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Ready, set, crisis – transitioning to crisis mode in local public administration

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ABSTRACT
Local public administrations are typically the first responders during disruptive crisis events. Building on literature on fast-response organizations, this study theorizes on their ability to transition effectively from routine bureaucracy to crisis mode. Empirically, we study early responses to COVID-19 in Germany with agency-level survey data. The findings suggest that an effective switch between practices cannot be explained by crisis severity alone. Instead, organizational, technical, and individual preparedness of local administrations matter. These results provide insights into the conditions that enable administrations to respond effectively to crisis events, offering a comprehensive understanding of crisis management capabilities at the local level.

Introduction

As a core responsibility of governments, crisis management requires the public sector to cope with exceptional situations. Typically, first responders are local level authorities who provide essential support and bear the practical challenges of handling a crisis. These local governments are also well-suited to address the specific needs of their communities (Christensen, Lægreid, and Rykkja 2016; Col 2007; Deslatte, Hatch, and Stokan 2020; Eckhard, Graf, and Lenz 2021; Lenz and Eckhard 2022). The recent COVID-19 pandemic, however, revealed that many local governments and administrations struggled to deliver a swift response (Desmidt and Meyfroodt 2023; O'Flynn 2021). While the complexity and range of dilemmas associated with any specific crisis may explain general difficulties, they do not explain sufficiently why we observe variation in the adaptive capabilities of different administrative entities at the local level (Barbera et al. 2021; Rozell and Wilcox 2020).

Existing studies on crisis management focus typically on the factors influencing the effectiveness of a crisis response (Behnke and Eckhard 2022; Desmidt and Meyfroodt 2023; Dzigbede, Gehl, and Willoughby 2020; Elston and Bel 2022; Phillips, Roehrich,

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and Kapletia 2023). By contrast, little attention has been devoted to the transition between routine administrative behaviour and crisis management. While we know that administrations must change their organizational practices when a crisis hits (Behnke and Eckhard 2022; Christensen, Lægreid, and Rykkja 2016; Eckhard et al. 2021; Schomaker and Bauer 2020), relatively little conceptual and empirical knowledge exists on *how* administrations realize this switch between practices, and *whether* they can prepare for it. Considering the critical role of the initial transition phase in the overall success of crisis management (Y. Fan et al. 2015), it is crucial to address this gap in the literature.

Firstly, to understand how to conceptualize transitions from routine behaviour to crisis response, this study turns to organization theory literature, where practice switching has been studied in the context of fast-response organizations (Faraj and Xiao 2006; Schakel and Wolbers 2021). The police, fire departments, or medical trauma centres are fast-response organizations that routinely operate in dynamic environments and constantly work on their resilience to perform reliably, despite uncertainty. We discuss how their specific capacities of organizational adaptation (e. g. Barton et al. 2015) can be deployed in the context of local public administrations.

Secondly, we theorize which factors condition whether local administrations are capable to adapt swiftly to a crisis impulse. Based on public administration and fast-response literature, we argue that factors linked to *organizational*, *technical*, or *individual preparedness* of local administrations can smoothen the transition between working modes. In particular, we hypothesize that greater *agency training* (Dzigbede, Gehl, and Willoughby 2020), an enhancement of *frontline leeway* (Stark 2014; Phillips, Roehrich, and Kapletia 2023), *technical preparedness* through digitization (Denford et al. 2022; Reuter 2015; Rimstad et al. 2014), and individual *staff experience* from previous crises (Schomaker and Bauer 2020; Wang and Z. Fan 2022) are associated with more effective practice switching.

Empirically, the study compares administrative action during the early COVID-19 pandemic at the district level in Germany (*Landkreise* and *kreisfreie Städte/NUTS-3*). Methodologically, we employ regression analysis on novel agency-level survey data of 166 out of 401 local agencies, in combination with socioeconomic and context data. Our findings suggest that *agency training, frontline leeway*, and *digitization* produce more agile organizations that can easily switch practices. *Individual staff experience* is also important, but only when crisis severity is high.

This study makes several significant contributions to the existing literature. Firstly, through a systematic and quantitative analysis of responses to a single crisis across various local contexts, it offers a unique and valuable insight into the dynamics of crisis adaptation. This comparative and local-level perspective fills a gap in the crisis management literature, which has predominantly focused on national organizations and utilized small-N approaches. By expanding the scope to include local administrations, this research enhances our understanding of crisis management at different levels of governance. Secondly, from a theoretical standpoint, this paper advances our comprehension of the relationship between organizational context and effective adaptation to crises. It introduces the concept of 'practice switching' (Schakel, van Fenema, and Faraj 2016) to the literature on local public administrations. Through examining the extent to which effective practice switching relies on *organizational, technical*, and *individual preparedness*, this study illuminates the crucial factors that facilitate successful crisis adaptation. This theoretical contribution aligns with broader research on

inter-crisis learning and experience (Dzigbede, Gehl, and Willoughby 2020; Schomaker and Bauer 2020), collaboration (Doberstein 2016; Nolte and Lindenmeier 2023; Phillips, Roehrich, and Kapletia 2023), and the influence of context and government characteristics (Denford et al. 2022; Jugl 2022).

The article is structured as follows: after showing in the next section that the exact conditions of practice switching remain a gap in the literature on crisis management, we turn to organizational literature and the concept of practice switching as described in works on organizations typically operating under emergency conditions. We then offer theoretical expectations of factors conditioning the ability of local agencies to adapt their mode of operating in the face of crisis. After introducing the empirical case, research design, and data gathering, we present and discuss our findings and draw a conclusion.

The relevance of practice switching in crisis management

The academic study of crisis management made significant advancements in recent years in conceptualizing and identifying the factors associated with effective crisis management. Thereby, the focus of most studies can be organized along a cyclical understanding of crisis management that distinguishes between preparedness, mitigation, response, and recovery as the main crisis phases (Alexander 2002; Tokakis, Polychroniou, and Boustras 2019; Wolbers, Kuipers, and Boin 2021). In contrast, this study aims at understanding transitions between routine administrative behaviour and the actual crisis response.

For each phase of the crisis cycle, studies identify factors that are relevant for effective crisis management. For instance, insights on crisis preparedness highlight the importance of diverse activities such as comprehensive planning, the development of effective protocols, risk analysis and early warning activities (Baker and Grant Ludwig 2018; Staupe-Delgado and Kruke 2018). Furthermore, practical experience through trainings, workshops, and education increases organizational capacities to respond to crises (e.g. Alexander 2005; Baker 2014).

Moreover, literature on crisis mitigation and responses have shown that crisis management effectiveness is enhanced, amongst other things, through fast and decisive leadership (van Wart 2013), an ordered hierarchical emergency response that simultaneously allows for functionally decentralized problem solving (Boin, t'Hart and Kuipers 2018; Moynihan 2009), the ability to generate surge capacity (Ansell, Boin, and Keller 2010), and flexibility (Eckhard, et al. 2021; Webb and Chevreau 2006). The literature also underscores the role of effective coordination networks enabling horizontal collaboration among administrative entities to maintain regular services in times of adversity, as well as cooperation between local administrations and the civil society (Elston and Bel 2022; Lenz 2022; Nohrstedt 2018; Nowell et al. 2018; Phillips, Roehrich, and Kapletia 2023).

While the bulk of the literature consists of response-oriented analyses, only few studies shift focus to explore in detail the transition between crisis phases and the related adaptations in public administrations (Ansell, Sørensen, and Torfing 2021; Jung, Song, and Park 2018; Stark 2014). Overall, extant scholarly work emphasizes the central role of governance strategies (Nolte and Lindenmeier 2023), creativity (Jung, Song, and Park 2018), flexibility (Lenz and Eckhard 2022), as well as coordination and innovation (Ansell, Boin, and Keller 2010; O'Flynn 2021; Phillips, Roehrich, and

Kapletia 2023) to address effectively rapidly evolving crisis situations. However, most of the literature still has a strong national perspective (e.g. Zhang, Welch, and Miao 2018) and is focused on adaptiveness of specific actors, such as health care organizations (e.g. W. Phillips, Roehrich, and Kapletia 2023) and transit agencies (e.g. Miao et al. 2018). Hence, we still lack a systematic understanding of how public organizations, particularly on a subnational level, switch between routine behaviour and crisis response, and what factors facilitate or obstruct this transition.

Conceptualizing practice switching in public administrations

Past crises have shown that not all administrations have difficulties adapting while coping with crises and there is indeed potential to learn from prime examples (Col 2007; Stallings and Schepart 1987). Yet, there is a tension between routine action and crisis response that must be managed by local administrations. To better understand how public administrations can perform under adverse conditions, by effectively switching between practices, we build on knowledge about a specific subset of public sector organizations: so-called fast-response organizations, such as the police, fire departments or medical trauma centres, which specialize in the management of unexpected situations and routinely operate under emergency conditions (e.g. Schakel and Wolbers 2021; Schakel, van Fenema, and Faraj 2016). As such, they are well suited for conceptualizing the processes of organizational practice switching from stable to unstable environments and between different modes of crisis response (Faraj and Xiao 2006; Schakel and Wolbers 2021; Schakel, van Fenema, and Faraj 2016).

With organizational behaviour or practices, we refer to relative stable sets of material practices and beliefs that delimit and characterize certain types of organizations (Besharov and Smith 2014; Meyer and Rowan 1977). Regarding these practices, fast-response organizations specialize in switching between a designed mode of organizational behaviour with predefined lines of command and a decentralized mode of organizing with spontaneous frontline decision-making (e.g. Barton et al. 2015; Moynihan 2009). Practice switching can therefore be understood as adapting modes of organizing through the adjustment of practices concerning command, allocation and information-sharing to suit the evolving crisis (Schakel and Wolbers 2021; Suchman 1995).

Following the concept by Schakel and Wolbers (2021, 414), *command* refers to the process of executing direction within the operational organization that describes coordination issues such as combining hierarchical emergency responses with functionally decentralized problem solving (Ansell, Boin, and Keller 2010; Boin, t'Hart and Kuipers 2018; Oliveira and Lumineau 2017). *Allocation* is the process of registering and positioning organizational resources, providing additional surge capacities (Boin, Kelle, and Whybark 2010), such as staff, whereas *information-sharing* is the process aimed at informing staff and other crisis responders about the evolving problem and response strategy (Doberstein 2016; Nowell et al. 2018). While crisis management might involve continuous adaptations in these processes, we are interested in the initial, fundamental switch when a routine bureaucracy responds to a novel crisis shock. Drawing on the three tiers of this conceptualization, empirical observation of practice switching becomes possible, as explained below.

Facilitators of practice switching in local public administration

Unlike fast-response organizations, local administrations do not specialize in managing adversity. Instead, they are involved in crisis management only as part of their broader mandate. As so-called 'extending' organizations in crisis response (Dynes 1970), they need to abandon their routine mode of operating to meet the demands of a crisis. Prior research indicates that some administrations are more capable than others to switch practices and thus transition between different crisis stages (Col 2007; Stallings and Schepart 1987; Zhang, Welch, and Miao 2018).

Drawing on evidence from public administration and organization research, we theorize that three dimensions of administrative preparedness enable a smooth transition from routine action to crisis response. As summarized in Figure 1, we expect that factors linked to organizational, technical, and individual preparedness play a role, but also the broader crisis context (Baker 2014; Staupe-Delgado and Kruke 2018).

Organizational preparedness: agency training and frontline leeway

The organizational dimension is most prominent in our theory, as it links most strongly to our understanding of organizational practice switching with command, allocation, and information-sharing as dominant features (McConnell and Drennan 2006). Based on our reading of relevant factors mentioned in the extant literature, we hypothesize that two organizational features are likely to facilitate the transition to crisis mode along those categories:

As a first factor, fast-response organizations generally master swift and coordinated responses to unexpected events by relying on preparation (Bigley and Roberts 2001; Okhuysen and Bechky 2009). Of course, crises are unique events that demand individualized solutions. However, emergency responses generally involve quickly reorienting actors' attention towards collective frames of reference and activating previously established expectancy frameworks (Geiger, Danner-Schröder, and Kremser 2021). Training therefore enables personnel to obtain appropriate cognitive, social, and personal resources to base their actions on (Cohen-Hatton, Butler, and Honey2015).

Concerning the preparation for crisis management, four typical preparatory features are mentioned in the literature. The first are plans and planning documents,
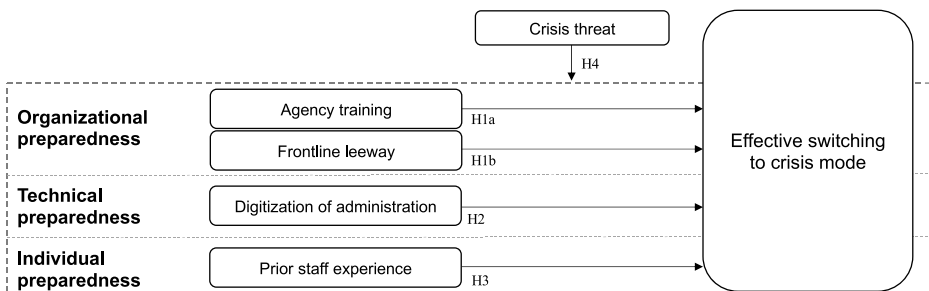

Figure 1. Facilitators of practice switching in local public administrations.

which are ideally developed in an inter-agency process involving multiple individuals and addressing different types of threats (McConnell and Drennan 2006). The second, and arguably most relevant feature are lectures, scenarios, or simulations to ensure effective individual performances when changing towards crisis action (Bigley and Roberts 2001; Hannan and Freeman 1984). Third, such preparations should also involve other agencies relevant for a crisis response. Scalable structures and shared training, including joint exercises with other relevant agencies, are important, as decision-making practices in emergency settings are often recognition-primed (Klein 1993; McConnell and Drennan 2006), entailing the automatic use of previously learnt heuristics, such as those contained in planning documents (Schakel and Wolbers 2021). Last, organizations should have access and experience with appropriate equipment necessary to ensure specific actions and communication (Schakel, van Fenema, and Faraj 2016). For instance, research on the COVID-19 pandemic highlights limited government preparedness concerning healthcare supplies (W. Phillips, Roehrich, and Kapletia 2023).

Overall, training shapes the procedural and declarative memory of an organization (Moorman and Miner 1998), which may in turn affect coherence and speed of improvisation. Dzigbede et al. (2020) advocate that local governments should consistently practice emergency protocols and maintain up-to-date disaster plans that outline roles and responsibilities of staff. They argue 'these preparations can promote nimbleness for local managers to take actions' (Dzigbede, Gehl, and Willoughby 2020, 640). We formulate the following hypothesis:

H1a: Greater agency training increases the effectiveness of local public administrations when switching to crisis mode.

A second organizational factor frequently mentioned in the literature is that staff should be equipped with sufficient *frontline leeway*. Frontline leeway refers to the degree of discretion or flexibility that administrators have in making decisions and implementing policies within an organization (Davidovitz, Cohen, and Gofen 2021; Lenz and Eckhard 2022). Literature on emergency responses highlights the need to balance formal structure and standard operating procedures with the ability of staff to improvise and adapt (Harrald 2006). This is relevant for several reasons. During crises, events can develop dramatically so that standard procedures are not sufficient anymore (Schakel and Wolbers 2021). In such situations, local crisis management agents must be given the discretion to innovate spontaneously and deviate from routine procedures (Stark 2014; W.; Phillips, Roehrich, and Kapletia 2023). Another reason is that coordination practices are also highly emergent and cannot be entirely prespecified (Faraj and Xiao 2006). Frontline leeway entails detaching informal decision-making authority from the official hierarchy and giving administrators room to manoeuvre, sometimes bending rules. More default frontline leeway should therefore influence positively the ability of an administration to switch into a crisis management *modus operandi*. The following hypothesis summarizes this expectation:

H1b: Greater frontline leeway increases the effectiveness of local public administrations when switching to crisis mode.

Technical preparedness: digitization of the administration

Since technical preparation and digitization are increasingly mentioned as essential components of modern crisis management, it is appropriate to highlight them as a separate dimension in this theoretical framework. They refer to the ability of a government to access and utilize technology to address various issues and enable organizations to respond more quickly and effectively to crisis situations (Comfort 1993; Denford et al. 2022). This includes having access to the necessary hardware and software, as well as the trained personnel to operate and maintain them.

While technological solutions do not guarantee enhanced information processing and can quickly lead to an overwhelming amount of unprocessed information (Aben et al. 2021), they also hold great potential by providing informational infrastructure and thus easier access to information (Bharosa, Lee, and Janssen 2010; Rimstad et al. 2014). Particularly, digitization can facilitate data sharing both *within* the organization and *between* partner organizations, thereby addressing information asymmetry (W. Phillips, Roehrich, and Kapletia 2023). This can improve collaboration among all crisis management stakeholders, such as emergency responders, government officials, and community members. Working in digital spaces facilitates coordination, as collective situational awareness is essential when limited resources need to be allocated within a short period of time (Weick and Sutcliffe 2015). Digitization further offers the potential to analyse information collectively and to promote a more comprehensive understanding of the situation. When crisis managers successfully integrate these beneficial aspects, digitization can then enhance joint sense-making (Nolte and Lindenmeier 2023; Reuter 2015).

Accordingly, it is to be expected that digitization will influence mainly the transition between crisis modes through internal information exchange or organizing. W. Phillips, Roehrich, and Kapletia (2023) argue that sharing information with external organizations is a critical factor in implementing rapid and effective crisis responses. We build on this argument as crisis management at the local level specifically involves people from different departments and public organizations. Altogether, digitization should enhance the ability of agencies to switch effectively between modes of organizing. Therefore, the following hypothesis can be derived:

H2: Greater extent of digitization increases the effectiveness of local public administrations when switching to crisis mode.

Individual preparedness: prior staff experience

Adaptive capacity, however, should not be developed at the organizational level alone. Internal organizational actors interpret the crisis situation and hence influence practice switching on a micro-level (Barbera et al. 2021; Desmidt and Meyfroodt 2023). We expect two mechanisms to matter in this regard: experience with prior crises and collaboration with a familiar team. Regarding prior crisis experience, emergency response research suggests that previous experience among first responders and system operators leads them to develop a certain feel for incidents and their dynamics as well as an ability to recognize deviations in known processes (Boin, t'Hart and Kuipers 2018; Klein 2001). This way crisis managers benefit from prior experience when it

comes to processing information, consulting relevant entities, and creating an operational procedure (Boin, t'Hart and Kuipers 2018). For instance, Dzigbede, Gehl, and Willoughby (2020) find that leaders and staff in US local governments that have previously faced weather-related natural disasters exhibit values of agile management needed to tackle COVID-19.

Previous working experience within the same team, on the other hand, facilitates crisis mode transition as it speaks to the relational dimension of coordination (Cao and Lumineau 2015; Nohrstedt 2018). Collaboration is challenging as it depends on building trust, distributing resources, reaching shared goals, and handling competitive interactions among participants (Bianchi, Nasi, and Rivenbark 2021; Terman, Feiock, and Youm 2020). However, crisis unit work implies the co-operation of staff from different departments that do not necessarily cross one another's path during routine conditions. Proximity and personal connections facilitate bridges and offer collaborative opportunities (Feiock 2013; LeRoux, Brandenburger, and Pandey 2010; Wang and Z. Fan 2022), hence positively influencing performance in co-operative work (Caldwell, Roehrich, and George 2017). Schomaker and Bauer (2020) identified collaborative learning effects when networks previously established during the so-called migration crisis were revitalized while combating the COVID-19 pandemic. Altogether, the resulting hypothesis reads:

H3: Staff experience increases the effectiveness of local public administrations when switching to crisis mode.

The crisis threat

The above arguments make clear that organizational, technical, and individual preparedness are likely to play a significant role in facilitating how effectively administrations manage to switch practices in an evolving crisis event. However, transboundary crises usually threaten a wide geographical area and do not necessarily affect every location to the same degree. Crisis managers within the public administration will therefore be confronted with different levels of threat and problem pressure, resulting in a different sense of urgency (Blondin and Boin 2020; Boin et al. 2016). An imminent crisis implies a greater threat and should therefore amplify the utility of each of the four factors specified in *H1* to *H3*. In other words, we expect that the need for the organizational and individual features mentioned above becomes even higher when problem pressure increases. Public administrations that face a greater degree of crisis pressure and threat will be able to switch to crisis mode effectively only when they dispose of higher degrees of agency training, frontline leeway, and digitization, as well as experienced staff. In conclusion, the relationships hypothesized in *H1–3* are likely moderated by the scope of the crisis threat. Therefore, the final hypothesis *H4* reads:

H4: The scope of the crisis threat moderates the influence of agency training, frontline leeway, digitization, and staff experience on the effectiveness of local public administrations when switching to crisis mode.

Case selection: the COVID-19 pandemic in Germany

COVID-19 constitutes a classic non-routine problem for administrations, emphasizing the important role of local government in crisis management. Measures to fight its spread, such as social contact limitations, had a strong focus on the community and household level. This required local administrations to reorganize internal routines and bind capacities to meet emerging responsibilities. Their new tasks included tracking infections, tracing contacts, organizing health care, and enforcing containment measures (Kuhlmann and Franzke 2022).

Germany's decentralized federal structure, with local crisis management retaining operational control and federal civil protection offices functioning as providers and platforms for central coordination (Behnke and Eckhard 2022; Kuipers et al. 2015), provides a fitting context to analyse the internal challenge of switching the mode of organizing in local public administrations. In fact, many containment measures during COVID-19 were initiated at the local and regional levels and later coordinated horizontally between states as well as vertically with the federal government (Kuhlmann 2020). These included, for example, the closure of schools and nurseries, first implemented by the district of Heinsberg in North Rhine-Westphalia.

The unit of observation in this study are *Landkreise* and *kreisfreie Städte* (NUTS-3), referred to as districts and district-free cities in this paper. This is an intermediate administrative level between the 16 federal states and the municipalities, which is responsible for tasks such as disaster protection, health care services, or public transport – the execution of which is taken over by local district-level agencies.[1] Local district offices (*Landratsämter*) combine the tasks of local political and administrative executives in the form of local self-government: district commissioners are politically elected and provide the overall direction and decision-making authority, while the local administrative executives in the district offices implement policies and ensure efficient coordination (Jann and Veit 2021). Furthermore, the majority of local health authorities (*Gesundheitsämter*) are also located within the districts and district-free cities (Kuhlmann and Franzke 2022). As the crisis affected all German districts, COVID-19 presents a unique possibility to conduct a large-N study comparing administrative action.

This paper examines the transition to crisis mode in public administration at the German district level during the early stage of the COVID-19 pandemic (late February to early April 2020) in retrospect. Germany's first case of COVID-19 was recorded on January 28th 2020, and the first hotspot was identified in late February. With a federal 'high' risk level issued in March, the issue of COVID-19 became a priority at all levels of the German federated system. In the early phase of the pandemic, the traditional pattern of territory-based crisis mitigation at the sub-national and local levels prevailed, emphasizing local discretion and territorial steering. The collaboration between local political executives, local administrative executives, and local health expertise in German district offices played a pivotal role within this framework. The crisis teams within the district offices served as platforms where the competencies from these three areas converged, characterized by interconnections and networks between political and administrative executives, as well as physicians and local health experts (Kuhlmann and Franzke 2022). Scrutinizing the initial hotspot outbreaks and the

spread to many other districts in March allows us to (1) investigate the switch to crisis mode at the onset of the pandemic and (2) compare districts and Länder that initially faced the challenges alone, before the federal government became increasingly involved (Kuhlmann 2020; Robert Koch-Institut 2022).

Research design

We study the early responses to COVID-19 by relying on novel agency-level survey data. Prior to designing the questionnaire, six semi-structured expert interviews with crisis managers from different districts were conducted to understand key challenges faced by local public administrations due to the pandemic. For the interviews, we spoke to six public officials of urban and rural districts from Eastern and Western Germany in summer 2020. In particular, we made sure that the districts of our interview partners showed a strong variance in affectedness. This was essential to be able to look at the challenges from different perspectives.[2] We used the interviews to explore potential challenges and main themes that would then inform our quantitative data collection.

The primary data source for this paper is a questionnaire-based online survey (Eckhard, Graf, and Lenz 2021) that was conducted via *UniPark*. The sampling strategy follows a complete enumeration, where all German District and District-free City Offices were contacted.[3] Ahead of the field phase, we made the survey available to the German district administration association (*Deutscher Landkreistag*) for endorsement (we did not alter questions) to generate trust concerning data processing and content, thereby increasing the response rate.[4] The survey invitation was specifically directed towards district commissioners, heads of the crisis management unit, or directors of the public health office. These public servants can be considered experts, having first-hand and in-depth knowledge concerning the crisis management of their local agency during the COVID-19 pandemic.

The survey fielded between April and May 2021 and generated a response from 46,4% of all German district offices. Due to non-response on some items used in the analysis, this paper reports survey data from 166 districts, 41.3% of all districts, and district-free cities. The distribution of the sample concerning district type as well as between Eastern and Western Germany can be considered as similar to the distribution among all German districts.[5]

Measurement of variables

The survey covered several modules regarding the crisis management of the districts during COVID-19, with the first module being directed explicitly to a retrospective evaluation of the *beginning* of the pandemic. While this time gap might produce bias, it was also the only option to collect survey data on the switch, as it would not have been realistic to collect data at the onset of a pandemic.[6]

The **dependent variable**, *effectiveness of switching to crisis mode*, is measured as the self-reported effectiveness of public administrations when transitioning to crisis management. While some studies assess the performance of public agencies through citizen perceptions (Kelly and Swindell 2003), the relationship between better government performance and more favourable public perception is complicated (Cowell et al. 2012; van de Walle and Bouckaert 2003). For this study, self-evaluation was the most appropriate solution. The measurement approach with agency-generated data has

been used in previous research on administrative performance or effectiveness (e.g. Lægreid, Roness, and Rubecksen 2006).

With the intention to develop the first empirical measure of practice switching, we follow the conceptual discussion on fast-response organizations and develop an index for the effectiveness of switching to crisis mode consisting of three survey items.[7] As outlined above, modes of organizing in crisis response are characterized by shaping *command*, *allocation*, and *information-sharing* (Schakel and Wolbers 2021). Therefore, respondents were asked to rate the performance of their local administration concerning the effective adaptation of (1) the command structure, (2) the allocation of resources, and (3) information-sharing processes when transitioning to crisis mode. The Likert scale for the individual items each ranged between 0 and 10, with higher values indicating better performance. The index of effective transition to crisis mode has a mean of 7.69 and Cronbach's alpha of 0.87.

We next turn to the **independent variables**, beginning with the variables capturing organizational preparedness (Bigley and Roberts 2001; Okhuysen and Bechky 2009; Schakel, van Fenema, and Faraj 2016). First, *agency training* is measured as an index of four survey items. Respondents were asked whether there was (1) a pandemic plan, (2) inter-agency training and workshops on crisis management, (3) regular training and workshops on crisis management in the own agency, and (4) whether staff had access to appropriate equipment *before* the crisis started. Respondents were able to indicate whether these preparatory measures were 'existent', 'partly existent' or 'non-existent'. We then created a count variable summing up the number of preparatory measures existent in each district. The answer 'non-existent' was coded as 0, 'partly existent' as 1, and 'existent' as 2. The resulting variable thus ranges from 0 to 8 with a mean of 5. Second, we measured *frontline leeway* with one survey item (cf. Lenz and Eckhard 2022), where respondents were asked to rate to what extent their agency provides frontline employees with room to manoeuvre on a Likert scale from 0 (no leeway) to 10 (a lot of leeway). The average reported leeway was 7.5.

Third, turning to the technical dimension, we measured the *digitization of local administrations* with a question that asked respondents to rate the extent of digitization compared to other public administrations on a scale from 0 (much less) to 10 (much more), with a score of 5 expressing average digitization. The mean value of the responses is 6.06. Next, and coming to the individual dimension, we measured *prior staff experience* by capturing the extent to which the leadership and members of the crisis team ('*Krisenstab*') that handled the COVID-19 crisis overlapped with those crisis managers responsible for the so-called refugee crisis of 2015/16. This measurement partly reflects approaches in the literature using self-identification of individual participation in specific groups (e.g. LeRoux and Carr 2010; Schomaker and Bauer 2020). Mostly, however, it was influenced by our expert interviews, as our respondents emphasized the importance of experience and self-confidence gained during one crisis for one's behaviour during the next crisis. Response options for both survey items (one question for members, one for leadership) included 'no overlap', 'hardly any overlap', 'mostly overlap', and 'complete overlap'. Answers are coded from 0 ('no overlap') to 3 ('complete overlap'), resulting in an index with a mean of 1.6.

We lastly turn to the contextual dimension. To measure the *crisis threat*, we used incidence rates per 100,000 inhabitants in the districts, retrieved from the website of the Robert Koch-Institut (2022).[8] For the COVID-19 pandemic, infection rates can be seen as an objective unit of measurement for problem pressure (Hale et al. 2021). Since

the crisis was quite protracted from the beginning, and districts were confronted with the crisis at different points in time, we add up the incidence rates for the first 13 weeks of 2020. During that time, all districts experienced their first cases (Robert Koch-Institut 2022). The threat variable ranges between 9.33 and 492.71 COVID-19 cases with a mean of 81.18.

Control variables: the variable *onset of cases* describes in which calendar week the first cases occurred in each district and is retrieved from the Robert Koch-Institut (2022). The variable ranges from 3 to 12 with an average of 10.20. We control for this variable as a proxy for the urgency of response (Hale et al. 2021). We further use the *municipal tax power* per capita and the *debt level* per capita of the respective districts in 2019 to account for financial strength. Data on these quantities were provided by the German Federal Statistical Office (Destatis 2021b; Regionalstatistik 2021). They are included, as it can be assumed that financial means play a role in the allocation of resources, which is a core part of practice switching (Schakel and Wolbers 2021). Finally, the German Federal Statistical Office also provided information on *district type* and *state* (Destatis 2021a). We control for district type, meaning district or district-free city, as districts must coordinate with municipalities while district-free cities unite the responsibilities of municipalities and districts. This administrative structure can be expected to affect practice switching.[9]

We use regression analysis to test our hypotheses. Given the relatively small sample size of $n = 166$ and a severe skewness of the dependent variable (−1.4), a BoxCox transformation with $\lambda = 2$ is performed to approximate normal distribution (Schmidt and Finan 2018).[10] Further, all numerical independent variables are standardized.[11] To remove unobserved heterogeneity between federal states, we rely on fixed effects models in the analysis (Allison 2009; Bergé 2018) and report cluster-robust standard errors. This is important as the early phase of pandemic management was characterized by the rather uncoordinated and decentralized implementation of *ad-hoc* containment measures that were only introduced by some federal states and to differing extents (Kuhlmann 2020). Regardless of local crisis affectedness, districts were therefore obliged to take initial crisis precautions at different points in time depending on their state government. Furthermore, they received varying degrees of support from the state level. All these factors can be assumed to influence effectiveness in transitioning to crisis mode.

Results

This section presents the results of our quantitative analysis, which are further supported by anecdotal evidence from the interviews, to demonstrate how organizational, technical, and individual preparedness are relevant to practical crisis management. Considerable variation can be observed among districts regarding self-perceived effectiveness in switching to crisis mode. Portrayed along the dimension of the variable measuring incidence rates, it becomes clear that there remain large differences between the effectiveness of districts that were similarly affected (cf. Figure 2).

To identify the conditions that are associated with increased effectiveness of local public administrations when transitioning to crisis mode, we calculate several regression models. Model 1 includes all explaining and control variables. Further, a separate model for each interaction term with crisis affectedness as a moderator is reported (Interaction Models 1–4). Figure 3 shows the coefficient plots for all models; a table
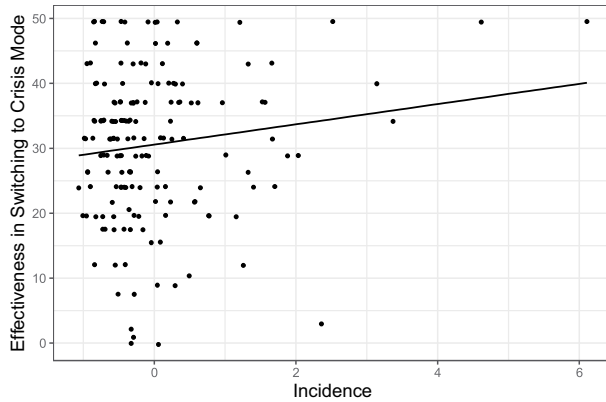
Figure 2. Between district variation concerning incidence and effectiveness.
Note: the incidence variable illustrated on the x-axis is standardized. Information of original values can be retraced with the information in Appendix C.2.
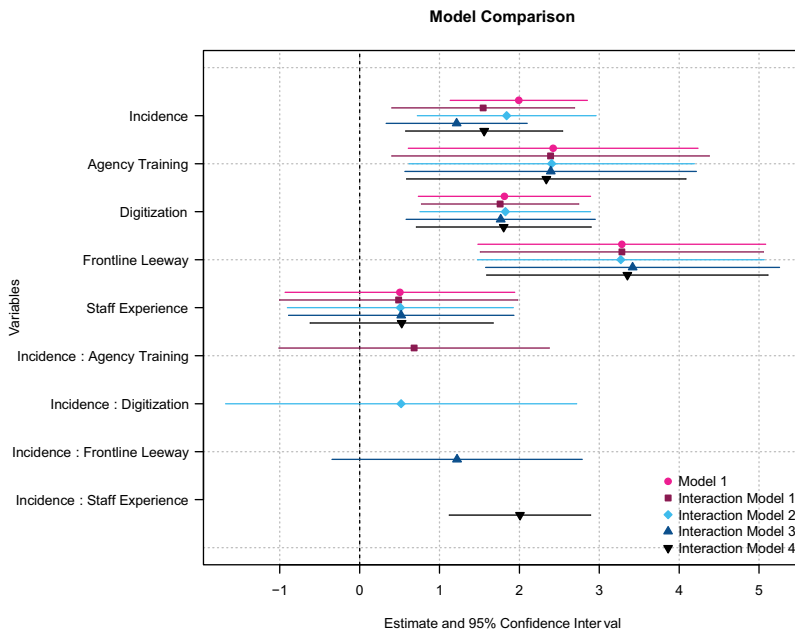

Figure 3. Coefficient plot for Model 1 and Interaction Models 1–4. Note: coefficients for the control variables onset of cases, district type, tax per capita, and debt per capita were excluded from the plot for the sake of clarity but can be found in Appendix D. For all Models N = 166.

with the full regression outputs is provided in *Appendix D*.[12] As we perform fixed effects regression, two kinds of R^2 are reported. Overall, the different models display satisfactory values for both kinds of R^2, with Model 1 explaining about 18.9% of overall variance and 22.7% of variance within German federal states. Similar values can be found for Interaction Models 1–4. We include several control variables in our models (cf. *Appendix D*), such as tax *per capita*, *debt per capita* and the *onset of the pandemic* in

each respective district. As robustness checks, we incorporate further demographic data, remove outliers, and control for the position respondents occupy within their organization (cf. *Appendix E*).

Organizational preparedness (H1a, H1b)

The results (see Figure 3) show that the coefficients for agency training (*H1a*) and frontline leeway (*H1b*) are significant on the 5% level and both positively associated with self-perceived effectiveness in switching to crisis mode. These findings, which support hypotheses *H1a & b*, are further substantiated by our interviews with local public officials. With regards to preparation, one interviewee stated, 'we do a [crisis unit] exercise every year … to varying degrees, but we really try to keep that alive. That has helped us a lot now in the crisis' (Interview IV). Another crisis manager underlined that their administration has been 'rehearsing crisis unit work at least once a year, even with external support. And that has helped us enormously because we have prepared our premises accordingly in terms of technology' (Interview VI).

Furthermore, our interviews indicate that districts in Germany seemed to differ regarding the adjustment of decision leeway. In the interviews, it became quite clear that administrations differed in their starting level with regard to the strength of the hierarchies. Not all administrations had to create additional leeway, as some "generally have relatively flat hierarchies in [their] administrations […]. There was nothing special that required adjustment' (Interview I). However, in cases where hierarchies were more pronounced, it was necessary to expand the leeway for decision-making. For instance, one official clearly stated that when responding to crisis it is important to 'recognize the need for practical action', explaining that one of the ways to do that was by not having 'any major discussions in terms of data protection law' (Interview VI).

Technical preparedness (H2)

The regression results also show a positive and significant correlation between digitization and the effectiveness of the switch in support of *H2* (see Figure 3). The interviews provide detailed insights into this relationship and point towards major struggles regarding the work with digital solutions. Firstly, due to software limitations: 'As the number of cases increased, we realized that we had reached our software limits […] Everything [became] very obscure at some point' (Interview I). And secondly because of the lacking infrastructure for inter-organizational collaboration, as information was '[…] partly sent back and forth via fax' when collaborating with laboratories and other agencies (Interview II). These statements are in line with research arguing that public sector digitization and bureaucrats' use of technology in Germany was poorly developed before the pandemic (Mergel 2019). Yet, and as the results of the analysis showed, digitization is a major facilitator of effective crisis switching, with those administrations that reported higher levels of digitization also better managing the transition to crisis mode.

Individual preparedness (H3)

Regarding hypothesis *H3,* the findings of the analysis do not support the expected positive effect on practice switching effectiveness (see Figure 3). No significant relationship between staff experience and the effectiveness of local public administrations when switching to crisis mode is observed, leading us to reject the experience hypothesis.

This result is particularly striking, as the interviews illustrated how prior crisis experience of staff matters during crisis management. Having been part of a crisis team during a prior crisis situation seems to enhance the self-confidence of staff members when making decisions and communicating with higher-level authorities. One interviewee said:

> It's about an attitude and the experience of simply deciding without thinking five times when something has to be done right away. I think that if you hadn't been through that before, you might have been a bit more apprehensive. In other words, this attitude of standing up to the higher authorities and saying: "We're not going to do it the way you want'". (Interview VI)

The crisis threat hypothesis (H4)

While we do not find a significant main effect for individual experience, we do find a significant interaction of crisis exposure on the effect of experience (Figure 4): individual staff experience with prior crises appears to only condition effective practice switching when the crisis exposure is higher. In other words, when districts have comparatively low incidence values, staff experience does not show a significant effect on switching to crisis mode.[13] This finding underlines the importance of individual staff experience for more pronounced crisis situations and thus partly confirms *H4*: the size of the crisis threat moderates the impact of staff experience on the effectiveness of practice switching. However, *H4* can be confirmed only to some extent, as we expected significant
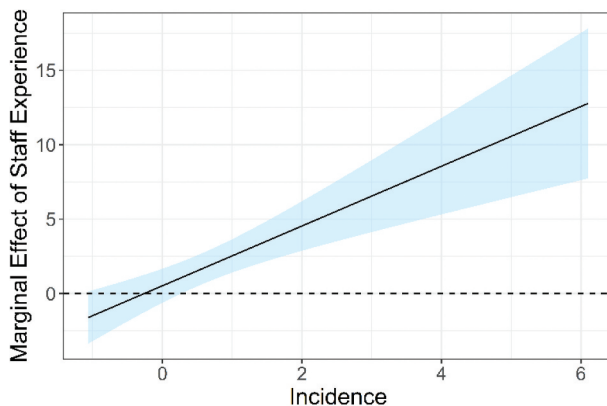

Figure 4. Visualization of the marginal effect of staff experience on switch effectiveness by incidence.
Note: the incidence variable illustrated on the x-axis is standardized. Information of original values can be retraced with the information in Appendix C.2.

moderation of crisis exposure on the effects of all dimensions of preparedness. While all interactions are tested, we only find confirmatory evidence for the interaction between staff experience and local COVID-19 incidence.[14]

Discussion

The analysis reveals variation in the self-perceived effectiveness of local administrations when transitioning from routine bureaucracy to crisis mode across German districts at the onset of the COVID-19 pandemic in Germany. These differences can partially be explained by the scope of the crisis (incidence rates), as higher crisis pressure prompts a more pronounced organizational response.

However, organizational and technical factors also play a significant role. Greater agency training, increased frontline leeway, and higher digitization are positively associated with self-evaluated effectiveness in switching practices, confirming *H1a*, *H1b*, and *H2*. The findings highlight the importance of agency preparedness, such as training and organizational leeway in facilitating practice switching. Furthermore, digitization as collaboration tool that facilitates data sharing and overcomes information asymmetry also positively affects practice switching.

The findings do not support hypothesis *H3*, which predicted a straightforward relationship between staff experience in previous crises and effectiveness in transitioning to crisis mode. However, we identified a significant interaction effect between staff experience and the COVID-19 incidence rate, indicating that experience within the crisis team is relevant only when the threat posed puts significant pressure on the acting organization. Thus, the impact of micro-level individual experience with prior crises on the organization's ability to switch between management modes depends on the crisis severity and only matters if the crisis threat is high. This finding, combined with our qualitative insights (Interviews V & IV), supports the expectation that individual experience transcends between different types of crises (Desmidt and Meyfroodt 2023; Schomaker and Bauer 2020).

The other three independent variables capturing agency training, leeway, and digitization do not show a significant interaction effect (*H4*). This implies that these organizational factors contribute to agencies' success in switching practices for crisis preparedness, regardless of the immediate crisis impact. In contrast, staff experience becomes relevant only when a district is facing more severe problem pressure.

Yet, it is important to acknowledge some limitations of this study. Firstly, our conceptual framework draws on a thorough reading of literature on local public administration, crisis management, and fast-response organizations. Although we used expert interviews to ascertain the relevant aspects, additional factors may also be relevant for practice switching. Secondly, using the same survey for measuring dependent and independent variables introduces the risk of common method variance (Spector 2006). We have taken measures to address this issue, such as using fact-based indicators and careful question ordering (Chang, van Witteloostuijn, and Eden 2010). Thirdly, perception data entail some uncertainties when it comes to equivalence to the theoretical quantities of interest. However, alternative measurement for the respective variables was not available for this study. As practice switching is an internal process of public administrations, bureaucrats are the only people that have extensive knowledge of the subject matter. To minimize social desirability bias, it was made clear that the data was anonymized, and questions were framed in a neutral way. Further, our

interviews with local administration officials indicate a general openness about challenges and potential failures during the crisis, which lends credibility to our measurement.

An additional limitation exists with regards to measurement. This study is interested in local level administrative adaptations during crisis management. For feasibility reasons, this study is sometimes restricted to measure multi-dimensional measures with single-item indicators and hence oversimplifies the complexity of the concepts. Despite this limitation, our analysis provides valuable initial insights into local administrative adaptations during crisis management, where more comprehensive measures are currently lacking. This study encourages the use of comprehensive measures and data collection methods to strengthen and triangulate future research findings.

Regarding the generalizability of this study, the federal context and relatively legalistic nature of the German administrative system (Bach et al. 2017) may present unique challenges for practice switching compared to other countries. Moreover, the specific circumstances of the COVID-19 pandemic as a creeping crisis may differ from sudden crises like natural disasters. Nonetheless, the conceptual framework can be applicable to different countries and crisis contexts, as technical and organizational factors identified in our research are not limited to local agencies or specific crisis situations but address the broader issue of organizational adaptation. However, it is important to note that the framework may only be partially applicable to later crisis phases, as our study focuses explicitly on the initial major operational change in public administrations during the COVID-19 crisis onset.

Conclusion

This paper conceptualizes transitions from routine behaviour to crisis response in local public administrations. Drawing on the notion of practice switching, which is typically associated with fast-response organizing, we hypothesize that factors such as organizational, technological, and individual preparedness, as well as the scope of the crisis threat, facilitate such transitions. Based on an empirical analysis of early administrative action in German districts during COVID-19, we find that organizational and technical factors condition practice switching, whereas individual factors are only relevant when the threat of the crisis is severe.

Our results connect well to prior research on effective crisis management during the initial crisis phase. As such, the paper contributes, firstly, to a better understanding of the transition phase which is often challenging for public administrations. Considering that the initial phase of crisis response is crucial to the overall success of crisis management (Y. Fan et al. 2015), a better understanding of this transition phase can help explain variation in administrative crisis management performances. Secondly, the paper explores which conditioning factors enable local administrations to switch practices by means of organizational, technical, and individual preparedness. These findings speak to organizational literature on the effects of learning and staff experience on agility (Dzigbede, Gehl, and Willoughby 2020; Schomaker and Bauer 2020). Our work also complements the body of research that identifies administrative discretion and changes in decision authority as dimensions of the flexibility needed in public administration during times of crisis (Lenz and Eckhard 2022; Webb and Chevreau 2006). Finally, empirically, it adds a local comparative focus to the literature that has – so far – been underrepresented.

The findings also open avenues for future research. The results regarding staff experience contribute to the understanding that a cohesive core team, with prior crisis experience, facilitates the smooth transition between practices. However, further investigation is needed to explore the role of mutual knowledge in this relationship, as this aspect remains largely understudied. Additionally, the potential of digitization in crisis management requires further exploration. This study only focuses on digitization as facilitator for effective practice switching during the transition phase. Exploring conditions under which public administrations can overcome certain challenges of digitization and successfully use it to engage in collaborative sense-making would provide valuable insights and contribute to the development of more effective crisis management strategies (Aben et al. 2021; Desmidt and Meyfroodt 2023; Reuter 2015).

Finally, the findings of this paper have important practical implications. In today's increasingly volatile environment, it is important to design public agencies that can rapidly transition from the standardized provision of services to the development of innovative responses and to establish a vocabulary to discuss these processes (Ansell, Sørensen, and Torfing 2021, 954). Our study reinforces the importance of several factors in facilitating this transition, including training programmes, flat and decentralized hierarchies, and the adoption of administrative digitization. Furthermore, our results emphasize the value of preparedness in crisis management. It is essential for public administrations to consider proactively potential crises and engage in regular workshops and simulations, even during routine periods. These activities may appear initially redundant, but they play a crucial role in enhancing readiness and improving the overall response to future crisis events. Lastly, our findings emphasize the critical importance of individual-level learning from past crises. The lessons that crisis managers derive from their previous experiences play a significant role in effectively navigating future situations. It is crucial for public administrations to recognize and reflect upon these lessons, as they can greatly contribute to enhancing their resilience in upcoming crises.

Notes

1. The distinction between district and district-free city results from the fact that most of the larger cities in Germany do not belong to a district but combine the functions of municipality and district.
2. The interview process took place after the first wave of the pandemic in July as well as August 2020 and was completed after six scheduled interviews due to saturation. As the same challenges and themes kept recurring in conversation, we decided not to approach further potential interviewees who were still in the middle of coordinating a crisis response.
3. There is one District Office in each of the 401 German districts. Information on survey completion and timing of reminders can be found in Appendix A.
4. A pre-test was conducted to ensure the validity and comprehensibility of our questions.
5. Detailed information on the survey and the sample characteristics can be found in Appendix A.
6. Both dependent and independent variables were measured using the same survey, which can cause the risk of common method variance (Spector 2006). Therefore, suggestions to avoid common method bias made by Chang, Van Witteloostuijn, and Eden (2010), were taken into account when designing the questionnaire. For instance, fact-based indicators were used when possible and the order of questions was chosen carefully.
7. English versions of all survey questions used in this paper can be found in Appendix G.
8. The *Robert Koch-Institute* is the biomedical lead research institution of the German Federal Government. Its central responsibility is public health care.

9. Additional information on the variables can be found in the supplementary materials, see Appendix A & Appendix C.2.
10. To identify the best transformation, the R *bestNormalize* package by Peterson and Cavanaugh (2020) was used. More information as well as visualizations of the DV transformation can be found in Appendix C.1
11. Variables were standardized using standard deviation and mean centring. A correlation matrix can be found in the Appendix C.3.
12. When interpreting the regression results, the transformation of the dependent variable must be taken into account. However, due to the monotone transformation, the consistency of inferences concerning signs and significance of predictors is not affected (Griffith, Paelinck, and van Gastel 1998).
13. Findings are robust even when excluding cases with extremely high incidence, see robustness check Appendix F.
14. Interaction models include the same variables as Model 1, we simply add the respective interaction term between incidence and the explanatory variable. We check the robustness of our results concerning interaction effects by recomputing the interaction models but eliminating districts and district-free cities that experienced extreme levels of crisis affectedness. The full regression table and visualization can be found in Appendix F.

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Data availability statement

Contextual data on the German districts are available at Destatis under https://www.destatis.de/DE/Themen/Laender-Regionen/Regionales/Gemeindeverzeichnis/Administrativ/Archiv/Standardtabellen/04_KreiseVorjahr.html; https://www.destatis.de/DE/Service/Bibliothek/_publikationen-fachserienliste-14.html and Regionalstatistik https://www.regionalstatistik.de/genesis/online/data. The individual survey data cannot be shared for ethical/privacy reasons because the data collection process warranted respondents' anonymity while the covariates in the dataset reveal the identity of districts. The data will be shared on reasonable request to the corresponding author. The Online Appendix provides detailed information on the data collection process and data analysis.

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