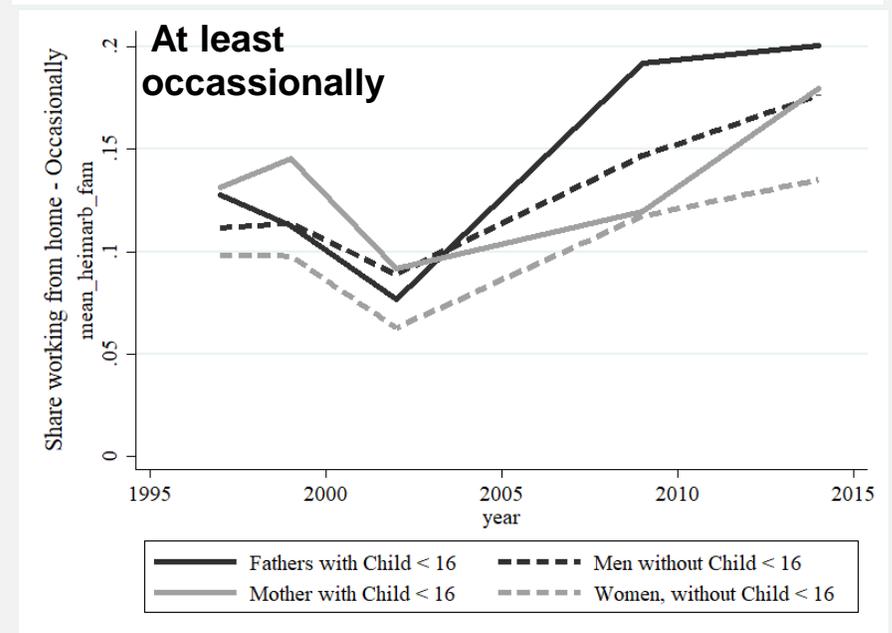
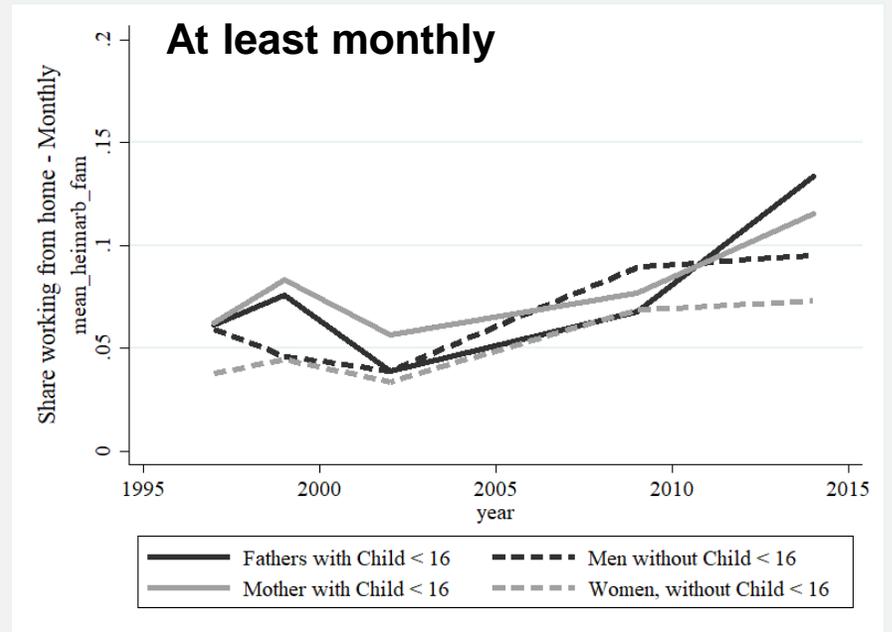
Backup

Meso-Micro/Micro-Meso dynamics: Hybrid work collaboration & opportunities for flexible work

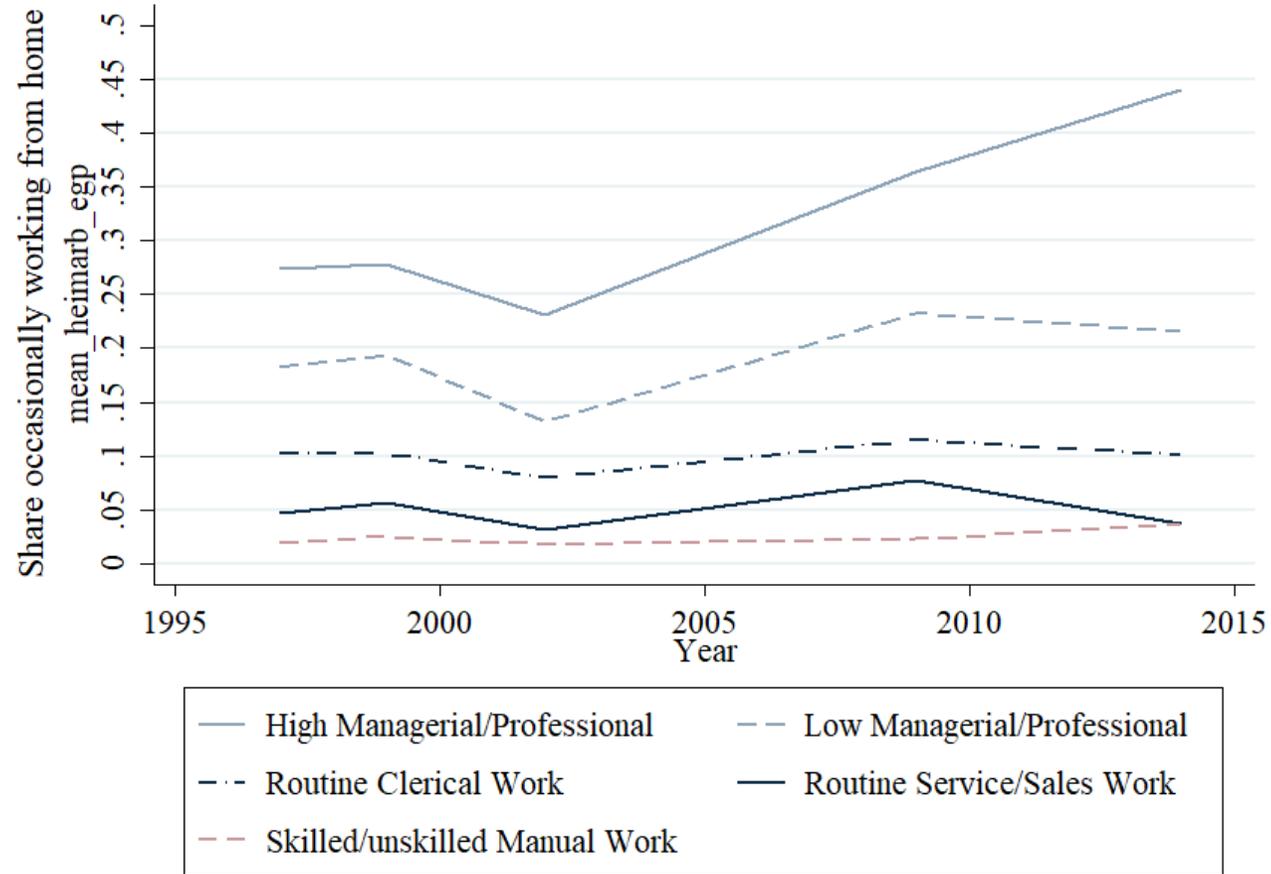


Source: authors' calculations based on SOEP (1997-2014).

Homberg, Lükemann, Abendroth, Revise & Resubmit

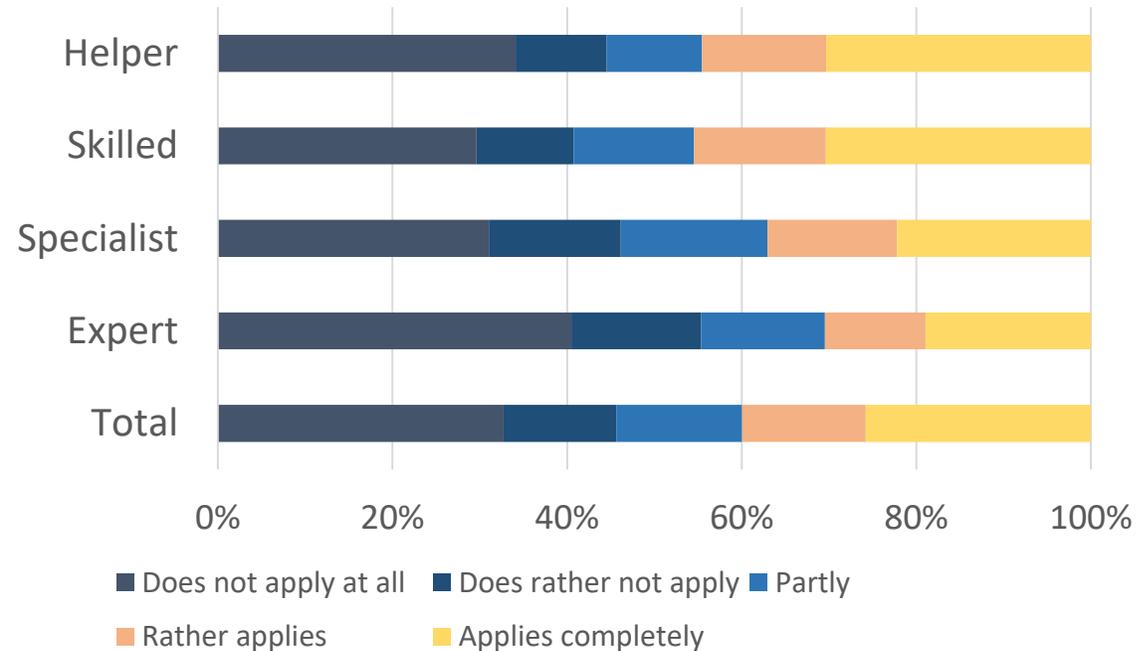


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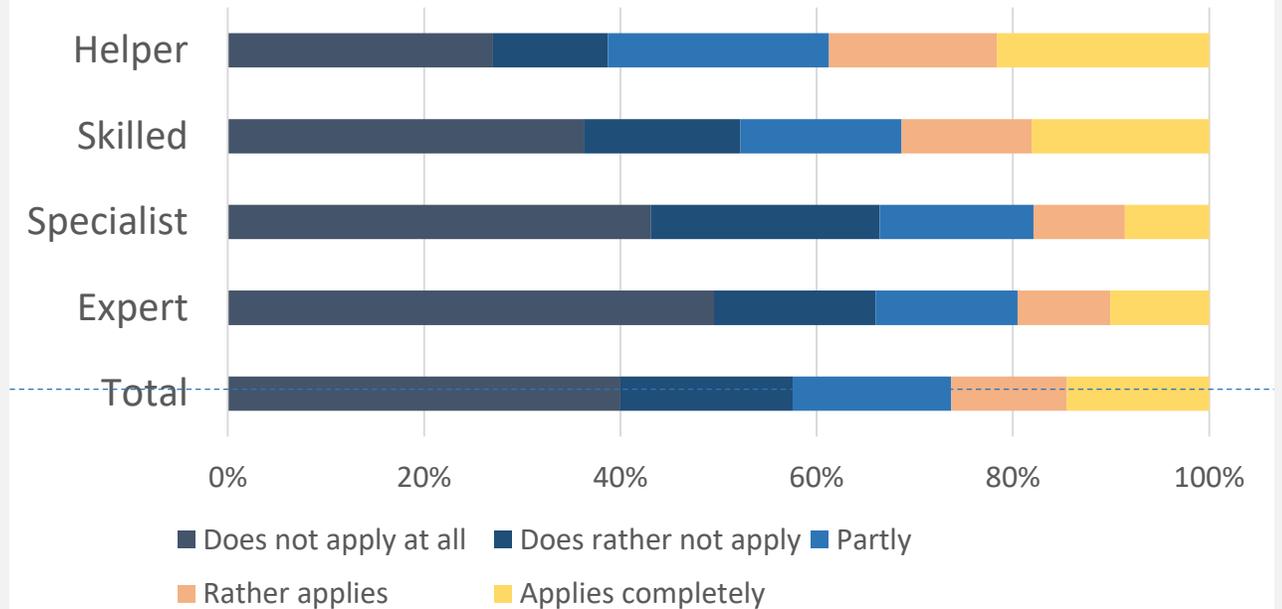


Algorithmic management: organizational filtering & individual agency

Automatic storage of data about work steps



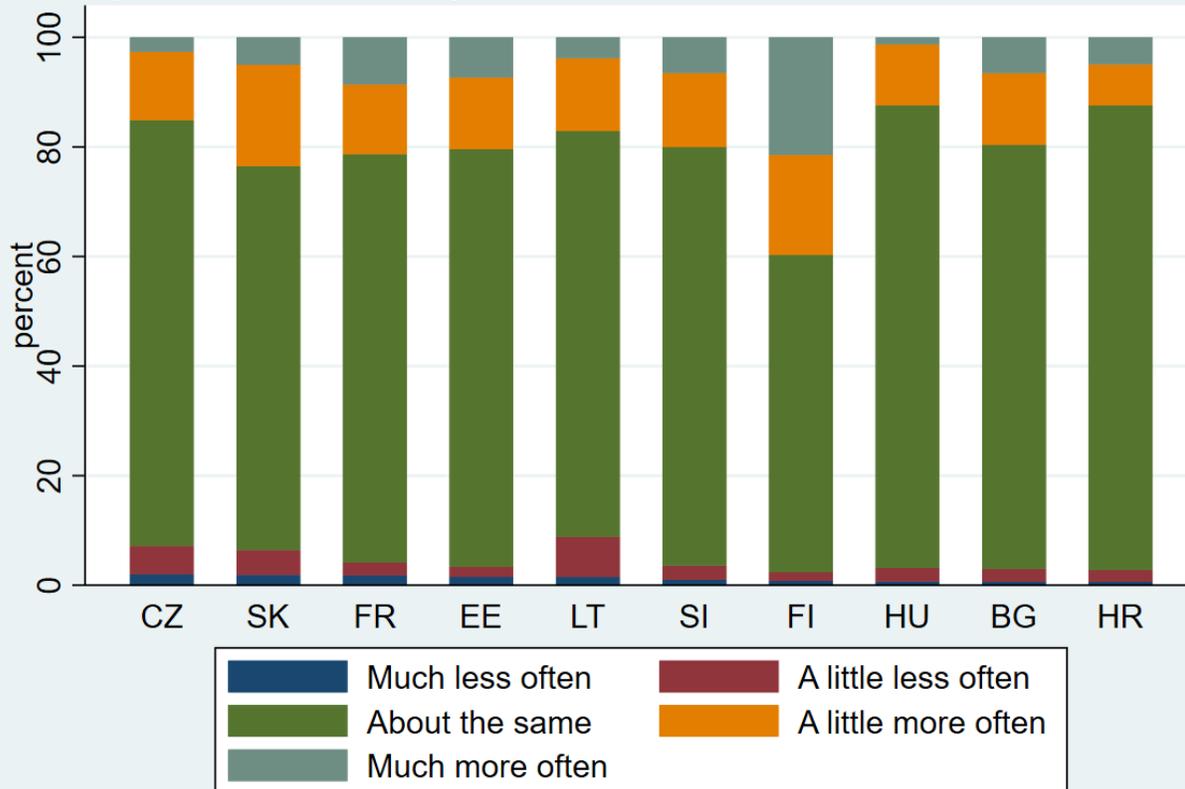
Performance evaluation due to automatic data storage



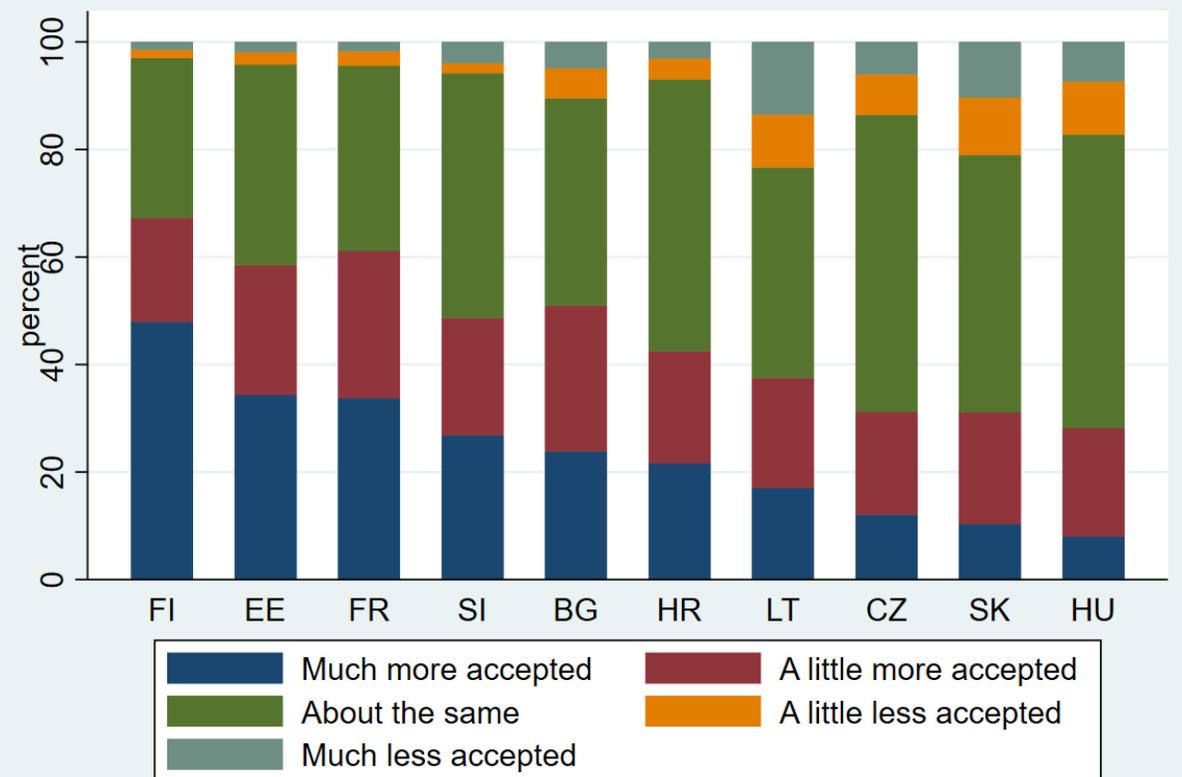
Algorithmic management and work-life conflict (Abendroth, Marx, Meyer; WP)

External Shock: The COVID-19 pandemic

Compared to before the pandemic: Online or mobile communication



Work from home or place of choice, how accepted compared with before COVID-19



Work from home or place of choice, how accepted compared with before COVID-19

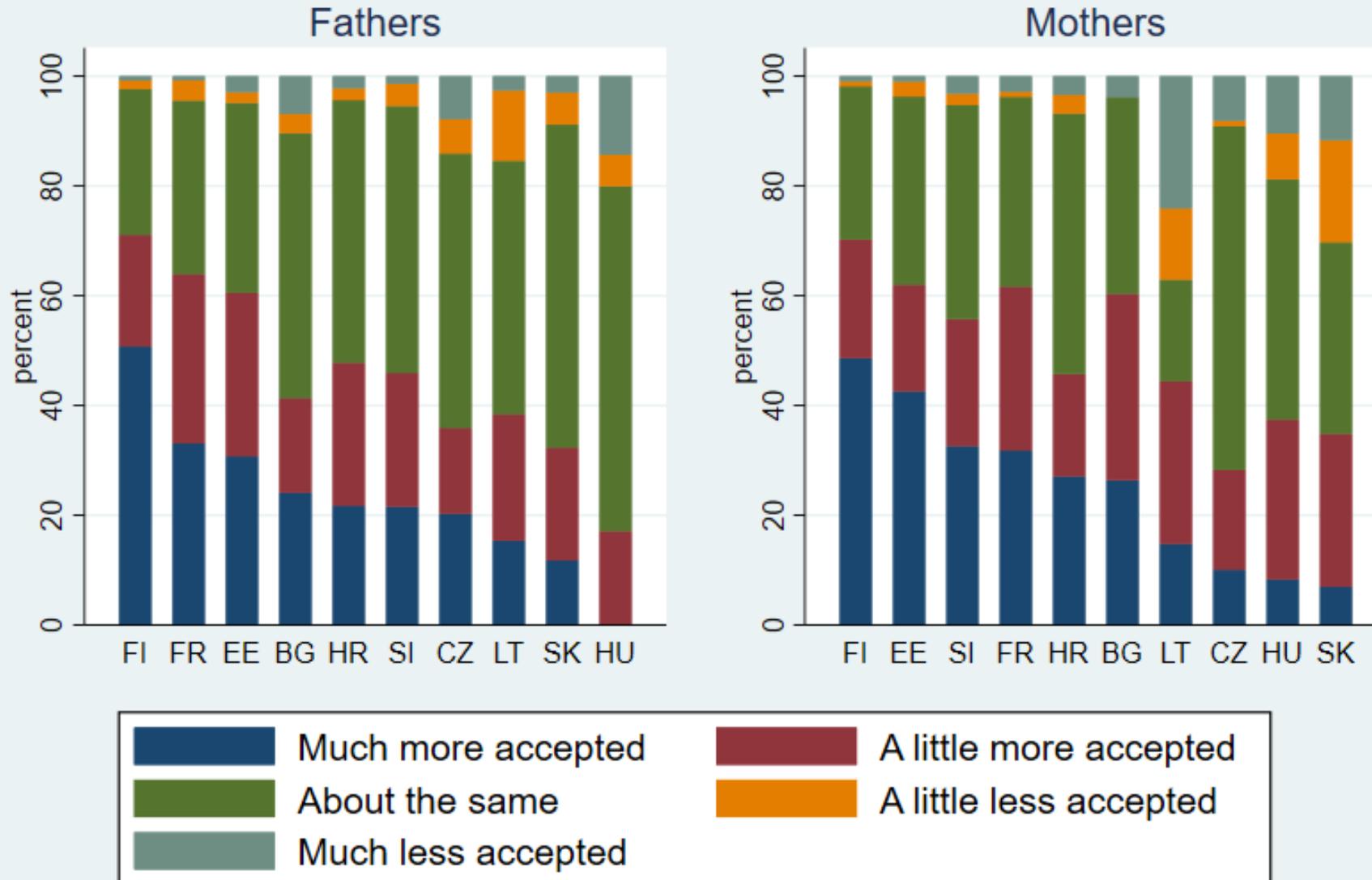


Figure 1: Time-based work-to-family-conflict among women after transition to parenthood: The importance of the use of flexitime

