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Information Research

Is the Structure of “Regular Working Days” about to Dissolve?

**Changes in Employees’ Time-Use Patterns Working in
Enterprise Collaboration Systems During the COVID-19 Pandemic**

Nathalie Scharf, Laura Lükemann, Petra Schubert, Susan P. Williams, Anja Abendroth, Antje Schwarz



- Background
- Data
- Dashboard and Results
- Conclusions





- COVID-19 Pandemic *ICT use/remote working* reached new heights (Abendroth et al., 2022; Richter, 2020)
- Increased possibilities to communicate with colleagues and superiors independent of time and place
 - Measures to reduce spread of the virus demanded employers to grant *work from home*
 - Employees' needs increased to react flexibly to changes in *family situation* (e.g. school closures)
- Fuelled an ongoing debate about the flexibility potentials of telework:
 - Challenging *local presence culture* and
 - New risk of emerging *digital presence cultures* arising from expectations of increased availability of workers
- (Sociological) research on how ICT use permeates work processes and affects employees remains inconclusive
 - **Negative:** Decrease in boundary control, work intensification, challenges reconciling work and family (Mazmanian, 2013; Wajcman & Rose, 2011)
 - **Positive:** Increased autonomy, better family role, reduced Work family conflict (Golden & Geisler, 2016; Derks et al., 2016; Mazmanian, 2013; Hill et al., 2010; Wajcman et al., 2010)



- Previous results mostly rely on cross-sectional **survey data** on **employees' experiences** during the pandemic
 - Work from home increased; communication habits and processes of cooperation changed (Van Zoonen et al., 2021)
 - Sectoral differences: increase OR decrease of working hours (Bünning et al., 2020; Kohlrausch & Zucco, 2020; Reichelt et al., 2021)
 - Household situation (constellation, number and age of children, economic situation) influenced stress-perception of pandemic (Kohlrausch & Zucco, 2020; Möhring et al., 2020)
- Still, we know little about how the actual **scope** and **time use-patterns** of digital communication technologies have developed throughout the pandemic

*Did workers, using digital communication technologies, change the spread of their **working hours** throughout the day and week during **COVID-19**?*



3 **Content/DX Platforms:**
WCMS, file storage

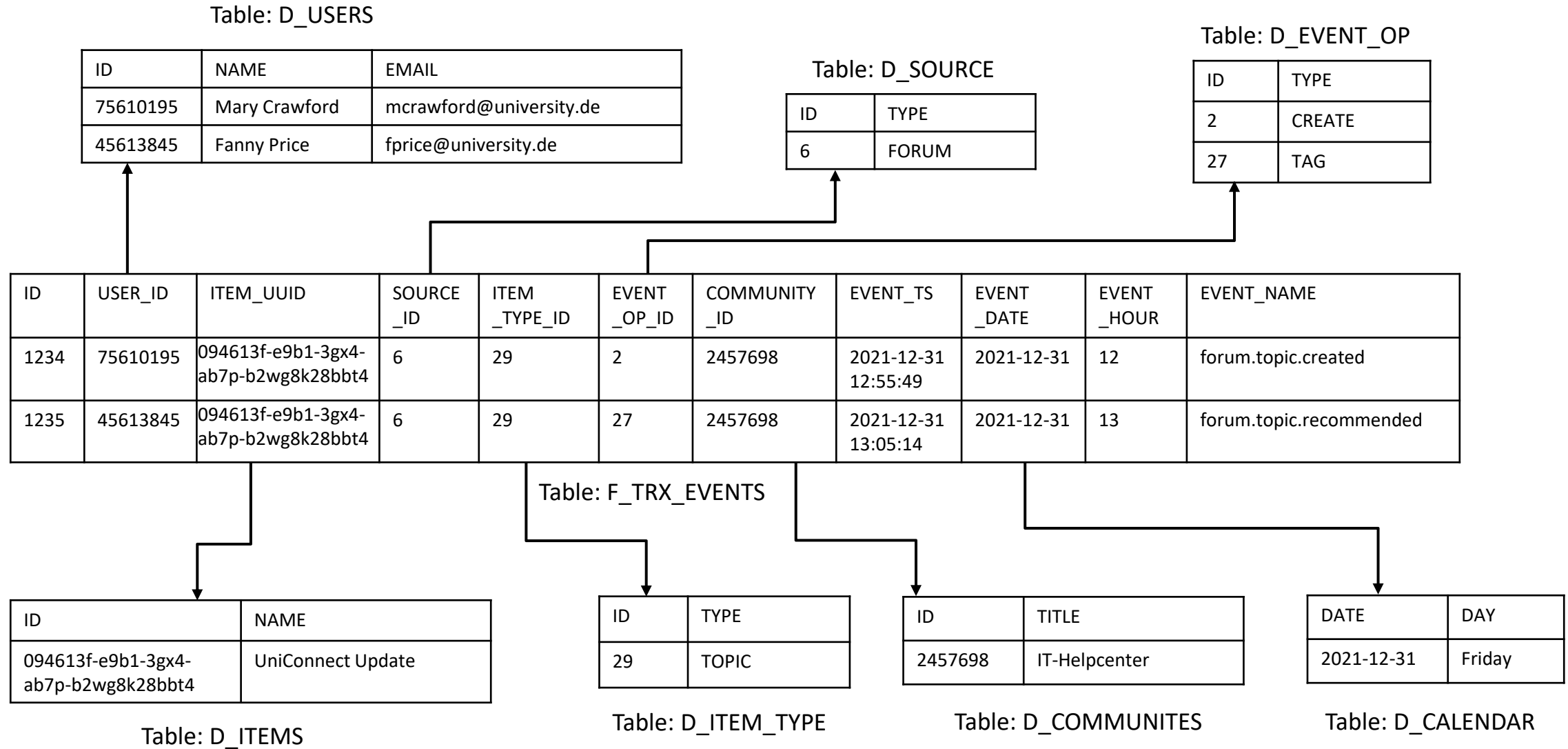
4 **Communication:**
video conference
and text chat

- Overview
- Overview
- Recent Updates
- Status Updates
- Members

Note: All Use Cases can include external parties

Basic Use Cases (IRECS Model):

- | | | | | |
|--|---|---|---|---|
| 1 Project Team Organisation
(Projekt(team)-organisation) | 2 Organisational Group Organisation
(Organisationsgruppen-organisation) | 3 Internal Corporate Communication
(Interne Unternehmens-kommunikation) | 4 Knowledge Management
(Wissensmanagement) | |
| 5 Networking
(Networking) | 6 Meeting Organisation
(Sitzungsorganisation) | 7 Asynchronous Discussion
(Asynchrone Diskussion) | 8 Synchronous Discussion
(Synchrone Diskussion) | |
| 9 Ad hoc Teamwork
(Synchrone ad hoc Gruppenarbeit) | 10 Idea and Innovation Management
(Ideen- und Innovations-management) | 11 Information Storage
(Informationsablage) | 12 Document Creation
(Dokumentenerstellung) | 13 Task Management
(Aufgabenverwaltung) |



Timing Effects Before and After the Covid-19 Pandemic

Date Slicer

01.03.2019 28.02.2022

A

Overview of Relevant Metrics per Period

Period	Number of Users	Number of Events	Number of Workspaces	Average Number of Events per User	Average Number of Events per Day
1	30	54151	296	1805	151
2	30	92067	398	3069	254
3	30	78832	378	2628	218
Total	32	225050	753	7033	208

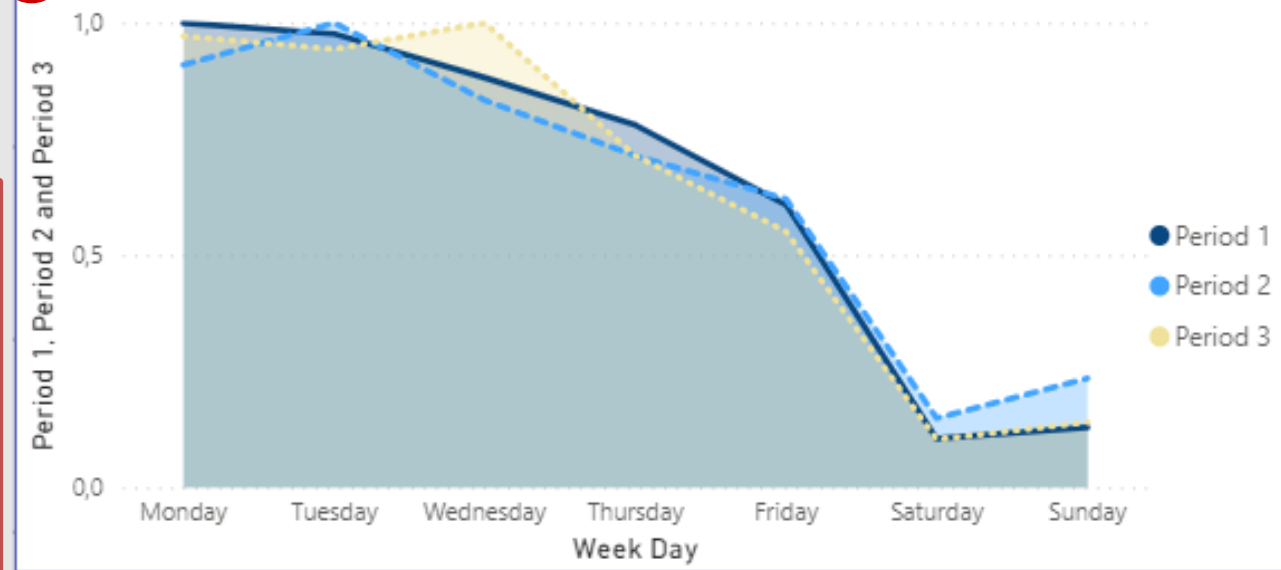
B

Monthly Number of Events



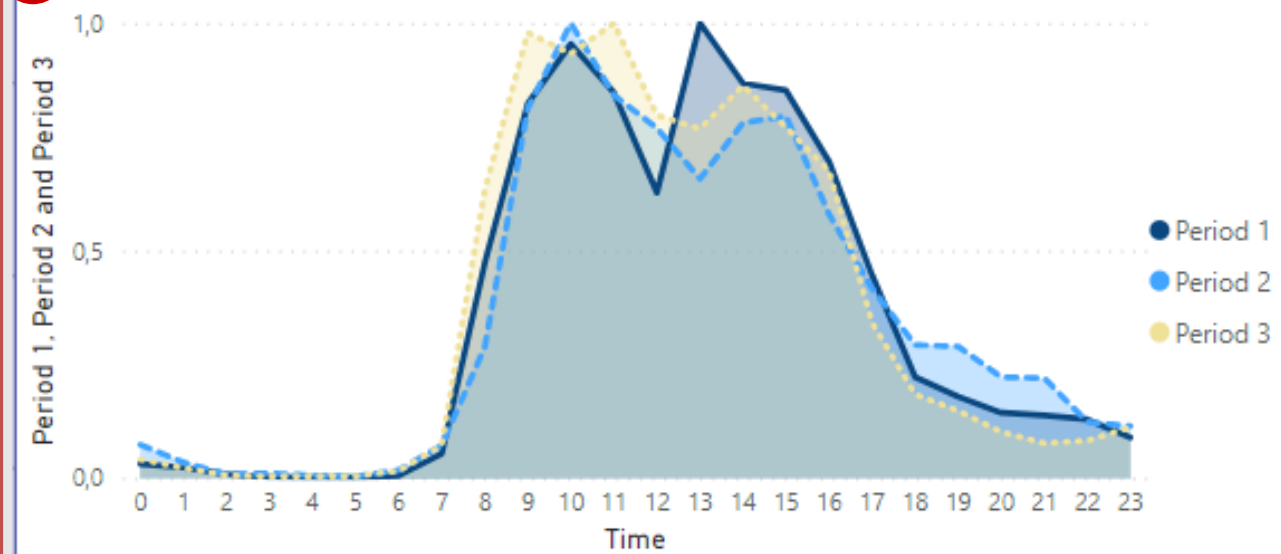
C

Normalised number of Events by Weekdays



D

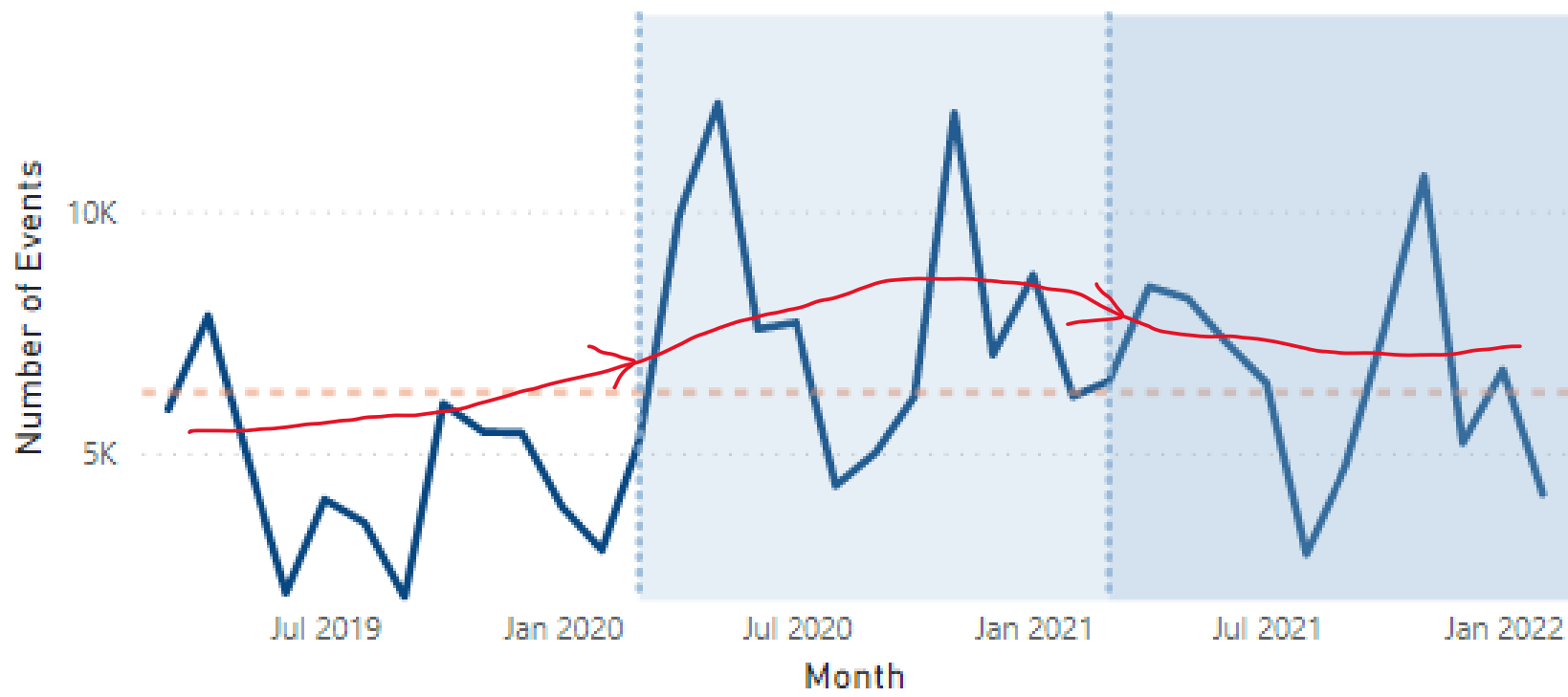
Normalised number of Events by Hour



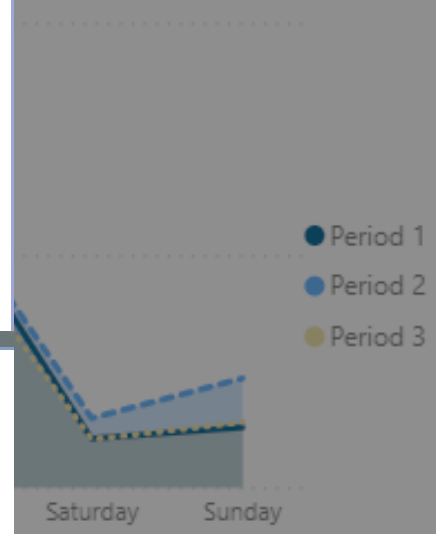
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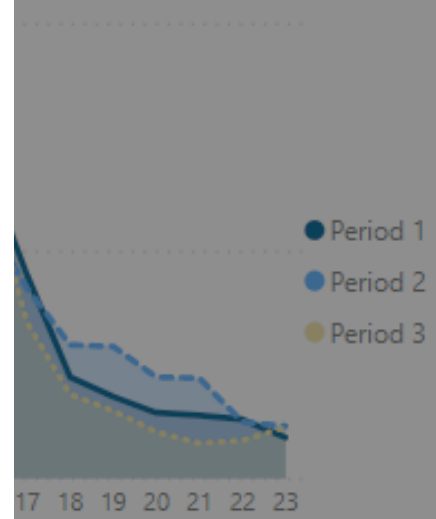
Monthly Number of Events



Weekdays



Hour





Timing Effects Before and After the Covid-19 Pandemic

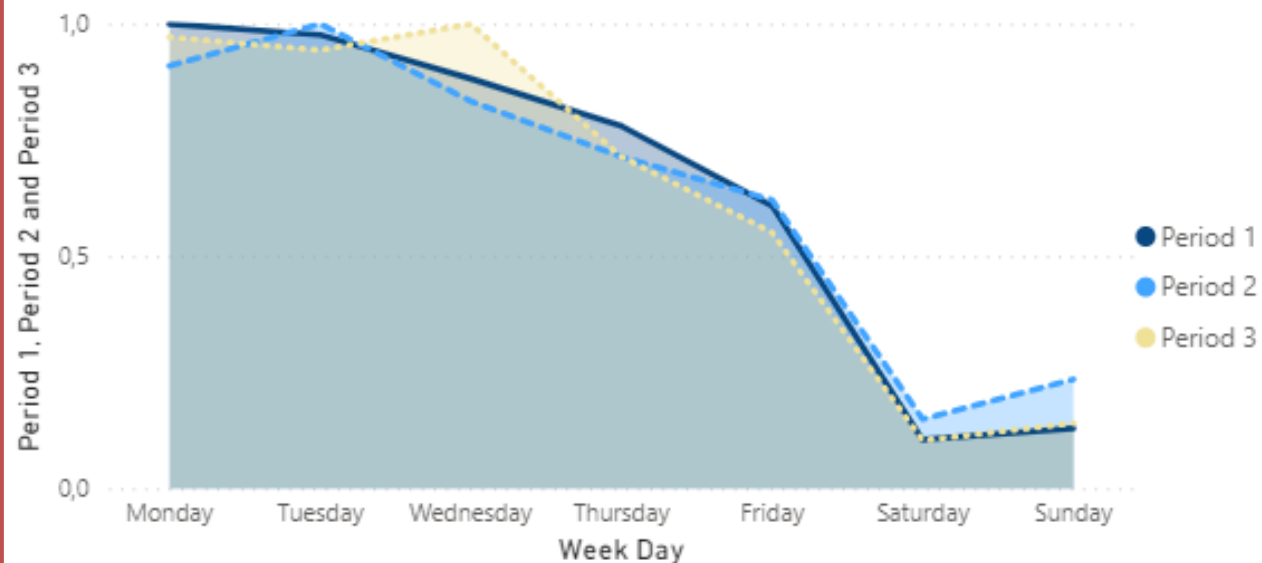
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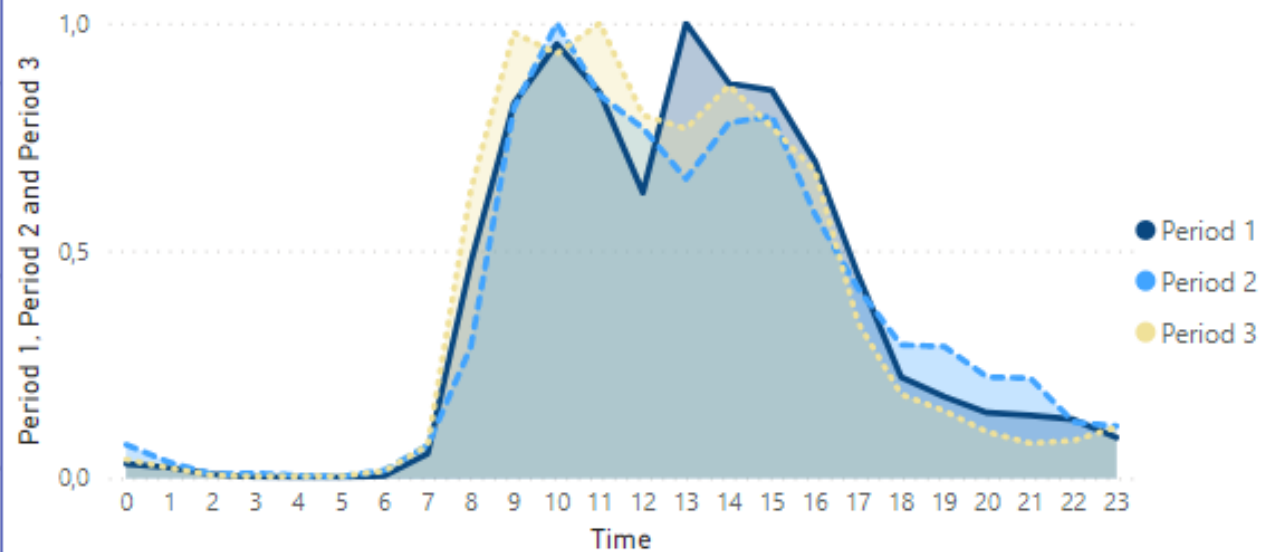
Normalised number of Events by Weekdays



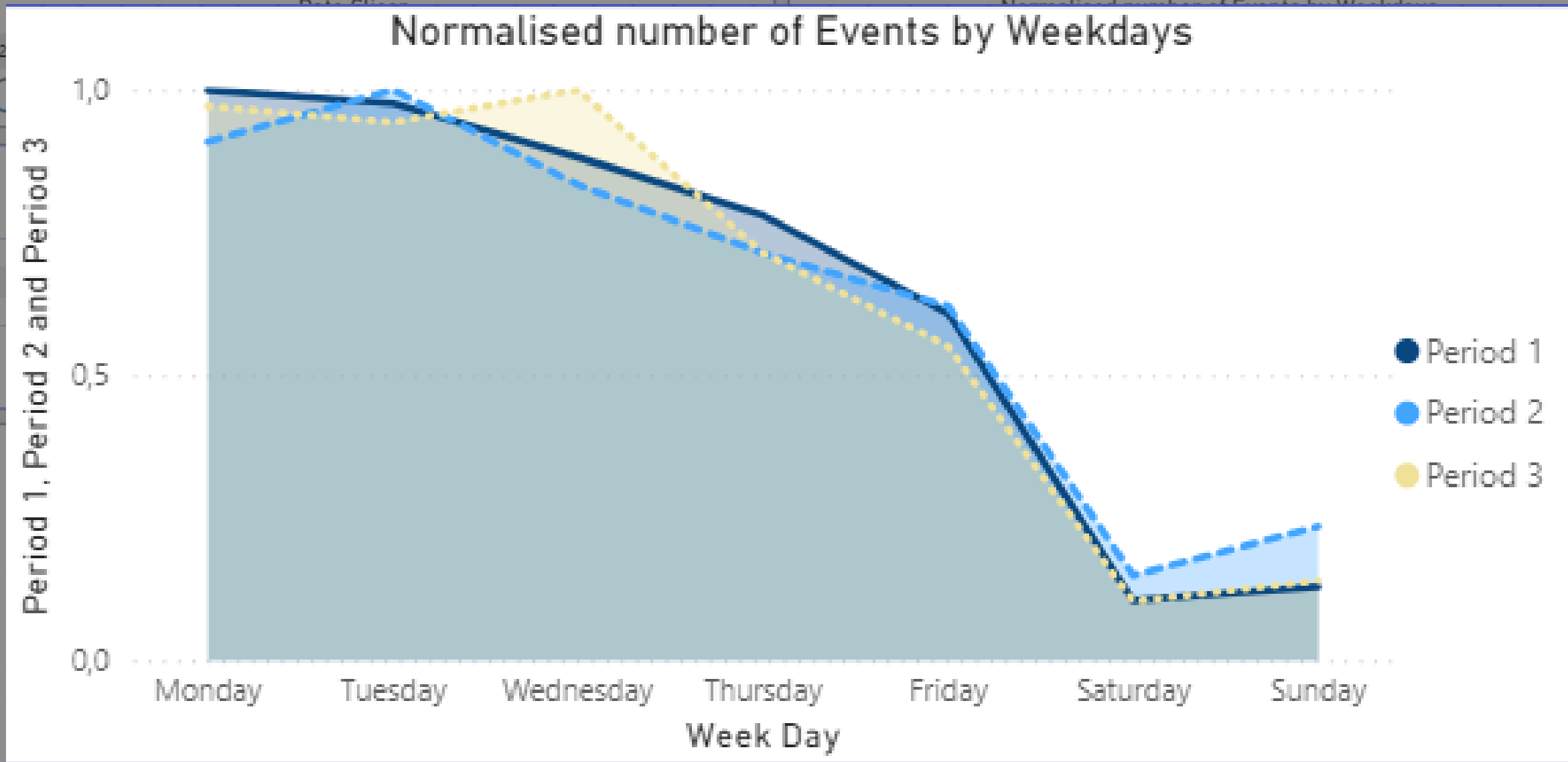
Monthly Number of Events



Normalised number of Events by Hour



Timing Effects Before and After the Covid-19 Pandemic



01.03.2

Period

1

2

3

Total

10K

5K

Period 1

Period 2

Period 3

Period 1

Period 2

Period 3

Jul 2019

Jan 2020

Jul 2020

Jan 2021

Jul 2021

Jan 2022

0,0

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

Time



Timing Effects Before and After the Covid-19 Pandemic

Date Slicer

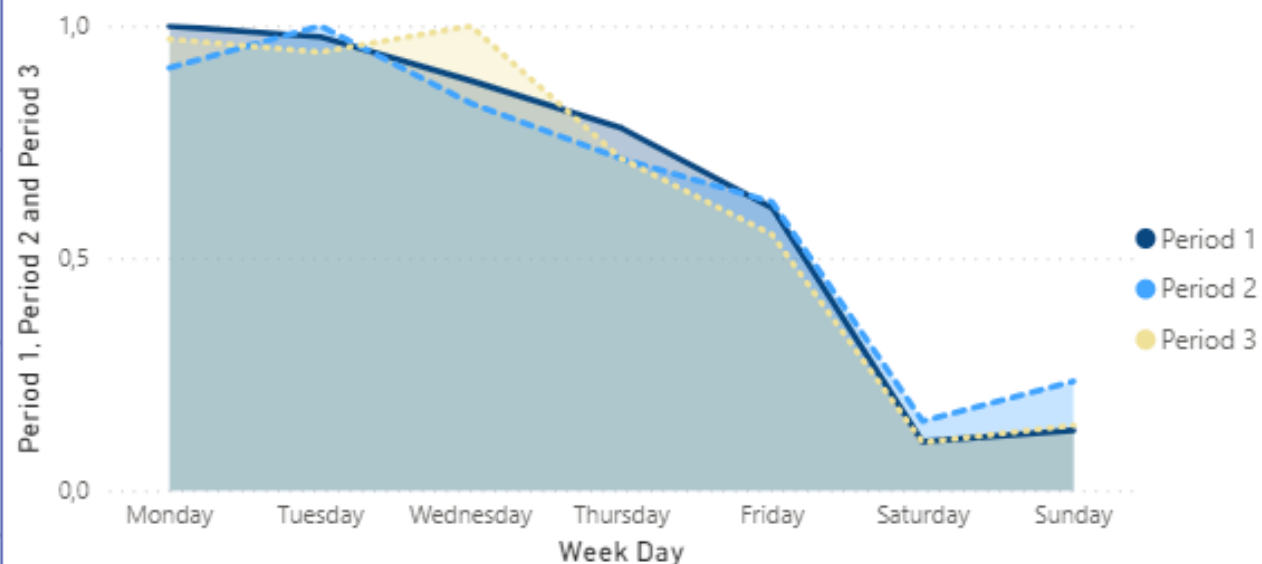
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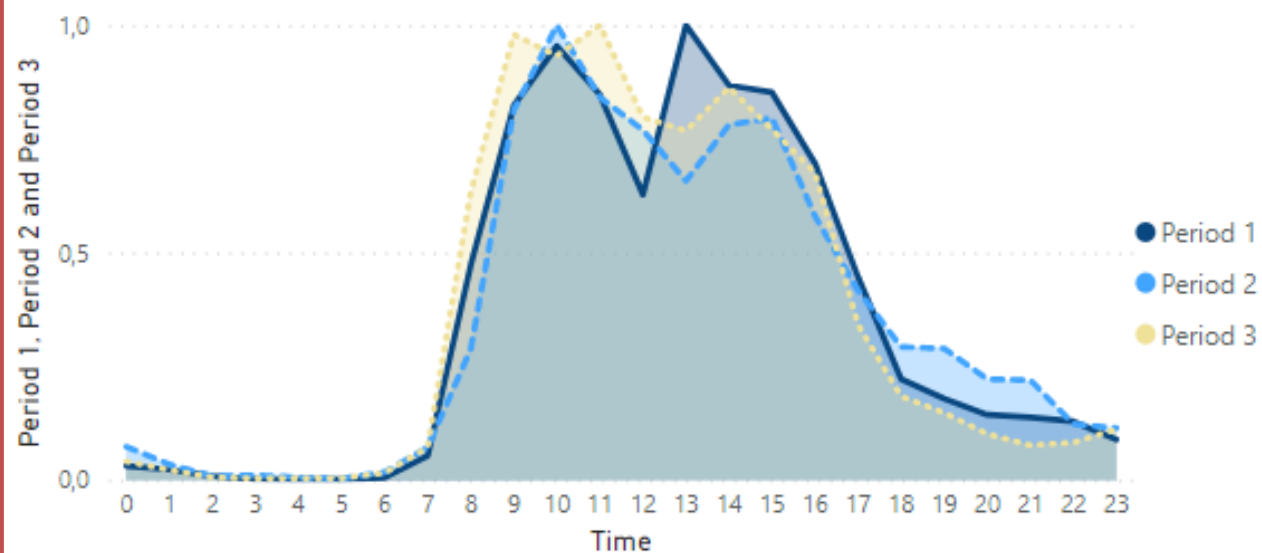
Normalised number of Events by Weekdays



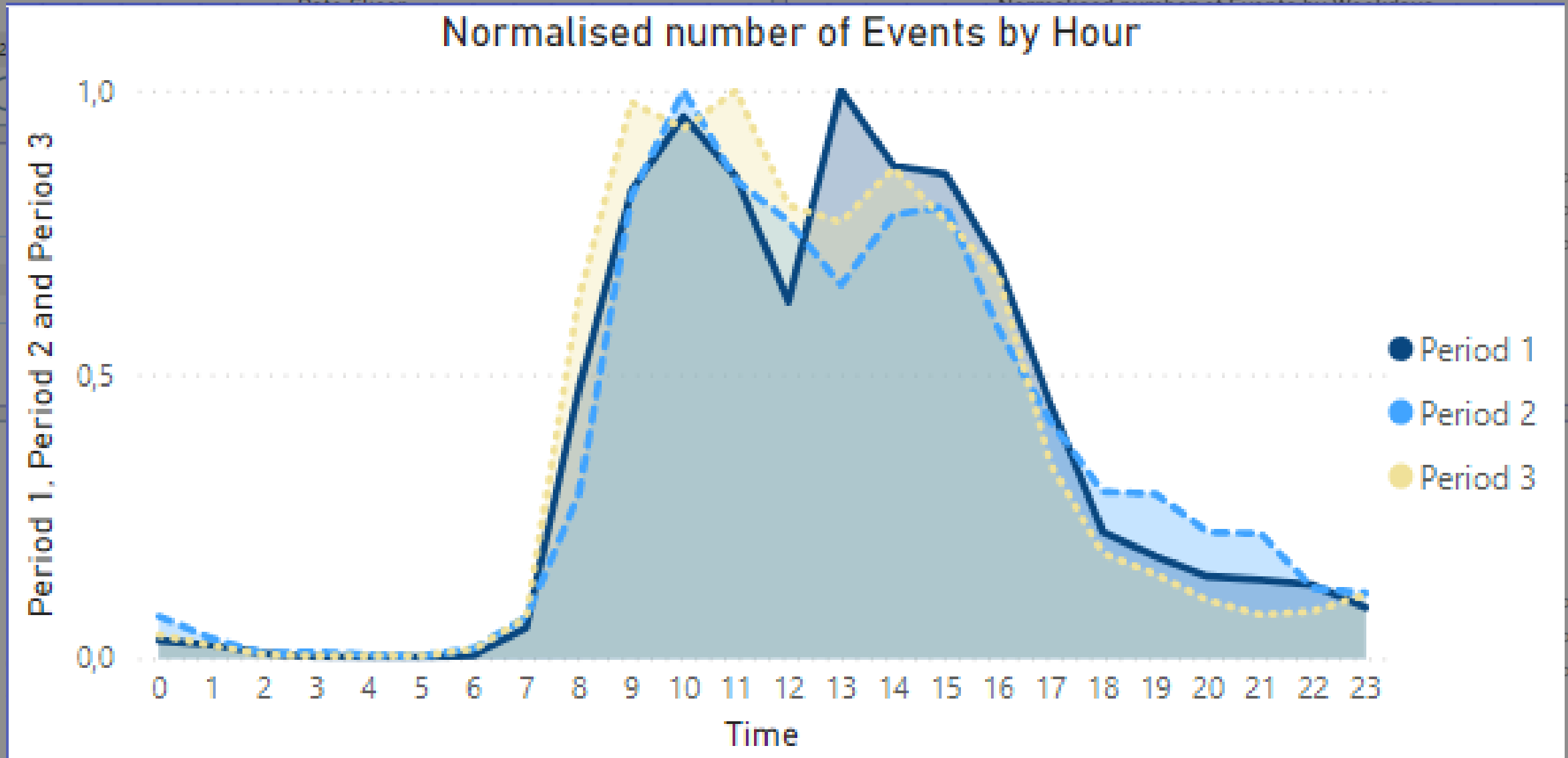
Monthly Number of Events



Normalised number of Events by Hour



Timing Effects Before and After the Covid-19 Pandemic



01.03.2

Period

1

2

3

Total

10K

5K

Number of Events

0,0

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Time

Jul 2019

Jan 2020

Jul 2020

Jan 2021

Jul 2021

Jan 2022

Date Slice

Normalised number of Events by Week

Period 1

Period 2

Period 3

Period 1

Period 2

Period 3

0,0

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Time



- **Permeation**: Pandemic as a driver of permeation - **More work** has been **done digitally** during the pandemic than before.
- **Weekdays**: At the beginning of the pandemic, employees increased work on **weekends**, but only marginally.
- **Work hours**: Restructuring the **workdays** in terms of working after hours or shifting **lunch breaks** was more common in the beginning of the pandemic. Long term trends point to **more activity in the morning**.
- Generalizations of findings difficult due to limited sample
- Nevertheless: Long-term results provide evidence in direction of more flexibility



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Thank you for your attention.

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