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# The Role of Agile Values in Enhancing Good Governance in Public Administration during the COVID-19 Crisis: An International Survey

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**Abstract:** This study aimed to analyse the impact of digitalisation on good governance with respect to selected local public administrations during the COVID-19 lockdown in the spring of 2020. The overriding assumption made is that agile values mediate the relationship between digitalisation and good governance on this level of public administration. Data were obtained through a web-based survey conducted between June and August 2020. The empirical analysis was facilitated by applying partial least squares structural equation modelling (PLS-SEM) on a sample of 761 public managers from five Central European countries (Czech Republic, Germany, Poland, Romania, Slovenia). The results show that digitalisation acted as an essential driver of good governance during the COVID-19 pandemic. Three out of four agile values—“employees and internal relationships”, “working public services”, and “change management”—were also shown to help make digitalisation more effective and thereby facilitate good governance. Despite some limitations (e.g., respondents’ subjective evaluations, the study only being performed during the first wave of the COVID-19 pandemic in the observed countries with different situations and consequent measures in response, and differences in the broader environment and local administration systems in the studied countries), the findings of the study are important given the lack of similar empirical studies. Public administrations should be digitalised and reformed in a way that ensures that they effectively and efficiently design, implement, measure, and continuously improve their strategies, tactics, and services, which can all be accomplished by being agile. The paper offers insights into: (1) the lessons learnt about the nature of digitalised public services/processes and agile management approaches in response to the COVID-19 pandemic and their impact on good governance; and (2) proposals for policymakers and managers in public administrations with regard to operating in extreme VUCA circumstances in any next wave of COVID-19 pandemic or in a new pandemic/public health disaster.

**Keywords:** agile; agile values; COVID-19 pandemic; digitalisation; good governance; local public administration; PLS-SEM; public managers

## 1. Introduction

The COVID-19 pandemic that commenced in early 2020 has left the world with considerable uncertainty. This has led to the ability to be agile, especially in terms of decision making and ensuring stability amid change, becoming stressed. The COVID-19 pandemic has seen our environment turn into a real “VUCA world”, with VUCA standing for (V) volatility, (U) uncertainty, (C) complexity, and (A) ambiguity (Denning 2018; Perkin and Abraham 2017). Such a world holds significant consequences for many organisations, including public administrations, especially on the local government level (Dzigbede et al. 2020). The circumstances in which public administrations operate have thereby become more unpredictable and harder to manage. In the context of the COVID-19 crisis, the “V” in VUCA describes the rapidly and drastically changing circumstances in which both decision makers, who need to respond to situations that may change on a daily (or even hourly) basis, and citizens, who must recognise and adapt to the new situations. The aforementioned refers to their private (e.g., health issues, closure of schools and kindergartens causing a need for ensuring childcare during working hours, care for the elderly) and professional lives (e.g., working from home, working in hybrid jobs, no business travel). “U”, as uncertainty in the COVID-19 situation unfolding before us, is another huge issue because past experience cannot be used as a basis for new plans. “C”, the complexity of the current situation, is reflected in the interconnected measures/restrictions introduced by national and local governments, private sector employers, and other institutions. “A”, ambiguity, means that a situation or solution is not explicitly defined, making several interpretations plausible. The COVID-19 situation has revealed that we should not believe in and trust just one solution, but should maintain a healthy level of doubt, always looking for new, even better solutions (Aristovnik et al. 2021; Bauer et al. 2021).

Unlike weather-related disasters, which end at some stage and are limited to a particular territory, the COVID-19 pandemic has reached beyond borders (Dzigbede et al. 2020), similar to other creeping crises characterised as chronic and acute disasters (Boin et al. 2021). The environment in which public administrations are required to perform numerous public services has thus changed radically in the last 3 years, pushing them to react quickly and efficiently while understanding the new priorities in serving citizens and businesses. Both reactive and anticipatory approaches have needed to be developed. Public managers have been forced to innovatively adapt their conventional management methods to the new circumstances. Streamlining and accelerating decision-making processes have been essential while undermining legality and transparency as well as other good governance principles, given that in a time of crisis they become even more critical. This is because crises can challenge the functioning of public administrations in many ways and erode the principles of good governance, in turn pointing to numerous avenues for further research in these areas.

During the COVID-19 pandemic (and associated lockdowns), the need to digitalise public administration services and processes grew strongly, and digitalisation has emerged as an important enabler of good governance and an essential factor in the functioning of all segments of society. In particular, the mentioned pandemic was a very specific crisis with drastic restriction measures on the one hand and the availability of ICT infrastructure on the other, which we have never witnessed before. The pandemic has provided significant windows of opportunity for a radical digital transformation of public administration. More digital practices have been introduced around the world at different speeds, seeing the levels of the digitalisation of public services and processes rising exponentially compared to in the past (Amankwah-Amoah et al. 2021; Aristovnik et al. 2021; EC 2021; Gabryelczyk 2020; Fernandez and García i Rodríguez 2020; Jalonen et al. 2021; Attard and Cortis 2023).

To increase the flexibility, responsiveness, adaptability, and resilience of public administrations in times of crisis, accelerated digitalisation and “agile” as a management concept (hereinafter: agile) could be adopted for them to function in line with good governance principles in today’s VUCA world (Janssen and Van der Voort 2020). The contributions made by agile in the case of public administrations encompass, for example, the creation of

adaptive organisational structures to overcome silo approaches, better knowledge of the processes, procedures, and requirements for new services, public servants' responsible use of discretionary powers, improved resource sharing, enhanced transparency and accountability, and increased cooperation with stakeholders, including the greater participation of citizens (Aristovnik et al. 2021; Janssen and Van der Voort 2020). In our approach, integrating the mutually supporting and/or complementing features of a digitalised and agile public administration is viewed as a key driver of good governance as an important aspect of European jurisprudence and national legislation (Srebalová and Peráček 2022).

Accordingly, with respect to the situation both during and after the COVID-19 crisis, a digitalised and agile public administration is seen as highly important for the full realisation of good governance principles (especially those directly connected with a crisis, e.g., responsiveness, efficiency, participation), essential for increasing citizens' trust in the public administration (Kovač et al. 2016) and thereby also ensuring robust governance. Therefore, an international survey involving public managers from selected public administrations in five EU member states was conducted. The purpose of the analysis was to learn about the nature of digitalised public services and processes and agile management approaches in response to the COVID-19 pandemic and their impact on good governance. Based on this, another purpose was to set out the implications for policymakers and managers in public administrations with respect to operating in extreme VUCA circumstances in any next wave of the COVID-19 pandemic and in any new pandemic/public health disaster.

The structure of the paper is as follows: first, we discuss the good governance model; second, we consider the digitalisation of public administration as a driver of good governance; and, third, we stress the importance of the values associated with agile as a management approach and their mediating role between digitalisation and good governance. Connecting these concepts leads us to formulate hypotheses. In the empirical part, the survey sample and methodological approach are described, the results presented, and the main findings discussed. From the theoretical perspective, our study provides the conceptual model for strengthening good governance in local public administration, offering practical guidelines for public managers when using and/or introducing state-of-the-art digital solutions in combination with agile management approaches.

## 2. Literature Review

### 2.1. Good Governance in the COVID-19 Crisis

Good or sound (public) governance is a recognised concept, even a model of designing and implementing public policies. It involves a set of doctrines and techniques, and owes its success to an inclusive approach that, *inter alia*, enables a necessarily interdisciplinary and cross-sectoral approach to identifying and addressing societal and governance challenges. Good governance refers to theories and issues of social coordination and the nature of all patterns of rule while placing less emphasis on "hierarchy and the state" and more on "markets and networks" (Bevir 2011). Thus, it is about the manner in which public officials and institutions acquire and exercise the authority to shape public policies and provide public goods and services (OECD 2004; Carbonari et al. 2013; Goltz 2014; World Bank 2015), which makes it important to examine it from different perspectives. One may say that good governance is relevant for incorporating the COVID-19 pandemic challenges and improvements or dysfunctions in a broader framework of sustainable social development, since the latter is characterised by economic progress, social cohesion, and public governance (OECD 2004). Nevertheless, one can find various theories, definitions, multiple factors and (mis)understandings of (good) governance in the literature. Still, there are common identifiers of the good governance concept, such as the interdisciplinary approach and its co-depending fundamental principles, which are also most relevant regarding the topic of this article and associated research. Generally speaking, good governance is about a service-minded, decentralised, and participatory functioning of the state and other public agencies in society as a whole.

Moreover, it is important that good governance promotes the collaborative activities of various societal actors. The once traditional unilateral and authoritative state approach is replaced by networking, and the state is more a mediator to coordinate and adopt better policies (Kovač 2019). This means that when (all) good governance principles are followed, contemporary administration creates new value and a shift towards citizen-driven instead of citizen-centric power (Pečarič and Stare 2019). Good governance, therefore, enables the interdisciplinary functioning of modern administrative systems, despite the required legal determination and certainty, by connecting various stakeholders within the rule of law and efficient public management.

The good governance model emerged as an upgrade of the bureaucratic (Weberian) governance model and the later New Public Management model, both including different variations (Agere 2000; Bevir 2011; Bevir et al. 2003; Edgar et al. 2006; Graham et al. 2003; Kovač et al. 2016; Rao 2013; Ropret and Aristovnik 2019; Smith 2007). The most significant advantage of the Weberian model was its ability to solve quite structured problems based on regulation and economies of scale. Still, it was later unable to adapt to the fast-changing environment or solve complex problems and the conflicting goals of different stakeholders (Ansell et al. 2020). A few decades later, also overcoming the apparent weaknesses of NPM, this led to multi-actor collaboration (and subsequently co-creation) in the forms of partnerships and networks (Bever 2011; Denning 2018; Torfing 2019; Weber and Khademian 2008), which require implementation of the good governance model principles, namely, (1) the rule of law (lawfulness); (2) responsiveness; (3) transparency; (4) accountability; (5) equity and inclusiveness; (6) effectiveness and efficiency; (7) a consensus orientation; and (8) participation (Bever et al. 2003; Kovač et al. 2016). Further, good governance covers the interdependent realisation of eight fundamental principles. These principles are often redefined or multiplied in the literature. This article takes them as a basis for the changed circumstances during the COVID-19 pandemic, questioning, among others, which of them need to be compromised or adapted, and to what extent. We assume that even though these relevant principles were designed before such extreme crises, they still stand as originally defined, and it is crucial to implement them all to pursue a sustainable development paradigm. Naturally, it is expected that some principles are more emphasised in the COVID-19 circumstances, for instance, responsiveness and efficiency, yet not on account of the rule of law and accountability.

## 2.2. Digitalisation and Good Governance in the COVID-19 Crisis

Fast-moving information and communication technology (ICT) trends have also influenced how public administration functions, seeing the emergence of the digital era governance model (DEG). The latter involves reintegrating functions into the government sphere, adopting holistic and needs-oriented structures, and making greater progress with the digitalisation of administrative processes. DEG highlights the central role played by IT and information system changes in a wide-ranging series of approaches to how public services are organised as business processes and delivered to citizens or customers (Dunleavy et al. 2006). Fifteen years ago, several authors (Dunleavy et al. 2006) were already pointing to the need for a more adaptable, innovative, genuinely integrated, agile, and holistic public administration whose organisational operations would be visible in detail to both public servants and citizens and civil society organisations. This would add to organisational resilience, accountability, and “new ways of doing things”, as well as bring about more open dialogue with both citizens and policymakers.

Prior to the COVID-19 pandemic, leading public administrations in developed countries were essentially neo-Weberian (e.g., New Zealand and Singapore), while many others were suffering from the negative effects of NPM reforms. The responses to COVID-19 show that countries have tended to revert to their dominant existing routines with respect to underlying capacities: for instance, while the UK primarily sought to outsource the response to the pandemic, Singapore and Germany were relying strongly on public actors (Mazzucato and Kattel 2020). During the COVID-19 pandemic, public administration au-

thorities realised that they needed to respond to emergencies by organising rapid responses and mobilising resources. Effective governance requires capacities and capabilities for both agility and resilience (Drechsler and Kattel 2020).

In our study, the main focus concerns the drivers of good governance, assuming that, especially in the COVID-19 situation, digitalisation and an agile management approach were essential for ensuring the implementation of good governance principles. In the text below, both drivers are further elaborated. Moreover, there are notions used in literature related to good governance, typically “good”, “efficient”, “responsive”, “resilient”, and similar, that are indefinite and can be interpreted differently. Yet these are applied as abstract notions on purpose since there are no unified and explicit indicators defining them. This means that one needs to understand the mentioned attributes most broadly, whereas the research analyses conducted do try to define them as clearly as possible (see the empirical part).

### 2.3. Digitalisation as a Driver of Good Governance

The digitalisation of public administration means harnessing ICT to achieve the goals of public administration authorities, such as to efficiently manage information for the citizens (Mutambik et al. 2021; Săraru 2023), assure better service delivery, improve the access to and outreach of information, cost, and time savings (Statovci 2021), and empower people through participatory decision making (Nam 2019; Panagiotopoulos et al. 2022; United Nations 2004). It aims to improve public services and paves the way for more successful steps in each policy area. ICT is used in policymaking, audits, and follow-up processes (Rayes and Salam 2019). The rapidly expanding eco-system of advanced digital technologies (e.g., high-speed computing, big data, artificial intelligence, Internet of Things, blockchain) creates significant opportunities for all levels of government to improve the delivery of public goods and services (de Mello and Ter-Minassian 2020). Digital technologies provide great opportunities to solve big challenges if governed with a strong sense of public purpose (Perez 2019). The key risk of not fulfilling this potential lies not in how fast they are developed, but in how and for what purpose they are designed and deployed (Mazzucato 2019).

Many studies reveal digitalisation is a factor that supports different good governance principles, such as effectiveness and efficiency (Carnerud et al. 2020; Hodžić et al. 2021; Janssen and Estevez 2013; Nam 2019; Norris and Moon 2005; Ponsignon et al. 2019), transparency (Ciborra 2005), and accountability (Bertot et al. 2012; Pina et al. 2007). The COVID-19 crisis has accelerated digitalisation (Aristovnik et al. 2021; Fernandez and García i Rodríguez 2020; Gabryelczyk 2020; Balaskas et al. 2022) while also exposing certain systemic shortcomings that must be rectified to digitally transform public administrations to ensure that they perform even better in everyday situations or similar crises in the future. These shortcomings refer to specific characteristics of public administrations that make the digitalisation challenging, e.g., legal regulation in the acquisition of digitalisation projects, big and complex existing technological systems, slow innovation and development speed, hierarchical organisational structure, inflexible organisational culture, and the digital divide among public administration employees and other stakeholders (Brown 2001; Edquist et al. 2000; Parker and Bradley 2000; Ribeiro and Domingues 2018). In the first part, our empirical study was guided by the following hypothesis:

**Hypothesis 1 (H1):** *During the COVID-19 pandemic, digitalisation positively affected good governance in public administration.*

### 2.4. “Agile” as a Management Approach for Public Administration

The VUCA concept draws on the leadership theories of Bennis and Nanus (1985) and describes the volatility, uncertainty, complexity, and ambiguity of general conditions and situations. Developed in the military, it has generally gained importance in strategic management. Its relevance relates to how people view the conditions in which they make

decisions, plan for the future, manage risks, foster change, and solve problems. In a globalised world, the pressure put on managers has become enormous. In order to succeed, they need a vision and an understanding of their organisations' capabilities, strengths, courage, and adaptability (George 2017). This applied even more strongly in the pandemic to both the private and public sectors.

To survive in a VUCA world, "agile" as a management approach emerged, representing a way of thinking and performing with a focus on internal and external collaboration, the quality and regular delivery of value, and the ability to deal with numerous changes. It comprises values, principles, methods, and practices (Denning 2018; Perkin and Abraham 2017; Schoor 2021). Agile management's historical roots lie in manufacturing with the quality movement in Japan in the 1970s and then in the United States during the 1980s in the form of iterative production techniques. In 1990, the iterative small team approach became known as "lean manufacturing". Yet, while the systematic use of small teams and the iterative approach began in hardware, it took off in software development in 2001 following the publication of the Agile Manifesto (Denning 2018). These days, businesses in all sectors, including public administration, and on all hierarchical levels use it (Ansell et al. 2020; Carvalho et al. 2019; Greve et al. 2020; Rigby et al. 2016; Mergel et al. 2021; Schoor 2021). Public administrations are also learning how to apply it while searching for innovation and performance improvements in their operations and provision of public services, e.g., software development (Ribeiro and Domingues 2018), crisis responses, including emergency management (Janssen and Van der Voort 2020; Mergel et al. 2021), and administrative reforms (Greve et al. 2020).

The key values of agile, as stated in the Agile Manifesto (Beck et al. 2001), as a counterpoint to more rigid management processes like waterfall planning (Denning 2018; LeMay 2019; Perkin and Abraham 2017; Sutherland and Sutherland 2014), are as follows: (1) Individuals and interactions over processes and tools; (2) Working software over comprehensive documentation; (3) Customer collaboration over contract negotiation; and (4) Responding to change over following a plan. While applying these values to public administration (especially during a crisis), they may be formulated as follows: (1) Employees and internal relationships; (2) Working public services; (3) A citizen orientation; and (4) Change management. By implementing these values, public administration can exercise agility, namely, the ability of an organisation as a whole to respond quickly to changes, notably external ones, e.g., by adapting and enriching organisational processes (Murdock and Barber 2017) or changing customer experiences (Schoor 2021). Thus, agile does not inherently conflict with democratic or other traditional administrative values, but is a method for making service delivery more efficient (Mergel et al. 2021).

According to Perkin and Abraham (2017), a vital advantage of the agile management approach is its ability to quickly adapt to changing realities and minimise overall risk. Although long-term goals may be set, there is much greater flexibility built into the path towards achieving them. Agile management means there is no longer a choice between disciplined execution (specific to the mechanistic/bureaucratic model of the organisation) and innovation (specific to the organic model of the organisation). Indeed, agile allows organisations to do both at once (Denning 2018; Ribeiro and Domingues 2018).

### *2.5. Agile Values as Mediators between Digitalisation and Good Governance during the COVID-19 Crisis*

A widespread illusion existed before the COVID-19 crisis that technology by itself would resolve many of the challenges being faced by organisations. Many could not see that since they all generally had access to the same rapidly evolving technology, competitive advantage arose not from the technology itself, but from the agility with which managers in these organisations understood and adapted the technology to meet users' actual needs (Denning 2018). In the pre-COVID-19 world, public administrations were also increasingly turning their attention to tackling the "grand challenges" or "wicked issues" like climate change, demographic challenges, financial crises, and the promotion of health and well-

being (Mazzucato 2018; Peters et al. 2011). Despite having in place numerous theories and models to capture different aspects of handling major crises, such as crisis management (Boin et al. 2016; Bouckaert et al. 2020) and blame avoidance (Hood 2007; Mortensen 2013), public administrations failed to cope with the COVID-19 crisis effectively, efficiently, and, for example, in Europe, in a coordinated way (Bouckaert et al. 2020). COVID-19 has brought long-held concerns about the digital economy to the fore: the monopoly power wielded by big tech, the lack of privacy, poor government capabilities, and the digital divide between those with and those without access (Mazzucato and Kattel 2020). Still, the COVID-19 crisis has accelerated public administration reforms concerning digitalisation and work conditions that barely three years ago would have looked entirely unrealistic (Cohen et al. 2021). However, we must bear in mind that public administration reforms cannot be successful if focused solely on their content and do not implement adequate approaches and methods.

The unprecedented COVID-19 pandemic forced public administration authorities around the world to introduce measures that exceeded anything ever encountered by this generation. Their justification is quite clear—to maintain public health. Public administration was responsible for both adopting the legislation and adapting in response to it. While, on the one hand, the pandemic has revealed several weaknesses regarding the slow pace of previous public administration development, on the other, it has also accelerated the development of many aspects of public administration operations, e.g., the digitalisation of public administration in relation to electronic delivery, the speed of procedures, the use of new technologies, and several other areas of public life affected by the pandemic (Aristovnik et al. 2021; Horvat et al. 2021; Kovač et al. 2021). Good governance, including effective governmental intervention, is accordingly important for pandemic control (Nabin et al. 2021). It has become evident that in order to ensure the implementation of the good governance principles, public administrations, besides the accelerated digitalisation, have needed to introduce new management approaches, representing another challenge. Perkin and Abraham (2017) state that the new approaches can easily bump up against existing business practices and priorities. Mergel et al. (2021) stress that agile is a critical concept to be studied in the context of emergency management and public health responses. Moving to agile practices requires a significant shift in leadership style, culture, and working processes (Perkin and Abraham 2017). Unless employees feel psychologically safe (Edmondson 2018), they will not be prepared to collaborate, co-create, or be open to risk, which is usually closely related to any changes. This explains why they must be adequately supported by their leaders/managers and coaches in agile to recognise its underlying philosophy and principles (Perkin and Abraham 2017).

As revealed by the first wave of the COVID-19 pandemic experience, agile can reshape government, public management, and governance generally by bringing many benefits to public administrations, helping public managers overcome the obstacles they face when they are expected to make their organisations more flexible and responsive (Mergel et al. 2021). In public administration, agile is inspired by agile in software development, yet in administrative jargon, it means responding efficiently to changing public needs. The design of public services stresses the inclusiveness and transparency of both citizens and civil servants, and decision making involves both internal and external users from the start of the process, unlike in traditional bureaucracy where decisions are made top-down and feedback/complaints are sent bottom-up. Agile also includes efficiency in delivering services and being responsive to public values, e.g., equality and social responsibility. According to Peters et al. (2011) and McGuire and Agranoff (2011), functioning in the form of networks provides agile horizontal cooperation, thereby emphasising the orientation towards consensus. Agile public administrations are open to reforms and quick in responding to changes in the environment, public values, and public needs (Greve et al. 2020; Mergel et al. 2021). Alongside the advantages of agile as a management approach in public administration, there are many challenges, like agile being antithetical to many typical bureaucratic line organisations, or agile management requiring new styles of leadership and new forms

of contracting and public procurement (Mergel et al. 2021; Opelt et al. 2013; Ribeiro and Domingues 2018). As stated above (see Section 2.3), digitalisation is an important factor of good governance. In order to efficiently exploit the potential held by digitalisation, state-of-the-art management approaches, such as agile (specifically agile values), should also be introduced in public administration. To verify our assumption that agile values (see Section 2.4) are key drivers of good governance, we formulated the following hypotheses:

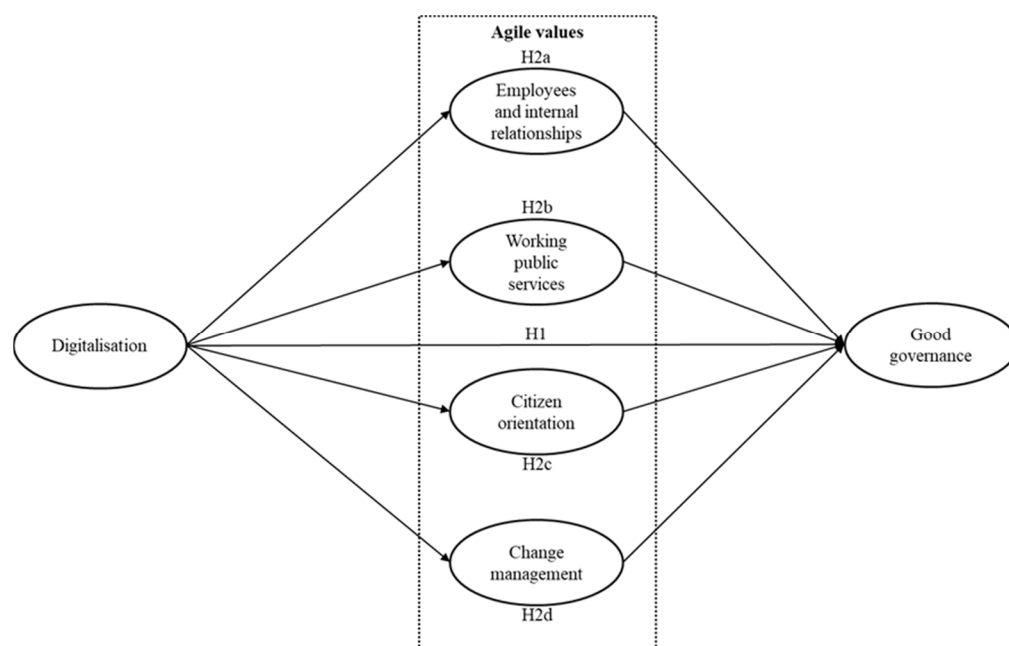
**Hypothesis 2a (H2a):** *The agile value “employees and internal relationships” mediates the relationship between digitalisation and good governance.*

**Hypothesis 2b (H2b):** *The agile value “working public services” mediates the relationship between digitalisation and good governance.*

**Hypothesis 2c (H2c):** *The agile value “citizen orientation” mediates the relationship between digitalisation and good governance.*

**Hypothesis 2d (H2d):** *The agile value “change management” mediates the relationship between digitalisation and good governance.*

This led us to propose the conceptual model presented in Figure 1.



**Figure 1.** Research model.

The model in Figure 1 presents our initial assumption that during the COVID-19 pandemic’s first wave, digitalisation had a positive effect on good governance (H1), with this effect being mediated by four agile values (H2a, H2b, H2c, H2d). To corroborate these assumptions, the international study presented below was performed.

### 3. Materials and Methods

#### 3.1. Study Participants and Procedure

The data for this study were acquired in an international survey aimed at investigating the effects of the COVID-19 pandemic on public administrations at the local level. The analysis focused on the Czech Republic, Germany, Poland, Slovenia, and Romania. Given their location in Central Europe and their membership in the EU, they share the majority of politico-administrative dimensions, including the deeply rooted (Germanic) administrative



traditions in the recent context of public governance. These characteristics make them a group of comparable countries that differ from other groups of European countries with entirely distinct administrative traditions, particularly those in the Francophone and Scandinavian regions. Specifically, the strong administrative tradition originating from Germany exerted a significant influence on the administrative practices in Central Europe, especially in Slovenia and the Czech Republic, and to a lesser extent in Poland and Romania. Nevertheless, given the varying levels of the rule of law, resulting in specific public administration traditions, responsibilities, and management styles, the sample still captures diversity within selected group of countries (Aristovnik et al. 2021). Our study was accordingly focused on the general Central European context rather than making comparisons between the selected countries—the latter was studied as a homogeneous sample (see also Hirsch et al. 2023).

The online questionnaire contained 26 questions, the majority of which were closed-ended, organised into six segments (general, procedures and services, human resource management, economic and financial aspect, time after the pandemic, demographic data). The questionnaire was developed through three consecutive steps. The first step consisted of an in-depth theoretical literature review concerning the main examined concepts, i.e., digitalisation, agile, and good governance. In the second step, the theoretically defined concepts were operationalised by academic experts from economic, legal, and public administration fields. In the last step, the questionnaire was tested, revised, and evaluated by considering practical experiences and recommendations from a selected 10% of Slovenian administrative units (i.e., their top managers). This approach is convenient for public administration research, especially when empirical studies are lacking (Aristovnik et al. 2022). The questionnaire was also tested and approved by the Ministry of Public Administration in Slovenia, before being translated into the national languages of the participating countries. A web-based survey was made available between June and August 2020 via the open-source web application 1KA and promoted by academic experts from the studied countries. During this time frame, the majority of the participating countries faced a significant pandemic threat, which resulted in the implementation of extensive lockdown measures.

The survey was aimed at top public managers for managing public administration authorities, which are competent in executing administrative procedures and providing public services as general administrative territorial authorities on the local level. The top manager represents the administrative unit, issues decisions in the administrative procedures at the first level, coordinates the work of the internal organisational units, and decides on the rights, duties, and working relationships of public employees and on other personnel issues.

The sampling method employed was non-probabilistic and relied on convenience sampling enabled by information communication systems and channels (Etikan et al. 2016). This approach seems to be the most efficient and appropriate for capturing the immediate effects of the COVID-19 pandemic, and due to social distancing circumstances, it was often used in this kind of research (Pierce et al. 2020). The participants were guaranteed that the survey would maintain strict confidentiality and anonymity. The final sample included 926 participants from five European countries (see Table 1), with varying response rates ranging from 27.2% in Germany and 28.0% in the Czech Republic to 58.2% in Romania and 66.2% in Poland, and even 100.0% in Slovenia. Considering the high hierarchical position held by public managers, the response rate may be regarded as acceptable (Hiebl and Richter 2018). To minimise the potential for bias, participants with more than 10 missing values or who provided repeated answers were excluded, leaving a final sample of 761 participants. The socio-demographic and geographic characteristics of the sample are presented in Table 1.

**Table 1.** Socio-demographic and geographic characteristics of the respondents.

Socio-Demographic and Geographic Characteristics	Number (%)
Employment (no. of years)	
less than 1	42 (6.6%)
1 to 5	197 (31.1%)
6 to 10	139 (22.0%)
11 to 15	100 (15.8%)
16 to 20	69 (10.9%)
more than 20 years	86 (13.6%)
Work experience (no. of years)	
less than 10	39 (6.0%)
11 to 20	154 (23.8%)
21 to 30	256 (39.5%)
31 to 40	199 (30.7%)
Size (no. of employees)	
less than 20	51 (7.8%)
21 to 40	99 (15.0%)
41 to 60	44 (6.7%)
61 to 80	5 (0.8%)
81 to 100	139 (21.1%)
more than 100	320 (48.6%)
Size (no. of inhabitants)	
up to 18,000	138 (40.5%)
18,000 to 50,000	19 (5.6%)
50,000 to 100,000	69 (20.2%)
over 100,000	115 (33.7%)
Coverage area	
predominantly urban	227 (34.8%)
predominantly rural	426 (65.2%)
Country	
Czech Republic	54 (7.1%)
Germany	81 (10.6%)
Poland	341 (44.8%)
Romania	227 (29.8%)
Slovenia	58 (7.6%)

Note: The final sample consists of 761 respondents, although not all provided information on their socio-demographic characteristics.

### 3.2. Measures

This study primarily focuses on digitalisation's impact on good governance with respect to selected local public administrations during the COVID-19 lockdown in the spring of 2020. In order to facilitate the operationalisation of the examined concepts, only selected questionnaire elements were identified as relevant for further empirical considerations. Good governance consists of three items, describing the most characteristic principles relevant in the public administration context (Kovač et al. 2016; Aristovnik et al. 2022). Further, digitalisation includes six items, capturing the digitalisation of administrative and support services as well as cooperation with different stakeholders. Finally, agile as a management concept includes a total of 10 items, measuring the key values of agile, i.e., employees and internal relationships (EIR) (three items), working public services (WPS) (two items), citizen orientation (CO) (three items) and change management (CM) (two items) derived from the Agile Manifesto (Beck et al. 2001) and adapted to the context of local public administration.

The general principle for measuring items entailed expressing the differences in the functioning of local public administrations during the COVID-19 pandemic compared to their regular operations. The measurement of individual elements was accordingly conducted using a 5-point Likert scale (i.e., 1—significantly less; 2—less; 3—the same; 4—greater; 5—significantly greater), which is a prevalent scaling method in the social sciences,

including public administration research (Croasmun and Ostrom 2011). The descriptive statistics of 19 substantive survey items, representing a basis for measuring the six latent constructs in the proposed conceptual model, are presented in Table 2.

**Table 2.** Descriptive statistics of the variables used for measuring latent constructs.

Variables	Description	Mean	Std. Dev.	Min	Max
Digitalisation					
6a	Administrative procedures and services	3.708	0.709	1	5
6b	Support services	3.608	0.697	1	5
6c	Cooperation with other administrative units	3.624	0.750	1	5
6d	Cooperation with other bodies/authorities	3.594	0.742	1	5
6e	Cooperation with line ministries	3.584	0.774	1	5
6f	Cooperation with the Ministry of Public Administration	3.479	0.740	1	5
Good Governance					
4a	Rule of law	3.072	0.758	1	5
4b	Efficiency	3.264	0.833	1	5
4c	Responsiveness	3.440	0.916	1	5
Employees and internal relationships (RIS)					
17a	Opportunity to digitise work processes	3.866	0.747	1	5
17f	Importance of the workplace health promotion	3.994	0.758	1	5
17g	Importance of protection of older and risk groups	3.956	0.713	1	5
Working public services (WPS)					
5a	Protection of public interest	3.479	0.804	1	5
7a	Using simplified e-operations	3.990	0.722	1	5
Citizen orientation (CO)					
r15g <sup>1</sup>	Inability to provide services to certain groups of citizens	2.466	0.807	1	5
r15h <sup>1</sup>	Missing formal personal contacts with citizens	2.351	0.847	1	5
r16a <sup>1</sup>	Citizens' excessive expectations	2.260	0.763	1	5
Change management (CM)					
13a	Temporary relocation due to urgent work needs	3.159	0.892	1	5
13b	Working overtime	3.027	0.994	1	5

Note: <sup>1</sup> Measurement scale of the variables is reversed.

In addition to the substantive survey items, three sociodemographic survey items were used as control variables in the empirical analysis in an attempt to explain the potential influence of coverage area (urban or rural) and size (according to the number of employees and inhabitants) of administrative units. The complete questionnaire, along with a brief description of the survey, can be accessed online (see <http://www.covidsoclab.org/wp-content/uploads/2021/10/Questionnaire.pdf>, accessed on 12 September 2023).

### 3.3. Statistical Analysis

The data preprocessing was carried out using the Python programming language, utilising the Pandas and Numpy libraries (McKinney 2012), which were also employed to display the socio-demographic and geographical characteristics of the sample. The hypotheses of the study assume cause-and-effect relationships. Structural equation modelling (SEM) displays such relationships by showing the assumed relationships between latent constructs. SEM allows the empirical testing of a causal model. To test complex models with direct and indirect effects, Hair et al. (2017) propose using partial least squares structural equation modelling (PLS-SEM) to analyse the data collected. PLS-SEM is a variance-based approach to structural equation modelling. It allows the simultaneous estimation of construct measurements and structural path relationships. Accordingly, PLS-SEM was used to analyse the data and test the research model (see Figure 1). The required sample size for detecting the statistical power of at least 0.8 at an  $\alpha$ -level of 0.05 is 77 (Nitzl 2016). Thus, a sample size of 761 allows relevant effects to be detected in our research model.

#### 4. Empirical Results

In PLS-SEM, the evaluation of the model follows a two-step approach. Step one includes the measurement model's evaluation, while step two covers the analysis of the inner path model (Hair et al. 2017). The measurement model only uses reflective items. We therefore evaluated the reflective measurement model using Cronbach's alpha, composite reliability, AVE, and HTMT. Table 3 shows that all quality criteria were satisfied, with three exceptions. Cronbach's alpha was below the value of 0.7 for working public services (WPS), citizen orientation (CO), and change management (CM).

**Table 3.** Evaluation of the constructs.

	Indicators	Convergent Validity		Internal Consistency Reliability		Discriminant Validity
		Loadings	AVE	Cronbach's Alpha	Composite Reliability	HTMT
Critical values <sup>1</sup>		>0.7	>0.5	>0.7	>0.7	HTMT confidence interval does not include 1
Digitalisation	6a	0.768	0.628	0.882	0.760	Yes
	6b	0.763				
	6c	0.845				
	6d	0.825				
	6e	0.795				
	6f	0.753				
Good governance	4a	0.612	0.638	0.719	0.837	Yes
	4b	0.879				
	4c	0.875				
EIR	17a	0.811	0.667	0.760	0.857	Yes
	17f	0.828				
	17g	0.811				
WPS	5a	0.804	0.627	0.405	0.770	Yes
	7a	0.779				
CO	r15g	0.764	0.577	0.640	0.804	Yes
	r15h	0.767				
	r16a	0.748				
CM	13a	0.829	0.711	0.593	0.831	Yes
	13b	0.857				

Note: <sup>1</sup> Thresholds of the quality criteria that needed to be met. The threshold is stated for each quality criterion.

Given that Cronbach's alpha generally underestimates internal consistency reliability in PLS-SEM, composite reliability provides a more appropriate measure in a PLS-SEM setting (Nitzl 2016; Werts et al. 1974). For these three constructs, the quality criteria for composite reliability were met. The value for digitalisation, item 4a, was slightly below the threshold with regard to its loading. Since all other quality criteria were met, the item was retained.

Table 4 summarises the results of the inner path model and the influences of the control variables.

**Table 4.** Path coefficients and *p*-values.

	Digitalisation	EIR	WPS	CO	CM	Good Governance
Digitalisation	-	0.292 ***	0.456 ***	−0.145 ***	0.140 ***	0.170 ***
EIR		-	-	-	-	0.099 **
WPS			-	-	-	0.311 ***
CO				-	-	0.138 ***
CM					-	0.122 ***
Type <sup>1</sup>						0.025
Size—Employees <sup>1</sup>						−0.017
Size—Inhabitants <sup>1</sup>						0.045
R Square	-	0.085	0.208	0.021	0.020	0.235
R Square Adjusted	-	0.084	0.207	0.020	0.018	0.227

Note: \*\*\*, \*\*, \* indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively (two-tailed).

<sup>1</sup> Control variables.

The results show that no control variable has a significant effect ( $p$ -value < 0.05). Including the control variables in the research model means that other path relationships in the model are not affected by this effect. Digitalisation has a direct positive and significant impact on good governance (H1), meaning that it is an essential driver of good governance practices also during the COVID-19 pandemic.

The study follows Nitzl et al. (2016) and Sarstedt et al.'s (2020) approach to assessing the mediation effect by using PLS-SEM. Nitzl et al. (2016) state that mediation exists if the indirect effect is significant. If the direct effect is non-significant, full mediation is in place; otherwise, partial mediation exists. The results for the total, indirect, and direct effects and the bias-corrected confidence intervals with a two-tailed significance level of 0.05 are presented in Table 5. If zero is not included in the confidence interval, this indicates the effect is significant at the level of 0.05.

The mediation analysis leads to the following results. Agile values, such as employees and internal relationships, working public services, and change management, partially mediate the relationship between digitalisation and good governance (complementary mediations), as their indirect effects were positive and statistically significant while the direct effect of digitalisation on good governance was also positive and statistically significant. Hence, our hypotheses H2a, H2b, and H2d are supported. Moreover, citizen orientation partly mediates the digitalisation–good governance relationship, where this mediation is competitive, as its indirect effect is negative and statistically significant while the direct effect of digitalisation on good governance is positive and statistically significant. Thus, we are able to show support for hypothesis H2c.

**Table 5.** Evaluation of mediation effects.

Relations	Hypotheses <sup>2</sup>	Total Effects		Indirect Effects <sup>3</sup>		Direct Effects	
		Coefficient	95% Confidence Interval <sup>1</sup>	Coefficient	95% Confidence Interval <sup>1</sup>	Coefficient	95% Confidence Interval <sup>1</sup>
Digitalisation → Good Governance	H1	0.338	[0.272; 0.398]	-	-	0.170	[0.099; 0.235]
Digitalisation → Employees and internal relationships → Good Governance	H2a	-	-	0.029	[0.010; 0.055]	-	-
Digitalisation → Good Governance	H1	0.338	[0.272; 0.398]	-	-	0.170	[0.099; 0.235]
Digitalisation → Working public services → Good Governance	H2b	-	-	0.142	[0.102; 0.188]	-	-
Digitalisation → Good Governance	H1	0.338	[0.272; 0.398]	-	-	0.170	[0.099; 0.235]
Digitalisation → Citizen Orientation → Good Governance	H2c	-	-	-0.020	[-0.039; -0.007]	-	-
Digitalisation → Good Governance	H1	0.338	[0.272; 0.398]	-	-	0.170	[0.099; 0.235]
Digitalisation → Change Management → Good Governance	H2d	-	-	0.017	[0.006; 0.033]	-	-

Note: <sup>1</sup> If the interval does not include 0, the relationship is significant. <sup>2</sup> For mediation, the path coefficients of the respective paths are multiplied. <sup>3</sup> Mediation exists if the indirect effect is significant. If the direct effect is non-significant, full mediation is in place. If the direct effect is significant, either complementary (positive paths) or competitive (negative paths) mediation exists.

## 5. Discussion and Conclusions

### 5.1. Discussion

Before the COVID-19 pandemic, the availability of ICT infrastructure and competencies in public administration organisations was not a sufficient factor of efficiency and effectiveness or other good governance principles. In the first half of 2020, the unparalleled and drastic health restrictions (e.g., reducing one's social contact to a minimum, the shift of work and business to the Internet) made digitalisation a priority task to ensure that good governance principles (e.g., transparency, participation, effectiveness, and efficiency) were also adequately implemented during the crisis. Public administration was shown to be insufficiently prepared for the transition to fully digital operations. Public administration organisations mostly seemed not to have any crisis management plans in place for such a shock. To be truly resilient in the future, when implementing good governance principles, especially responsiveness and participation/inclusion, it is necessary to ensure access to well-performing digital infrastructure (Internet, hardware, software, and electronic services), its skilful use, and the engagement of every public servant, as digital infrastructure is a precondition for the implementation of digitalisation (Aristovnik et al. 2021; Fissi et al. 2022; Kovač et al. 2021). The COVID-19 crisis has accelerated digitalisation while also exposing certain systemic shortcomings that must be rectified if digitally transformed public administrations are to perform even better in the future in everyday situations or similar crises. Recent experiences also reveal that good governance, including effective governmental intervention, holds important implications for pandemic control (Nabin et al. 2021). This implies that the capacity of public administrations to cope with the pandemic is crucial for the effectiveness and efficiency of the overall national response in the fight against the novel SARS-CoV-2 virus (Schomaker and Bauer 2020). There are many challenges in need of tackling: for example, not only should the necessary digital infrastructure be strengthened, but new competencies and skills should also be acquired (e.g., special obligatory courses designed and implemented in the Public Administration curriculum on the higher education level, on-the-job training performed), digital communication strategies developed, and digital rights consolidated.

The COVID-19 pandemic, as a sudden disruptive situation, caused the change to speed up (Riekkinen 2021). More than ever, countries have needed strong, agile, and well-linked public administrations to respond to the COVID-19 pandemic while continuing to provide routine and necessary services amid rapidly shifting conditions (Schuster et al. 2020). The COVID-19 crisis showed that the EU countries were poorly prepared to cope with health crises and to respond to a global, sustained, and threatening public health emergency (Bouckaert et al. 2020; WHO 2019). Public administration authorities require dynamic capabilities and capacity to govern a pandemic, all too often missing. These include the capacity to adapt and learn, to align public services and citizens' needs, to govern resilient production systems, and to govern data and digital platforms (Mazzucato and Kattel 2020). In addition, despite many characteristics of public administrations that make the adoption of agile practices more challenging than in the private sector, e.g., a hierarchical organisational structure, a specific organisational culture, big and complex technological systems, slower innovation, and development speed (Nuottila et al. 2016; Ribeiro and Domingues 2018), whether to go agile or not in public administration is now no longer a question.

The results of our study confirm the findings of Greenway et al. (2018) and Perkin and Abraham (2017). They claimed that "digital" is not only about the technological aspects, but the new ways of managing organisations, namely, people (skills and behaviours), culture, practices, and business models. Effective and efficient digitalisation supported by suitable management approaches enables the delivery of simpler, cheaper, and better services for organisations to operate effectively in the online era. In our case, it was proven that agile values (as a basis of modern managerial practices) effectively mediate the relationship between digitalisation and good governance, which means that by changing the culture and managerial approaches, the potential of digitalisation can be exploited more

intensively for the optimal implementation of good governance principles. Moreover, it is necessary to approach digitalisation in a multidisciplinary way, including the ICT and managerial/organisational aspects, especially in public administration/bodies, law, and the congruity of legal frameworks with others to enable sustainable development.

The first wave of the COVID-19 pandemic showed public managers that the existing/old ways of managing and leading were no longer working, requiring them to quickly adapt their approaches to the new circumstances as they emerged and to digitalise public services even faster, without any long-term plans or attempts to apply known solutions to completely unknown problems. The COVID-19 crisis demonstrates how it is necessary to perceive the challenges to the public administration in a new way and shows the need, willingness, and capacity to change the public administration's modus operandi in the pursuit of robust solutions to turbulent problems (Ansell et al. 2020, 2022).

The digitalisation of public administration aims to improve the quality of services for citizens and businesses. With regard to public administration organisations during the time of the COVID-19 pandemic, our study offers evidence that digitalisation directly affects good governance (see Table 5: H1). At the same time, three out of four agile values mediate this relationship positively (see Table 5: H2a, H2b, H2d). More specifically, the agile values "employees and internal relationships", "working public services", and "change management" helped make digitalisation more effective and the desired benefits easier to accomplish during the COVID-19 pandemic. This reveals that, besides digitalisation itself, these agile values are crucial for enhancing good governance. The strengths of the indirect effects suggest that it is most important to improve working public services (process-wise), while the mediation of managerial approaches (i.e., employees and internal relationships and change management) is weaker. On the contrary, a "citizen orientation" still mediates the relationship between digitalisation and good governance, but cannot serve as a channel to exploit the benefits of digitalisation for good governance since the implementation of this agile value (especially from the perspective of vulnerable groups of citizens) was severely hampered during the COVID-19 pandemic. Similarly, as found by Dzigbede et al. (2020) and Mergel et al. (2021), it is vital that, in a crisis like COVID-19, public managers and staff exhibit the agile values that require that strong attention be paid to people over processes; operational digitised systems over antiquated paper trails; collaborative, not adversarial problem-solving across sectors; and the nimbleness of response in the face of faulty, inadequate, old, or absent plans.

## 5.2. Implications

Traditional managers often believe—and hope—that changes are merely a fix they can apply to specific issues, rather than a fundamentally different way of approaching management itself (Denning 2018). The COVID-19 crisis and its consequences have brutally revealed the need for a different way of managing public administrations, with fundamentally different goals, principles, and values that deeply disrupt entrenched assumptions, attitudes, and habits. In this context, the findings of our study may prove valuable to both researchers and practitioners (public managers) for understanding the importance of both digitalisation and agile in order to design and implement new management approaches to respond to unprecedented situations as quickly, effectively, efficiently, transparently, holistically, and sustainably as possible, and to thereby assure good governance in the long run. As also studied by Dzigbede et al. (2020) and Moon (2020), COVID-19 has pushed public managers to engage in an agile-adaptive approach to management that calls for decisiveness and relatively quick actions. Public managers should continue with agile as a management approach to plan and organise flexibly, lead (hire, motivate, communicate) effectively and efficiently, collect relevant information, act decisively, control efficiently, and keep adapting and innovating even when the COVID-19 crisis becomes more a matter of history.

Regarding the implications for public administration in general, we can further support the findings of other authors (e.g., Ansell et al. 2020; Fraher and Grint 2018; McCann



and Selsky 2012; Osborne et al. 2020; Perkin and Abraham 2017; Room 2011) and claim that it is necessary to make public institutions more flexible and agile so that they can transform and adapt themselves in response to any future turbulence. Administrative systems centred around control need to be replaced by trust-based systems through decentralisation, collaboration, delegation, autonomy, adaptation, and innovation. Professional public management, imposing self-management, trust, psychological safety, and accountability are crucial for robust good governance. Finally, the proposed research model can serve as a tool for evaluating the implications of digitalisation and agile aspects for good governance, which are becoming increasingly popular in the current efforts to transform public administration digitally.

### 5.3. Limitations

The study comes with several limitations that should be acknowledged. First, the analysis relies on the subjective assessments of the respondents, which could result in misunderstandings of certain aspects of the survey. It is plausible to consider that some respondents might under/overestimate the state of individual aspects related to digitalisation, agile values, and good governance. Second, the study was conducted at various stages of the pandemic across different EU member countries, each experiencing different degrees of pandemic magnitude. Third, the range of responsibilities at the local public administration level might vary based on country-specific factors, including national legislation. Fourth, while the study encompasses five EU member countries with comparable local general administrative authorities having similar structures and functions, caution is advised when attempting to generalise the results to other EU member countries not included in the study. Fifth, even though all of the countries examined are members of the EU, the results might not solely reflect the impact of the COVID-19 pandemic, but could also be influenced by other factors (e.g., differences in the digital transformation, economic development, public administration performance political conditions). Finally, the questionnaire was developed specifically for the COVID-19 pandemic public administration context, including the most relevant aspects of management in such circumstances (administrative procedures and public services, human resources management, economic and financial aspects).

### 5.4. Future Research

Despite the acknowledged limitations, the findings are significant due to the scarcity of similar empirical studies. The mentioned crisis is a turning point that has compelled us to recognise the need for more in-depth research in order to understand the environment in which public administrations function, especially when combining concepts like digitalisation (technological aspect) and agile as a management approach, as well as their impact on governance and, consequently, the further development of EU member states' public administrations. The COVID-19 situation demonstrates that technological and managerial changes can be accomplished much faster than in the past. Therefore, future research should focus on what and how must be changed and/or upgraded as quickly as possible. Accordingly, several avenues for future research are identified. First, the quantitative results may be supplemented with qualitative evidence from in-depth interviews with public managers, which may provide additional aspects neglected by quantitative studies. Second, the emergence of new SARS-CoV-2 virus strains of the novel SARS-CoV-2 virus has led to new waves of the COVID-19 pandemic, adding to the challenges facing public administration that could be examined and addressed in future studies. Third, future studies could conduct a similar survey in other EU countries to include and compare countries with different administrative traditions.

### 5.5. Conclusions

The COVID-19 pandemic has revealed that public administrations face ever more complex problems and an ever more turbulent social, economic, and natural environment. The COVID-19 pandemic has hit public administrations on the local level in both an internal

context (e.g., implementing security and safety measures, working from home, using new digital tools to provide services to internal and external stakeholders) and an external context (e.g., enforcing citizens' compliance with the restrictions, managing the lockdown measures, processing requests for social support).

Although the digitalisation of public administration has been underway for the last few decades, institutional change has been slow and tended to resist significant changes. Technology is also changing very rapidly, even exponentially, whereas organisations (e.g., systems, processes, values, knowledge) change much slower; the gap between technological and organisational changes is growing significantly.

Numerous studies and discussions have considered enhancing digitalisation and improving managerial approaches in public administration authorities in both "normal" and extraordinary circumstances. The COVID-19 crisis may be understood as an opportunity to consider what can and must be emphasised to fully implement good governance principles. Our empirical study revealed, first, that digitalisation has a direct positive and significant impact on good governance, meaning that digitalisation was also an important driver of good governance practices during the COVID-19 pandemic. Second, agile values serve to clarify the nature of the relationship between digitalisation and good governance. Three out of four agile values positively mediated the digitalisation–good governance relationship. This implies that implementing them could help make digitalisation more effective and make it easier to achieve the desired benefits during the COVID-19 pandemic. Therefore, besides digitalisation itself, focusing on employees and internal relationships, working public services, and change management are crucial for enhancing good governance in a crisis like the COVID-19 pandemic.

To conclude, an effective and efficient response to a crisis requires a public administration that fully actualises the principles of good governance. Public administrations must, thus, be digitalised and reformed in a way that ensures that they effectively and efficiently design, implement, measure, and continuously improve their strategies, tactics, and services, which can all be accomplished by being agile, i.e., simultaneously implementing agile values, which embrace (1) professional leadership and (2) the professional provision of innovative (digital) public services, along with (3) a citizen orientation and (4) professional change management. Digitalisation and "agile", thus, went hand-in-hand as enablers of good governance in public administrations during the COVID-19 pandemic and will also do so in post-COVID-19 times.

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