



Digital Transformation at the Local Tier of Government in Europe: Dynamics and Effects from a Cross-Countries and Over-Time Comparative Perspective (DIGILOG)

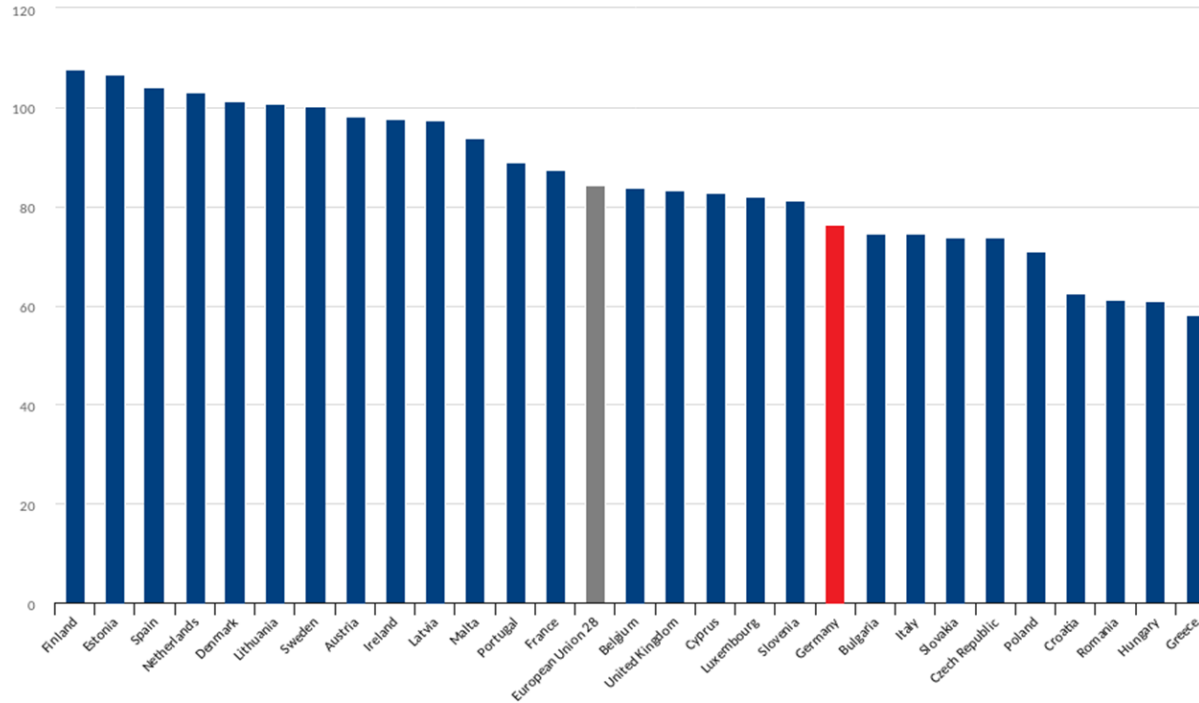
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1. Relevance of the topic and example of Germany
2. The DIGILOG project
 - Dimensions of digitalization
 - Research questions: dynamics and effects of change
 - Research design and methods
 - Research team

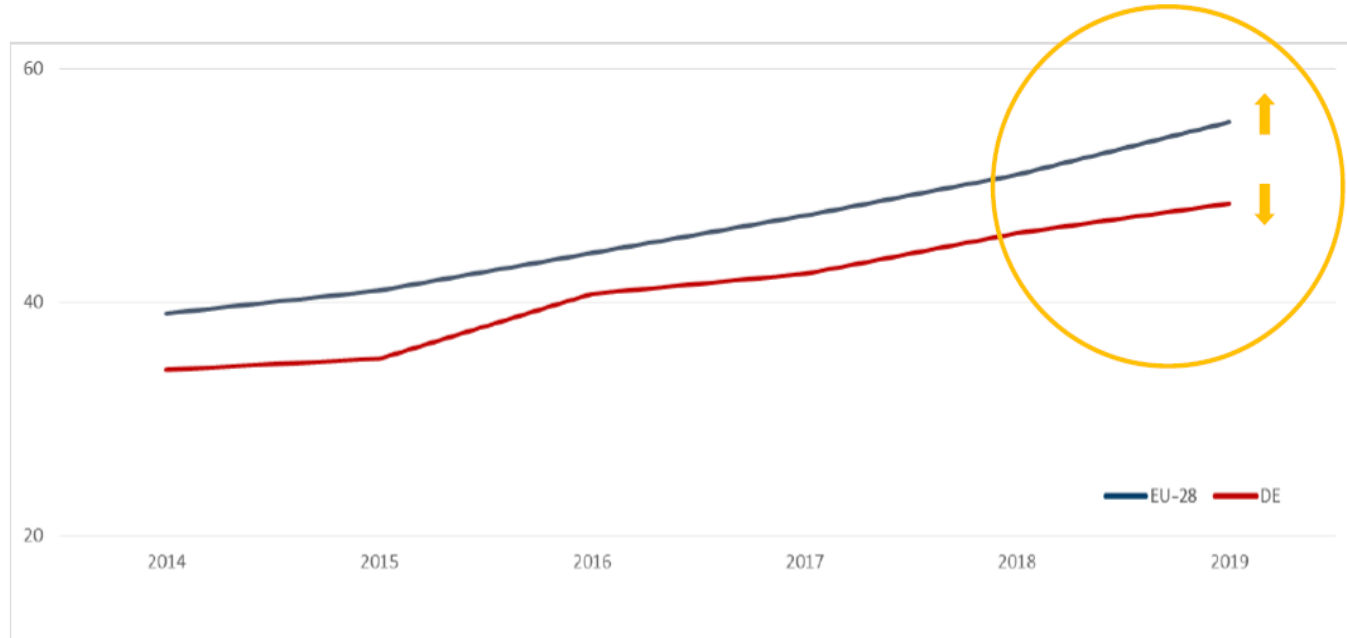
- Digital transformation as most significant international mega-trend of PA reform → important role of the local level of government
- Digital transformation is expected to reshape local service delivery, public administration, and governance in Europe fundamentally.
- The COVID-19 pandemic has shown the importance of a well-prepared digital administration to replace/complement analogue processes (Kuhlmann et al., 2020a)
- Local government is a key player of digital transformation (Steiner et al., 2018; Kuhlmann, 2009, p. 21; Bouckaert/Kuhlmann, 2016)
→ **research gap in Comparative Public Administration!**

Germany's position in international rankings for the digitization of public administration



digital-agenda-data.eu/charts/desi-components (2018)































E-government over time: Germany in an EU comparison

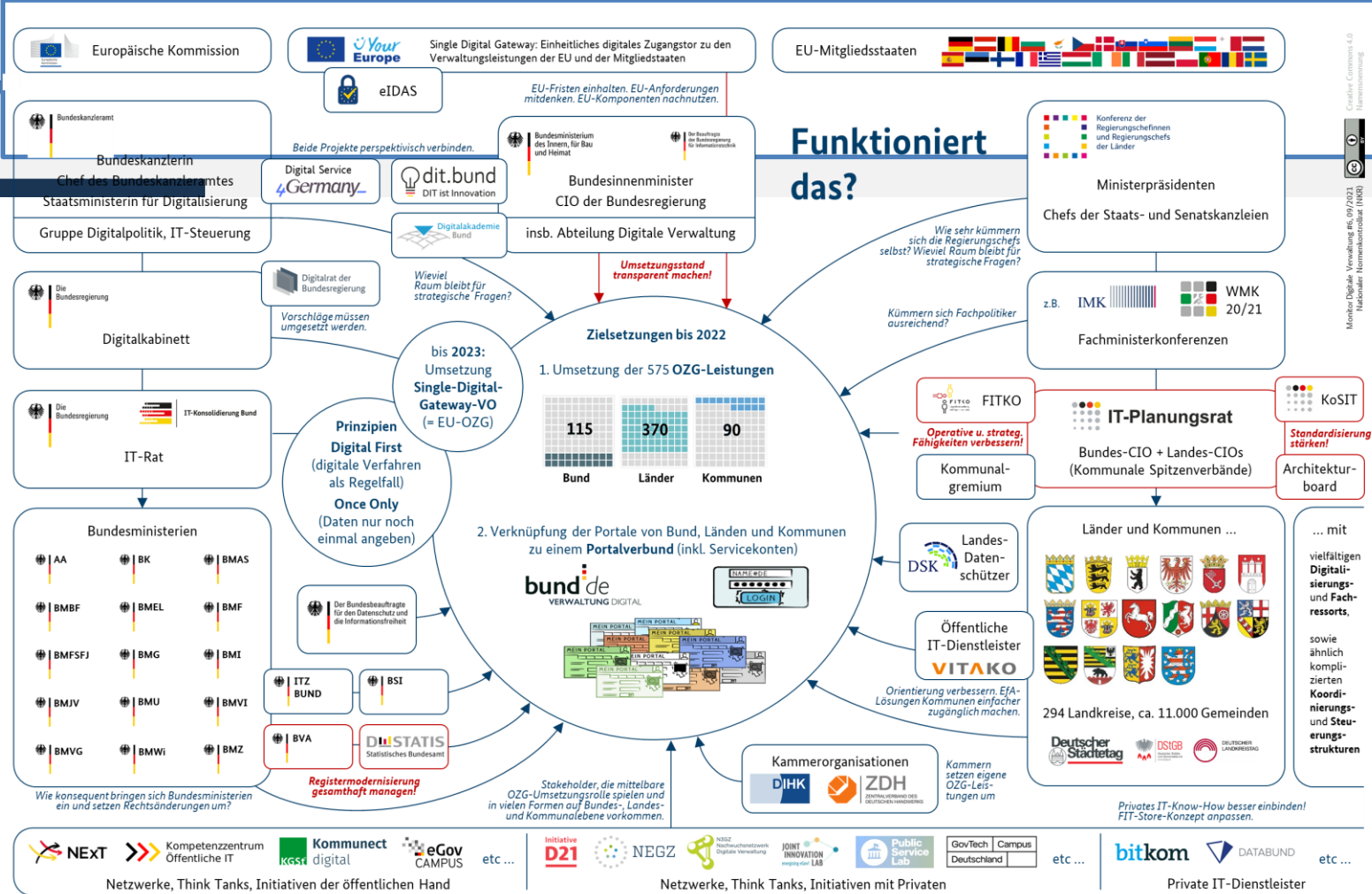


digital-agenda-data.eu/charts/desi-components (2018)

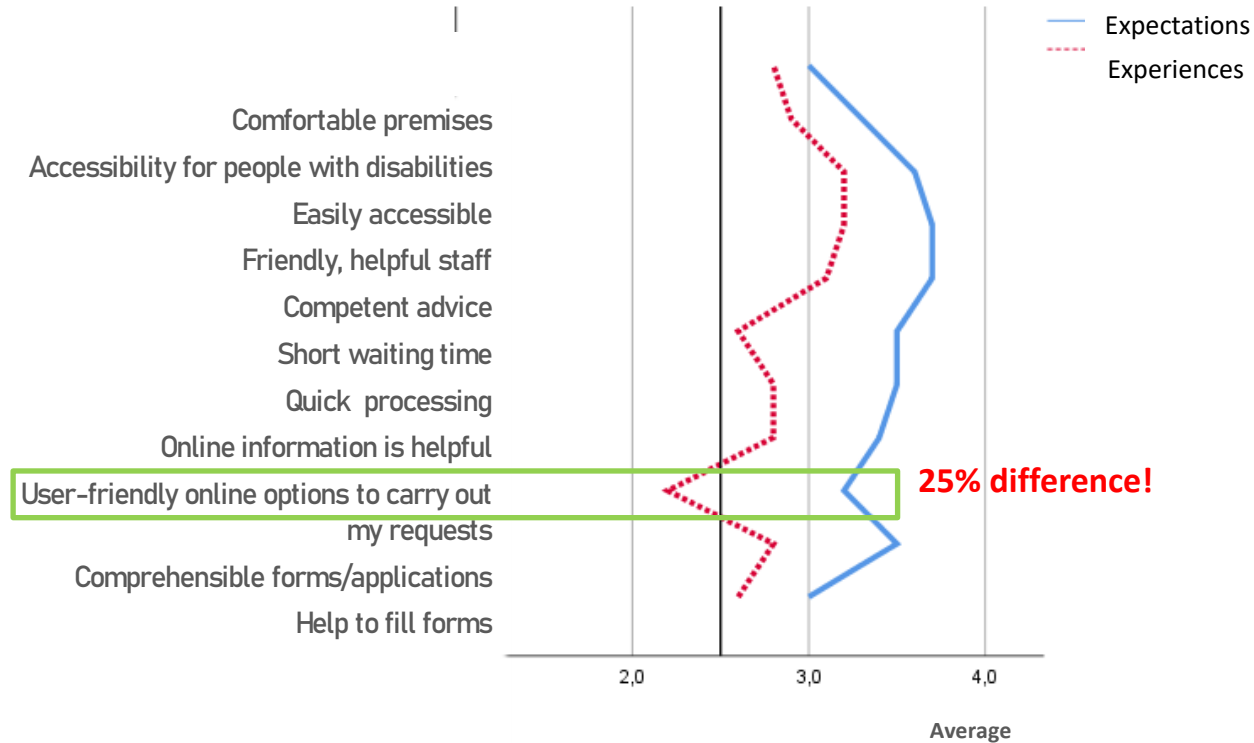
Online Access Act in Germany:

Only 16 out of 575 services „digitalized“ in 4 years

Arbeit & Ruhestand	 BMAS	 NW	28	16	8	4	1
Bauen & Wohnen	 BMI	 MV	42	19	16	7	2
Bildung	 BMBF	 ST	15	8	5	2	1
Ein- und Auswanderung	 AA	 BB	14	1	11	2	0
Engagement & Hobbies	 BMI	 KSV  NW	28	20	7	1	0
Familie & Kind	 BMFSFJ	 HB	24	12	7	5	0
Forschung & Förderung	 BMI	 BY	20	11	7	2	2
Gesundheit	 BMG	 NI	24	1	18	5	0
Mobilität & Reisen	 BMVI	 HE  BW	47	3	36	8	2
Querschnittsleistungen	 BMI	 BE	18	13	5	0	0
Recht & Ordnung	 BMJV	 SN	7	1	4	2	1
Steuern & Zoll	 BMF	 HE	23	2	19	2	2
Umwelt	 BMU	 SH  RP	46	17	27	2	0
Unternehmensführung und -entwicklung	 BMWi	 HH	45	15	18	12	5
575 (von ca. 575)			381 (von 381)	139 (von 381)	188 (von 381)	54 (von 381)	16



Comparison expectations/experiences: The Citizens' Perspective



1 = not at all relevant; 2 = not very relevant; 3 = quite relevant; 4 = fully relevant

Demand n = 1083 to 1138; Experience n = 1029 to 1129

Citizen Survey Karlsruhe

- In current comparative research concerning the digital transformation of state and administration, local levels of government have been insufficiently investigated.
- There is no systematic, cross-countries comparative knowledge available regarding the state of implementation and the effects of digital transformation at local government level in Europe.
- A new collaborative research project is intended to remedy those deficits.

- Binational research project funded by Swiss National Science Foundation (SNSF) and German Research Foundation (DFG)
2022-2025, 1.1 Mio. €
- Core research team from Switzerland, Germany and Austria
- Focus on digital transformation in European local governments and especially its dynamics and effects
- Cross-countries and over-time comparative perspective



Digitalization as a polity-policy and administrative reform

→ Three dimensions (Mergel et al., 2019)

1. *Digitization*

1:1 translation of analog processes without further changes in the administrative, organizational, and process structures

2. *Digitalization*

Transformation of analog processes into digital processes in connection with a change in the administrative processes and an introduction of new organizational models

3. *Digital transformation*

Comprehensive institutional change in public administrations, including cultural change and long-term changes in the performance of public service delivery

Research Question 1: Dynamics of Change

1. What are the **dynamics (scale and pace) of digital transformation** in European local governments?

To what extent has there been a **radical/rapid revolutionary change** or **gradual/slow evolutionary change**?

How and why do these dynamics differ from a cross-country and inter-municipal perspective?

Research Question 1: Dynamics of Change

Continuum from stability over incremental change towards radical change

Evolutionary change: *Modest* scale and a *slow* pace

- National/local “starting conditions” will shape corridors and affect the digitalization
- Historical institutionalism: Path dependencies are assumed to predetermine further institutional development → Gradual change (e.g., displacement, layering, drift, and conversion)
- Sociological institutionalism: cultural imprints, cognitive scripts, and moral templates provide “frames of meaning” guiding human action

Revolutionary change: *Large* scale and *fast* pace

- Pushed by exogenous pressures (e.g., crises, change of governments)
- Result from the comprehensive disruption of existing institutions
- Punctuated equilibrium model: Periods of stability (equilibrium) and abrupt change (punctuations)

Research Question 2: Effects of Change

2. What are the **(intended and unintended) effects** of digitalization on local self-government in different countries/regions regarding:
 - **Outputs** (degree of implementation, institutional change):
service delivery, organization, processes, and human resources,
 - **Outcomes** (consequences of institutional change):
performance, accountability, work relief/burdens,
 - **Impacts** (longer-term effects):
citizens' acceptance, governance, new cleavages.

Assessing Dynamics and Effects

Independent variables

Macro-level factors

- Administrative system/
administrative culture LDA
- Local government system LDA
- Economic situation LDA

Meso-level factors

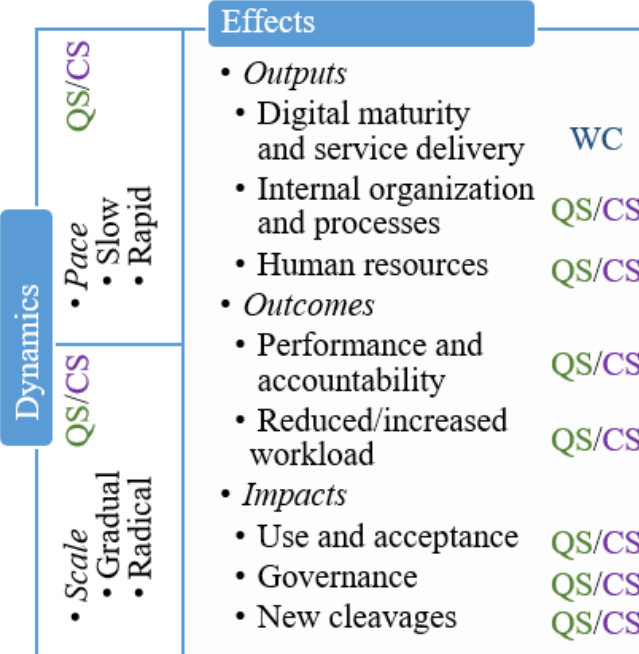
- Strategies QS/CS
- Financial and personal
resources QS/CS
- Governance QS/CS

Micro-level factors

- Actors, promoters, moderators QS/CS
- Position of the mayor QS/CS



Dependent variables



Data collection methods:

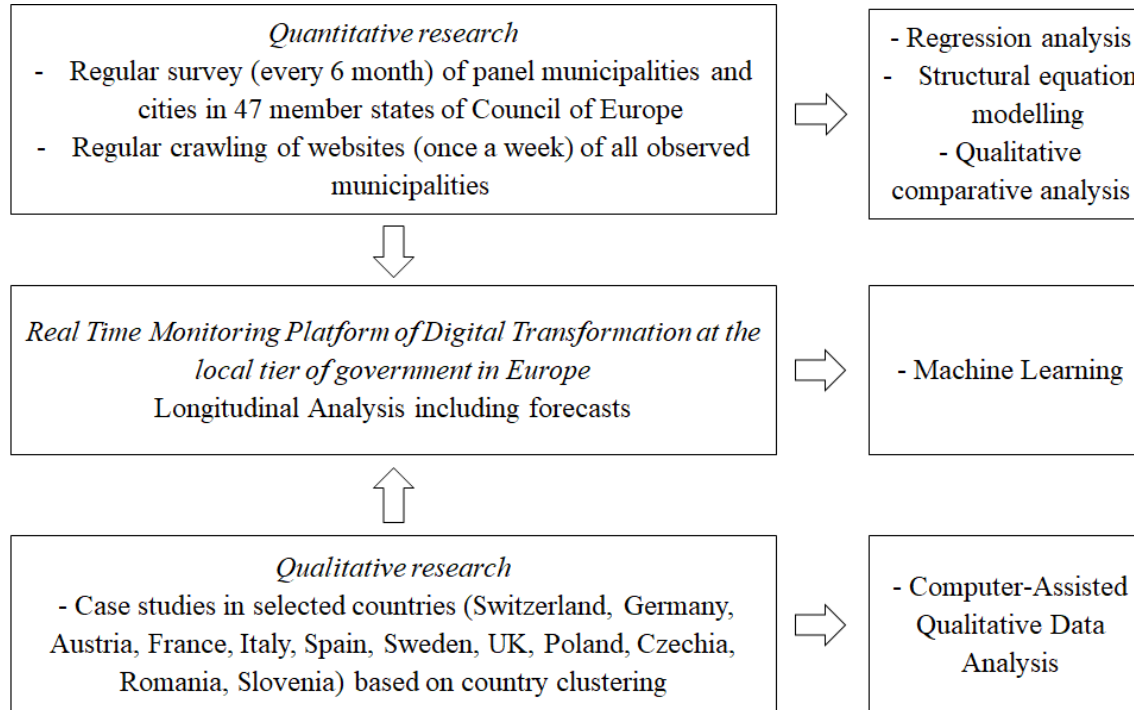
LDA: literature and document analysis

QS: quantitative survey

WC: web crawling qualitative

CS: research/ case studies

Research Design and Methods



- In-depth case studies of selected local governments from different administrative cultures
 - Continental European federal: Switzerland, Germany, Austria
 - Continental European Napoleonic: France, Italy, Spain
 - Nordic: Sweden
 - Anglo-Saxon: United Kingdom
 - Central Eastern European: Poland, Czechia
 - South Eastern European: Romania, Slovenia
- Focus on country-specific and other supporting/hindering factors of digitalization in various national and local settings, which, in turn, are expected to account for the **dynamics** of change, **effects** and transformational impact
- Openness towards unexpected findings

Case Studies – Data Collection and Analysis

- Semi-structured interviews with experts and focus groups, e.g., local chief executives, CIOs, heads of departments, staff council representatives, street-level bureaucrats, and citizens
- Qualitative data analysis
- Identify good practices, derive lessons, and share transformational knowledge relevant to practitioners and decision-makers in municipalities undergoing digitalization

Monitoring Platform of the Digital Transformation and Web Crawling Techniques

- On the monitoring platform, the state and dynamics of digitalization in Europe's local governments will be published, to perform comparisons cross-countries and over-time
- Algorithms will be designed and implemented of for machine learning (= subset of artificial intelligence; not yet widespread in the social and administrative sciences) → methodological value-added of the project
- Web crawling techniques will be applied and a glossary in different languages will be generated containing terms to be crawled
- The platform will also be used to send out short surveys to the responsible individuals in the municipalities and analyze the answers automatically to track updates since the survey

The consortium has a strong cumulative experience and expertise in the fields of (1) local governance, (2) comparative PA, (3) digitalization, and (4) machine learning/data science

Name	Institution	Position	Role in the project
Reto Steiner	ZHAW	Professor	Main applicant
Sabine Kuhlmann	Potsdam University	Professor	Main applicant
Isabella Proeller	Potsdam University	Professor	Main applicant
Renate Meyer	WU Vienna	Professor	Project partner
Tobias Polzer	WU Vienna	Assistant professor	Project partner
Andreas Weiler	ZHAW	Lecturer	Research associate
Claire Kaiser	ZHAW	Research associate	Research associate
Justine Marienfeldt	Potsdam University	Doctoral student	Doctoral student
Jakob Kuehler	Potsdam University	Doctoral student	Doctoral student
Jakob Marquardt	ZHAW	Doctoral student	Doctoral student
Jonathan Gerber	ZHAW	Doctoral student	Doctoral student
Jana Machlankin	ZHAW	Doctoral student	Doctoral student

