

## **Policies for Enhancing Public Trust and Avoiding Distrust in Digital Government During Pandemics**

### **Insights from a Systematic Literature Review**

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# Policies for Enhancing Public Trust and Avoiding Distrust in Digital Government During Pandemics: Insights from a Systematic Literature Review



Ecem Buse Sevinç Çubuk, Burcu Demirdöven, and Marijn Janssen

**Abstract** The coronavirus outbreak (COVID-19) has demonstrated the importance of the state capacity and public policy-making process in managing both the pandemic and the resulting crisis. Trust and/or distrust in the relationship between citizens and authorities can determine the success or failure of states in combating pandemics. The goal of this study is to provide insight into trust and distrust in digital government during pandemics by creating an overview of the scattered knowledge. Accordingly, the chapter creates an overview of the factors influencing trust and distrust in digital government in pandemics. The results showed that factors affecting distrust are mostly associated with problems in the interactions between citizens and public authorities, whereas factors affecting trust address governments' policy responses and public compliance. The level of trust is a dynamic condition that can either be strengthened or broken. A single factor can result in trust for one person and distrust for another person. Surprisingly, trust and distrust can coexist at the same time. Governments must pursue a balance between trust- and distrust-related factors in times of pandemics to derive the dual benefits of trust and distrust.

**Keywords** Trust · Distrust · Digital government · Pandemics · Systematic literature review · Factors

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## 1.1 Introduction

COVID-19 is a problem affecting all parts of society. Digital government technologies have sustained dialogue between governments and citizens during the COVID-19 pandemic. Digital technologies have played a crucial role in the rapid decision-making process based on real-time data and analytics as well as enhancing coordination to distribute evidence-based services (Division for Public Institutions and Digital Government, 2020).

In the context of government-citizens' relations through digital technologies, scholars have devoted much attention to the antecedents and consequences of the disposition to trust than those of the disposition to distrust. However, governments may need different strategies to increase trust or reduce distrust and different research models and measurement scales to explore them (Saunders et al., 2014). In situations with low trust, the basic attitude toward governments is still one of trust, whereas when there is distrust, even a level of basic trust is no longer present. The latter causes all government actions to be approached with suspicion. Even well-intended actions of governments can be perceived as malicious (De Valle & Six, 2014) and encounter resistance. Surprisingly, trust and distrust can co-exist at the same time (Lewicki et al., 1998). While reading news online, citizens undergo many positive experiences resulting in trust (e.g., a behind-the-story section describing why and how the article was written) and negative experiences might result in distrust (e.g., online pop-ups). In such interactions, both trust and distrust are reinforced by different elements. For one person, this can result in higher trust, whereas for another person to more distrust.

Studying distrust in governments is important because it allows us to avoid its potential negative consequences. Early research on COVID-19 has revealed that many governments have struggled to enforce their directives due to distrust among people about public authority and law enforcement (Baniamin et al., 2020). During epidemics and pandemics, people may produce different understandings of disease and may be skeptical about government directives and actions. In contrast, studies about epidemics and pandemics have frequently investigated the drivers of public trust and search for a series of "fixes" to remediate trust (Velan et al., 2013; Holroyd et al., 2020). Such an approach has led to an excessive focus on trusting citizens and what makes them trustful while neglecting distrusting citizens and what makes them distrustful.

Although there has been a body of literature about public trust in the relationship with government through digital technologies, there is no research analyzing trust and distrust in pandemic situations. The literature often captures trust in this relationship or the reflections of trust and distrust separately, resulting in scattered knowledge. This study aims to fill this gap in the literature with a presentation of insights from the systematic literature review (SLR) through the PRISMA method suggested by Moher et al. (2009).

The SLR methodology rigorously reviews and synthesizes the research outcomes through aggregating knowledge about a particular subject or research questions

(Kitchenham et al., 2010; Oliveira et al., 2014). Although extensive research has been carried out on trust in governments during pandemics, there is no overview of factors affecting distrust and the differences between these factors and their impact on public trust. Research mostly captures specific cases or the two concepts separately. The SLR brings this literature together and provides an overview to allow researchers, policymakers, and stakeholders to explore the commonalities and divergences so that policies for enhancing effective crisis management during pandemics can be adopted.

The SLR will include a selection of peer-reviewed articles on the previous pandemic periods and COVID-19. The study screens the articles that are directly related to trust and distrust issues as concepts involving Internet exchange relationships between citizens and public authorities in pandemic situations. Next, the chapter investigates whether and how factors influencing public distrust in digital government during pandemic situations are distinct from those affecting trust.

The following sections are structured as follows: In Sect. 2, the background of the discussion of trust and distrust in the interaction between governments and citizens during pandemics is presented to explain why studying distinctive factors triggering the oscillation between trust and distrust is important. Section 3 presents a detailed description of how the SLR was conducted. Section 4 indicates the first analysis of the findings obtained from the selected articles of the SLR in an integrated approach to factors affecting trust and distrust in government during pandemics. Section 5 provides a discussion of the results from the review, and in Sect. 6, conclusions are drawn and suggestions given for future research.

## 1.2 Background

The SARS-CoV2 novel coronavirus (COVID-19) has created a traumatic change in life and livelihoods around the globe and become a challenging process for states to test their ability to make and effectively implement decisions (Hartley & Jarvis, 2020). After the declaration of a pandemic by the World Health Organization (WHO) on 11 March 2020, many countries have faced an unprecedented demand for interaction and cooperation with the public in preventive measures (Gesser-Edelsburg et al., 2020). In this period, citizens frequently needed new and reliable information, guidance, and leadership of governments. This expectation has presented the importance of trust between governors and governed once again during the pandemic.

The literature on trust in the interaction between governments and citizens during pandemics defines trust as the public perception that governments tend to protect people and serve public interests (Velan et al., 2013; Holroyd et al., 2020; Gopichandran et al., 2020; Henderson et al., 2020). Governments are expected to deal fairly with all parts of society (Krause et al., 2020). During pandemics, it is hard to fairly allocate the costs of the crisis and its remedies (Klenk et al., 2020). Due to the limited interaction between people, the digital intermediaries provide

information about the process and affect the public trust. In these circumstances, trust emerges if people believe that information is reliable (Nutbeam, 2020) and coming from reliable sources (McNeill et al., 2016). How people can perceive and respond to the situation depends on how the risk information is from a trusted source (Siegrist & Zingg, 2014).

Distrust results in skepticism that the authorities care about what is politically expedient instead of the right action (Baum et al., 2009). Distrusting people concern that the existing system is most probably biased in favor of government officials (Silva et al., 2012) and the public authorities serve their benefits or ulterior interests (Velan et al., 2013; McNeill et al., 2016). In some cases, distrust-driven responses of the people to pandemics can be rooted in disquiet, hostility, and lack of faith in the government to do the right thing (Hartley & Jarvis, 2020). The unexpected and extreme uncertainties like the outbreak of COVID-19 require distinctive management skills than the normal times. The unusual, atypical crisis may cause public suspicion about both institutions and officials' motives or competence in managing pandemics (Bangerter et al., 2012; Gesser-Edelsburg et al., 2020). The lack of public perception that individuals and institutions are knowledgeable and expert may result in public trust deterioration (Freimuth et al., 2014).

The COVID-19 crisis has indicated the importance of discussing the oscillation between trust and distrust in digital government since information and communication technologies (ICT) have played a prominent role in the interaction between governors and governed. Not only have digital technologies been the main source of information and communication, but they also have been used as an enabler and a part of each task force that has considered citizens at the center (UCLG, 2020). Governments have stressed earning the trust of citizens in the application of digital technologies since they have been the key player in alleviating the fatal effects of this critical juncture.

In public administration (PA) literature, studies have been similarly concentrated on the factors affecting trust in governments with the premise that trust and distrust are opposites of the same variable and that the same factors are responsible for trust and distrust (De Valle & Six, 2014). However, there has been an increasing consensus that distrust is not merely the opposite of trust (Sitkin & Roth, 1993; Lewicki et al., 1998; Saunders & Thornhill, 2004). Consequently, the underlying factors affecting trust and distrust, especially during unexpected uncertainties, are not necessarily similar. Moreover, to distrust, the government can sometimes be rational (Hardin, 2002) since it implies the increased knowledge about the government and guarantees control (Kim, 2005) while the routine trust can be naïve (De Valle & Six, 2014). Research on pandemics suggests that the government's routine trust may result in underestimating risks and people's reduced compliance with the measures against the pandemic (Wong & Jensen, 2020). Therefore, identifying the sources of distrust in crisis management is important because it helps the governments controlling their undesirable consequences while adopting policies for enhancing compliance with the government actions.

### 1.3 Methodology

Systematic literature review (SLR) is important to synthesize the results of studies on the same or similar subjects in an integrated way (Torraco, 2005). SLR enables to limit the subject in research by methodological analysis and synthesis of the literature and providing a firm foundation to the topic and selection criteria for the research that ultimately shows the research has a contribution to the existing body of knowledge (Levy & Ellis, 2006).

Accordingly, the study screens the articles based on the oscillation between trust and distrust involving Internet exchange relationships between citizens and public authorities in pandemic situations. The following questions guided the SLR:

1. What are the factors that can influence public trust in digital government during pandemic situations?
2. What are the factors that can influence public distrust in digital government during pandemic situations?

We searched for papers indexed by Web of Science (WoS), Scopus, and Digital Government Reference Library (DGRL). We employed Boolean expressions for identifying the target articles using “public trust” as the main concept and combining it with “pandemic,” “digital,” “public health,” “government,” and “social media” keywords in “topic” (Table 1). The search combining keywords of “public trust,” “pandemic,” and “e-government” found no records. Since the DGRL does not allow different combinations in topic-related search, the index was examined by using “public trust” and “pandemic” keywords. The research found no relevant record, so the search was made by using only “pandemic” and the analysis presented five papers. The SLR included journal articles, conference papers, book chapters, editorial notes, and reports written in English and can be openly accessed. The search based on the keyword combinations was further narrowed by excluding papers appearing duplicated on the indexes and including the ones discussing public trust. A total of 38 papers were selected as a result of the first step.

The first analysis was conducted in April 2020. Due to the continuous increase in the number of papers related to pandemics, the search was reconducted in October 2020 based on the same keyword combinations to include up-to-date studies. The

**Table 1** Selected papers for the SLR

Keyword iterations	WoS	Scopus	DGRL
(“public trust”) AND (“pandemic”)	35	50	5
(“public trust”) AND (“pandemic”) AND (“digital”)	2	1	
(“public trust”) AND (“pandemic”) AND (“factors”)	5	11	
(“public trust”) AND (“public health”) AND (“pandemic”)	12	26	
(“public trust”) AND (“pandemic”) AND (“government”)	14	17	
(“public trust”) AND (“social media”) AND (“pandemic”)	2	7	
Total (after the second analysis eliminating duplication)	68		
Total (after research questions-based analysis)	<b>34</b>		

second analysis presented 68 papers (after eliminating duplication) responding to the topic-related keyword search.

To limit the scope of the research, we filtered the initial group of 68 papers based on the contribution to the research questions. After having filtered the papers, 34 papers were found to directly contribute to the discussion of the oscillation between trust and distrust in digital government during pandemic situations. The main limitation of the methodology is its dependence on how the reviewed papers present the narrative behind the particular government stance on managing pandemics and the response of the citizens. We had to assume that the articles reviewed have reported all relevant information about the case. A second limitation, there is ever-growing literature on pandemics due to the ongoing COVID-19 situation. Every new study can present unique discoveries in the issue that may result in missing the significant factors. Finally, the generalizability of results to all countries should be done with. Although the factors and the respective contexts are obtained from the literature, the context might play a role and additional insights might be required for the analysis of particular circumstances.

## 1.4 Findings

In total, 34 papers using our SLR protocol were selected and analyzed in detail. The studies mostly focus on trust between the citizens and public authorities at times of crisis. Although there is a striking lack of literature on distrust during pandemics, the analysis provides important factors that create underlying distrust. In total 20 papers introduced a definition of trust and ten papers included a definition of distrust. The studies, including a definition of trust, did not include the concept of distrust explicitly. The concepts of trust and distrust were viewed as related. The literature provided a wide range of factors (see Appendix for the full list). The 29 factors were found in five different contexts: health-related, administrative, political, economic, media/social media. Nine factors were identified in the context of health-related, 11 factors originate from the administrative context, five factors from the political context, two factors from the economic context, and two factors were found in the context of media/social media.

In the health-related context, “confidence in healthcare systems” is the most referred factor determining public trust in the management of pandemics. Based on the administrative context, the studies mostly focus on “public communication” while “the lack of scientific information/misinformation” has the greatest significance in the political context. The articles assign “national economy” heavier importance in the economic context and “media content” is the most weighted factor in the context of media/social media. Figure 1 visualizes the frequency of factors depending on contexts. Four contexts and factors which reflect a particular context will be discussed hereafter.



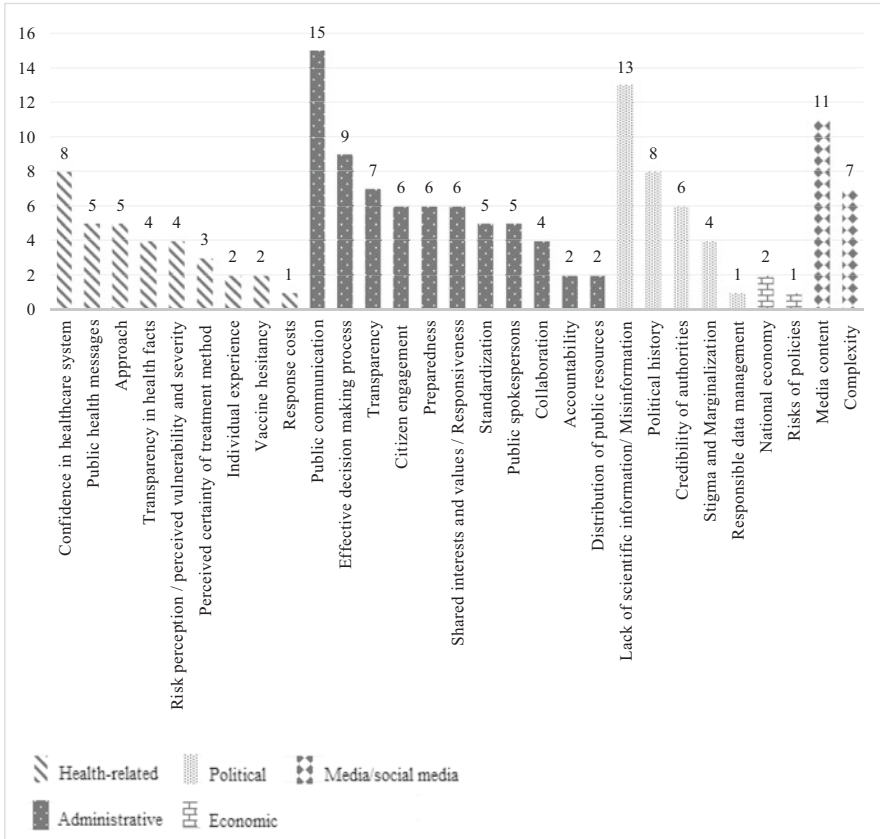


Fig. 1 Frequency of contextual factors affecting trust and distrust

### 1.4.1 Health-Related Factors

The initial analysis explored nine factors affecting public trust and distrust related to health issues during pandemics. “Confidence in healthcare systems” emerged in eight papers, mostly defined as the public perception that the current health system had the adequate capacity, ability, and performance to respond effectively to a pandemic (Henderson et al., 2020; Freimuth et al., 2014; Silva et al., 2012) and public motivation to accept the public health interventions and cooperate with them (Gopichandran et al., 2020; Bangerter et al., 2012; Doshi, 2011). Citizens’ past experiences in health care connect health-related factors and political ones that both health care professionals and government authorities need to pay attention to regaining people’s trust during pandemics (Freimuth et al., 2014). The second most frequent health-related factor (5) in the SLR is “public health messages” referring to tailoring all health messages in an appropriate tone for all relevant audiences

(Retzlaff, 2020) so that people would be provided clear and consistent messages and not seek alternative sources for information (Nutbeam, 2020).

Five papers focus on “approach” as a significant variable as a way to responding to pandemic influenza (Tapia, 2020; Doshi, 2011). Trust in citizens’ interaction with governments during pandemics depends on whether the health policies, interventions, and medical treatments are risk-based/evidence-based or scientific/nonscientific (Tapia, 2020)—such as disinfecting people walking through tunnels (Gopichandran et al., 2020). “Transparency in health facts” is used as a variable by four papers (Wong & Jensen, 2020).

Three papers identify “perceived certainty of treatment method” (Singh & Ravinetto, 2020; McNeill et al., 2016), and four papers employ “risk perception/perceived vulnerability and severity” for analyzing variables of the trust-oriented relationship between citizens and governments (Siegrist & Zingg, 2014; Chathukulam & Tharamangalam, 2020). “Vaccine hesitancy” referred to resistance or acceptance of vaccination, is mentioned in two papers (Puri et al., 2020; Sears et al., 2020). Three papers consider concepts related to “individual experience”—such as direct involvement with the pandemic (Devine et al., 2020) or “response costs”—such as side effects or time costs like an inconvenience (McNeill et al., 2016).

The SLR provided a diverse set of concepts grouped into nine factors in the context of health-related discussions. The health-related aspects mostly derive from the individual perceptions based on people’s experiences with the health system or personal risk judgments. The review indicated that the health-related factors cannot be regarded as completely heterogeneous because one factor can trigger the impact of another on public trust. For example, if the health professionals adopt a scientific approach to interventions for infection control, citizens can feel more confident in health professionals.

### **1.4.2 Administrative Factors**

The papers implied 11 administrative factors affecting enhancing trust or reducing distrust during infectious disease outbreaks. “Public communication” (15) and “effective decision-making process” (9) are the two most frequent factors in the relevant literature. Seven papers confirm the significance of “transparency” as being open when things go wrong (Henderson et al., 2020; Balog-Way & McComas, 2020). “Citizen engagement”—citizens’ feeling that their voice counts in the policy-design (Baum et al., 2009) and “preparedness”—educated and knowledgeable experts and institutions (Johnson & Goronga, 2020) have equal weight in administrative factors that each is discussed in six papers as the underlying factors explaining trust and distrust of citizens.

The researchers believe that “standardization” in guidelines, protocols, and procedures emerges as an important factor that the governments need to address in a time of pandemic (Sheikh & Baig, 2020; Ienca & Vayena, 2020). Six papers find

“shared interests/values” and “responsiveness” (prioritizing public values and experiences; considering their legitimate concerns) as necessary to improve trust-based interaction between citizens and public authorities during crises (Silva et al., 2012; Chathukulam & Tharamangalam, 2020). “Public spokespersons” are mentioned as a variable in five papers that variety in assigned spokespersons (Siegrist & Zingg, 2014) or reliability of officials (Retzlaff, 2020) increases its importance in managing pandemics. Four papers emphasize “collaboration” among stakeholders, especially with the community (Chapple, 2020). “Accountability” or “distribution of public resources” (such as equal access to resources) attracts the attention of four papers as important factors (Baker et al., 2020; Ezeibe et al., 2020; Silva et al., 2012).

The review revealed the higher importance of the administrative factors to build the trust of citizens and make sure that they can rely on their government’s administrative skills during pandemics. Although a pandemic is a health-related issue at first glance, the SLR proved that it is more likely to test the effectiveness of governments (Wong & Jensen, 2020). As the SLR indicates, public trust is such a complicated concept that factors affecting administrative success in building and sustaining it cannot be reduced to a simple conceptualization.

### ***1.4.3 Political Factors***

The components obtained from the articles are grouped under five factors in the context of politics. “Lack of scientific information/misinformation” appears in the 13 papers. The declaration of a pandemic in the world caused panic and fear (Sell et al., 2018) in citizens. In addition, the disclosure of the presence of asymptomatic cases increased the fear of citizens (Whembolua & Tshiswaka, 2020). Conspiracy theories (Sears et al., 2020) and misinformation (Nutbeam, 2020; Sears et al., 2020; Singh & Ravinetto, 2020; Puri et al., 2020) are other prominent components. Governments’ lack of guidance; infrastructure unpreparedness for epidemic and similar past crises followed by their efforts to hide this situation from the public and the inadequate transfer of information to the public in a correct manner (Velan et al., 2013; Baum et al., 2009) have caused citizens to turn to alternative information sources (Whembolua & Tshiswaka, 2020; Sell et al., 2018). Citizens expect public agents and institutions to be transparent in information strategy (Silva et al., 2012; Ienca & Vayena, 2020; Siegrist & Zingg, 2014). Neglecting open communication by public officials for avoiding information pollution or enhancing public health struggles (Holroyd et al., 2020; Sell et al., 2018) and constructing discourses in a way that creates polarization may distort knowledge and result in public distrust.

The second frequent factor in this category is “political history” that eight papers dealt with the past experiences of countries and citizens with similar crises. Successes and failures in a time of infectious disease outbreaks (Gopichandran et al., 2020), the prevalence of political uncertainty (Gesser-Edelsburg et al., 2020), and intense feelings of this uncertainty during pandemics (Henderson et al., 2020) may trigger anxiety and concerns of citizens. The political history of the

government is related to other political factors such as includes individual narratives (Claude & Hawkes, 2020; Chapple, 2020), community memories (Larson et al., 2019)—also called the political memory of the society, governments’ abilities to derive lessons from similar past experiences (Gopichandran et al., 2020; Johnson & Goronga, 2020) and the experience of political corruption (Ezeibe et al., 2020).

“Credibility of authorities” is another influential factor mentioned in six articles. The current distrust of political authorities (Claude & Hawkes, 2020; Siegrist & Zingg, 2014) may cause the public to feel in a more chaotic situation in times of crisis. The source of the weak public belief that the government will take the necessary interventions during the pandemic period is the ongoing distrust. Keeping promises and building a reputation (Henderson et al., 2020) make governments politically strong and increase trust in crisis governance. Leadership is a significant factor that the trust-based relationship between citizens and governments is improved through not only political leadership but also assigning people (i.e., opinion leaders) who are trusted in community networks (Johnson & Goronga, 2020).

Although the review specified five main factors in the political context, the line between the factors is hard to discern. For example, the lack of information or misinformation results in the incorrect presentation of data and interrupting timely delivery (Ienca & Vayena, 2020). Aggressive rhetoric by political leaders marginalizing particular groups (Johnson & Goronga, 2020; Chapple, 2020) and stigmatization—such as putting stickers on the doors of patients (Gopichandran et al., 2020) pique citizens’ concerns about the possibility of the recurrence of old problems in the country, thus erode public trust. Political factors can be associated with administrative or media/social media; however, they need to be evaluated under a separate context to investigate the political foundations in the background for particular cases.

#### ***1.4.4 Economic Factors***

Only two economic factors were identified. These are the “national economy” mentioned in two articles and “risk of policies” discussed in one article. Chathukulam and Tharamangalam (2020) focus on nationwide poverty and corruption, while Chapple (2020) cautions governments that the low investment in public health has a negative effect on public trust. The review indicated that government policies favoring preventative measures, such as social isolation and social distancing, can overlook economic risks both for the country and for the individual (Henderson et al., 2020). Governments must balance competing risks when estimating the cumulative risk of pandemics for public trust.

### ***1.4.5 Factors Related to Media/Social Media***

The SLR provided two main factors in the context of media/social media: “media content” and “complexity.” Components related to “media content” (such as false narratives or content moderation) are mentioned in 11 studies. Content moderation—removing some sources (Baker et al., 2020); biased media hype, and false narratives driven by social media without any scientific evidence (Larson et al., 2019) may erode public trust. Recontextualization that the information sources reproduce the information in a different context resulting in a change of the meaning, and the perception of the original message (McNeill et al., 2016) is one of the key factors affecting the direction of the oscillation between trust and distrust. Propaganda and intense exposure by media cause the higher involvement of lay people in the process that they may confront the measures dilemma (Velan et al., 2013). Open and transparent communication in this context aims at the words used, the flow of information, and avoiding unnecessary sensationalism (Gopichandran et al., 2020). The control of misinformation to prevent conspiracy theories (Sears et al., 2020) and ideological isolation (Puri et al., 2020) are considered as significant variables to build trust during pandemics.

Seven papers focus on variables connected with “complexity” referring to being exposed to excessive and complicated information (Tapia, 2020; Holroyd et al., 2020). Digital platforms become the main communication channel during emergency situations. Laypeople, therefore, face more information than they can process (Siegrist & Zingg, 2014). Intense exposure by media, coincided with exposure to contradictory messages from key players, increase the rate of controversy and criticism (Velan et al., 2013), fear of the unknown (Sell et al., 2018), and public speculation (Tapia, 2020).

As observed in previous contexts, factors related to media and social media are intertwined with each other. How these factors are perceived and used to manage times of crisis determine whether the interaction between citizens and government is trust-based or distrust-based. The complex nature of the concepts complicates to introduce distinguishing factors influencing trust and distrust during pandemics.

## **1.5 Impacts of Trust and Distrust on Citizen-Government Interaction**

The review indicated that dealing with public trust and distrust has become more prominent for effective and efficient risk management. Although public trust is a desirable outcome in public administration, the SLR showed that trust and distrust can be a double-edged sword during pandemics (Wong & Jensen, 2020). Pandemics are unexpected uncertainties that governments can be caught unprepared for a health emergency and crisis management in the political-administrative context. Many authorities have a lack of ethical and pragmatic principles and strategies that

lead the governments to appear incapable of formulating effective responses and recommendations (Claude & Hawkes, 2020) and serving the interests of the public (Henderson et al., 2020). Governments must develop clear protocols and procedures to follow standardized measures so that they can guarantee public trust.

Based on the analysis, the research on citizen-government interaction in a time of health emergency focused on enhancing public trust rather than investigating preceding causes of distrust. However, pandemic narratives reinforce that effective management of the citizen-government interaction requires a comprehensive analysis of public distrust. Even the early researches on COVID-19 has revealed that many governments had difficulties in promoting citizen cooperation and compliance due to distrust among people about public authority and their actions (Baniamin et al., 2020). The existing gap relating to the distinguishing factors for avoiding distrust may not be discussed extensively with the findings of this SLR. The findings presented a wide range of factors that each needs to be examined in its context over a given case.

Outbreaks of infectious diseases occasionally involve parties who trust and distrust each other at the same time. For example, citizens and governments have to trust or feel confidence in each other for mutual support and cooperation against a pandemic, while at the same time distrusting each other's decisions and actions because each believes that the other give priority to its own interests. "Distrusting-compliers" and "trusting-non-compliers" confirm this outcome. In the first scenario, citizens can think that government officials are trying to do politically expedient to protect themselves instead of what is right to do despite their motivation for public education and opportunities for public input in policy decisions (Baum et al., 2009). On the other hand, even people trusting the credibility of the authorities did not follow the H1N1 vaccination recommendation (Velan et al., 2013). Therefore, concepts related to distrust can be expected as separate from the ones related to trust during pandemics.

The review shows that factors affecting trust and distrust may overlap with one another. Direct experience with the pandemic is identified as the predictor of both trust and distrust. On the one hand, people who received proper and pleasing treatment can be satisfied with the government's performance and their trust level may increase (Freimuth et al., 2014). On the other hand, suffering from infection may cause dissatisfaction in governments' responses (Devine et al., 2020) and finally result in distrust in the relationship between parties. The complexity can be solved through equity in distributing public health containment measures (Chapple, 2020) and public resources (Silva et al., 2012; Sheikh & Baig, 2020).

Moreover, some factors can influence each other that they must be interpreted in the light of other factors. Contexts of government actions and use of media/social media are linked to one another because the latter can manipulate the former. The oscillation between two dispositions regarding governments' stance and actions related to preventative health measures depends on the way how these actions are reflected by media and social media channels (Holroyd et al., 2020). Thus, public officials and institutions must distribute information, consistent and certain

messages through their direct channels and social media (Tapia, 2020; Holroyd et al., 2020; Nutbeam, 2020).

Although some factors are attributed to the trust in citizen interaction with electronic government, they can drive distrust for others. For example, citizens expect their governments to make planned and fast decisions (Nutbeam, 2020), based on solid risk assessments (Singh & Ravinetto, 2020). Digital technologies have a vital role in creating effective interaction among stakeholders, including lay people (as content providers and users), that provide an effective decision-making process during pandemics. Most papers consider digital technologies as fundamental players to overcome these crises through cooperation with the least possible damage (Wong & Jensen, 2020; Sell et al., 2018; Ienca & Vayena, 2020). However, digital technologies may present emerging challenges for health policy and privacy, such as collection and processing of data by private employers or identification of people who may have been exposed to the virus and may distort citizens and fuel distrust (Ienca & Vayena, 2020). Responsible data collection and usage and justification of data processing based on public-health objectives have an important role in enhancing trust while avoiding distrust.

Although the SLR may not compromise the generalizability of the findings, it allows a fruitful discussion for understanding context-specific factors. Based on these factors, this research offers some conclusions and implications for policy, practice and research that are described in Table 2.

## 1.6 Conclusion

The studies about epidemics and pandemics have an excessive focus on trusting citizens and the reasons behind trusted interactions rather than distrusting citizens and what makes them distrustful. This study aimed to fill this gap in the literature relating to the distinction between factors influencing public distrust during pandemics from those affecting trust.

The SLR reveals that the literature has remained focused mostly on the degree of trust. However, the citizens with a low level of trust still have the basic attitude of trust toward governments. Therefore, governments can help foster citizens' trust through effective policy-making, such as being responsive to the publics' experiences and values or adopting a different approach to pandemics than annual, seasonal influenza. On the other hand, distrusted interactions have no longer include a basic trust that even well-intended government actions are perceived with suspicion.

Even in some cases, trust and distrust can coexist at the same time. Trusting-non-compliers and distrusting-compliers prove the coexistence that citizens can act against their basic attitude of trust or distrust. Thus, trust and distrust need to be handled in a separate way instead of a continuum. Trust deficit past experiences in previous pandemics have emerged as a striking factor to explain the existing distrust in the citizen–government interaction in case of health emergencies. Similar experiences may remind community memories prompting anxiety, fear, or panic.

**Table 2** Policy implications for trusting/distrusting citizens–government interactions during pandemics

Health-related	Health-related factors cannot be regarded as completely heterogeneous because one factor can trigger the impact of another on public trust.
	Developing clear protocols and procedures and following standardized measures
	Equity in distributing public health containment measures and public resources
	Adopting a scientific approach
Administrative	Adopting a different approach to pandemics than annual, seasonal influenza
	Assigning knowledgeable and expert individuals and institutions
	Designing more balanced interventions
	Responsible data collection and usage and justification of data processing based on public-health objectives
	Effective communication and transparency
	Collaborative decision-making through empathy and community ownership
	Improving distinctive management skills than the normal times because of the unexpected and extreme uncertainties
Political	Being responsive to the publics’ experiences and values
	Balancing the levels of trust and distrust during pandemics
	Reconsideration of trust and distrust as separate constructs to distinguish acute and chronic problems
	Although there are many versions of the political steps taken during the pandemic period, the determining factor is the political background that shapes the discourses.
Economic	Being aware of the risk of overlooking economic risks of preventive measures both for the country and for the individual
	Balancing competing risks when estimating the cumulative risk of pandemics
	Being economically prepared in advance
Media/social media	Distribution of information with consistent and certain messages through public institutions’ and officials’ own direct channels and social media
	Being aware that pandemics are not only about risk and public health management; but also image building

Governments must search for the roots of distrust originating before the outbreak of an infectious disease.

Based on the findings of the SLR, trust-oriented relationships between citizens and governments during pandemics can be both beneficial and problematic. A high level of trust in governments may result in the underestimation of risks and emergencies. This may result in the need for stricter institutional enforcement and more severe government measures that, in turn, may increase the level of distrust. Thus, the level of trust and distrust must be balanced during pandemics through effective communication and transparent and scientific information sharing.

Although each crisis has its own unique characteristics depending on the country-specific conditions, this analysis indicates that digital interactions during pandemics should be viewed from both a trust-oriented and distrust-oriented perspective.



Governments should derive lessons learned from similar experiences in the past so that they can invest in collaborative decision-making through empathy and community ownership instead of imposing interventions on people.

It is challenging for governments that balance between trust and distrust cannot be provided only by considering health-related concepts. The SLR demonstrates that the creation of a mutual trust environment during pandemics require more than health-based analysis since the administrative and political factors also play an essential role in crisis management. There are three main strategies that should be followed in terms of improving a balanced approach to the question of trust in digital government during pandemics: risk information, vigilance and caution, and discursive strategies.

The need for information about pandemic-related issues such as the rate of spread of virus, the damage it causes or reliability of protective measures has become the principal focal point. It has been more essential than ever for an individual to feel safe based on accurate information. Facing more information than that laypeople can process and intense exposure result in public speculation and bombardment of conflicting or inconsistent information. Therefore, governments should form policies to develop transparent, collaborative, interactive, responsive and accountable digital channels reach their audience.

The SLR implies the difference between digitalization and digital government. The spread of digital intermediaries alone are not enough to establish trust-based relations. Despite the digitalization-induced transformation in public administration, COVID-19 pandemic has proved that digital government or digital governance, especially during unexpected crisis, still demands collective learning process in search for seeking alternative practices to solve crises and enhance communities' preparedness to play a visible role in response to crisis. This learning process can be trustworthy through effective digital public communication and public decision-making process. Governments should support open and transparent communication based on consistent messages, dialogue with the targeted audience and clear and effective information. Encouraging community engagement in planning decisions coupled with the investment in community ownership and participation instead of imposing interventions on people will help government to promote community-based, connected and credible digital governance both in ordinary and uncertain times.

This paper contributes to filling a gap in the literature that not only trust but also distrust should be considered seriously as a concept mediating citizens' interaction with the government during pandemics. The SLR provides an integrated approach to common and distinguished factors affecting trust and distrust. The findings can be used for the management of both ongoing uncertainties during the COVID-19 pandemic and similar future experiences; thus, governments will be prepared to design more balanced interventions.

## Appendix

Context	Factors	<i>N</i>	Components	References
Health-related	Approach	5	Risk-based or evidence-based approach and medical treatments; scientific and nonscientific interventions for infection control	Siegrist and Zingg (2014), Doshi (2011), Tapia (2020), Gopichandran et al. (2020), Velan et al. (2013)
	Perceived certainty of treatment method	3	Use of trial and error method in treatment; people's perception about efficacy of medication; the death of human subjects	Singh and Ravinetto (2020), McNeill et al. (2016), Sears et al. (2020)
	Vaccine hesitancy	2	Resistance or acceptance of vaccination; questioning the vaccination strategy; ordered pre-pandemic vaccines before the pandemic began	Puri et al. (2020), Sears et al. (2020)
	Confidence in healthcare system	8	Confidence in healthcare professionals; adoption of ethical and pragmatic principles; offering routine primary care services and building resilient health system; experience of discrimination in health care in the past; cynicism about health systems' current capacity; equity in distributing public health containment measures; independence of medical experts from governments; independence of scientific studies, country contexts	Claude and Hawkes (2020), Gopichandran et al. (2020), Freimuth et al. (2014), Silva et al. (2012), Chapple (2020), Henderson et al. (2020), Doshi (2011), Bangerter et al. (2012)
	Public health messages	5	Tailoring health messages; crafting all messages carefully for both internal and external audiences;	Henderson et al. (2020), Retzlaff (2020), Nutbeam (2020), Freimuth et al. (2014), Chapple (2020)
	Transparency in health facts	4	The transparent reporting of uncertainty information; on-time alerts, completeness, clarity of information in alerts and clear recommendations; suppressing information on the number of cases and deaths	Retzlaff (2020), Wong and Jensen (2020), Holroyd et al. (2020), Gopichandran et al. (2020)

Context	Factors	<i>N</i>	Components	References
	Individual experience	2	Direct experience with the pandemic; direct involvement with the issue	Freimuth et al. (2014), Devine et al. (2020)
	Risk perception/perceived vulnerability and severity	4	The level of embracing the identity of being “at risk”; false sense of security in the human mind; individual susceptibility or vulnerability to the hazard, judgments about the overall severity or seriousness of a hazard	McNeill et al. (2016), Siegrist and Zingg (2014), Chathukulam and Tharamangalam (2020), Hartley and Jarvis (2020)
	Response costs	1	Response costs of the medication (side effects, affective costs like fear of needles and time costs like inconvenience)	McNeill et al. (2016)
Administrative	Public communication	16	C2C communication; effective and appropriate communication; open and transparent communication; stating uncertainty; consistent messages; dialogue with the targeted audience without translators; clear and effective information and communication with the public in a timely manner; procedures and personnel to monitor social media and links with the public	Puri et al. (2020), Holroyd et al. (2020), Johnson and Goronga (2020), Silva et al. (2012), Tapia (2020), Gopichandran et al. (2020), Henderson et al. (2020), Retzlaff (2020), Nutbeam (2020), Gesser-Edelsburg et al. (2020), Freimuth et al. (2014), Wong and Jensen (2020), Sell et al. (2018), Balog-Way and McComas (2020), Hartley and Jarvis (2020)
	Public spokespersons	5	Using narratives and leveraging celebrities; reliability of officials and spokespersons; variety in assigned spokespersons; use of a diverse set of experts as communicators	Puri et al. (2020), Holroyd et al. (2020), Freimuth et al. (2014), Siegrist and Zingg (2014), Balog-Way and McComas (2020)
	Standardization	5	Adoption of ethical and pragmatic principles; lacking or unclear evidence-based guidelines; the lack of standardized measures; development of clear protocols and procedures; clarity of conditions for responsible data collection and processing at a global scale	Sheikh and Baig (2020), Tapia (2020), Doshi (2011), Henderson et al. (2020), Ienca and Vayena (2020)

Context	Factors	N	Components	References
	Preparedness	6	Seeking alternative practices to solve crises; unpreparedness; government officials' preparedness to play a visible role in the response; success in previous waves caused early relaxation; education of stakeholders and public; education of communities by public experts about realities, response plans, perceptions and concerns	Sheikh and Baig (2020), Whembolua and Tshiswaka (2020), Sell et al. (2018), Chathukulam and Tharamangalam (2020), Henderson et al. (2020), Johnson and Goronga (2020)
	Citizen engagement	6	Encouraging citizen engagement and participation; community engagement in planning decisions; investment in community ownership and participation instead of imposing interventions on people; encouraging citizens to comply with security measures; community-based surveillance, community-based quarantine, community policing; citizens' feeling disconnected, poorly informed or without a voice in designing policies	Gopichandran et al. (2020), Sell et al. (2018), Baum et al. (2009), Johnson and Goronga (2020), Baum et al. (2009), Ezeibe et al. (2020)
	Effective decision-making process	9	Planned and fast decision-making; required time for decision; empathy into decision-making; disagreement among public officials over a policy recommendation; leadership and coordination across a range of stakeholders; cooperation across multiple levels of government; solid risk assessment; government's stance	Nutbeam (2020), Velan et al. (2013), Johnson and Goronga (2020), Freimuth et al. (2014), Sell et al. (2018), Henderson et al. (2020), Singh and Ravinetto (2020), Wong and Jensen (2020), Balog-Way and McComas (2020)

Context	Factors	<i>N</i>	Components	References
	Collaboration	4	Collaboration with stakeholders; collaborative decision-making rather than imposing naked governmental authority; social mobilization; community capacity	Henderson et al. (2020), Chapple (2020), Johnson and Goronga (2020), Balog-Way and McComas (2020)
	Accountability	2	Public accountability	Silva et al. (2012), Ezeibe et al. (2020),
	Transparency	7	timely information about level of risk, communicating openly, timely and honestly with the public, substantiating claims, openness about what can be investigated and accountability when things go wrong, openness about scientific uncertainty;	Henderson et al. (2020), Baker et al. (2020), Ezeibe et al. (2020), Ienca and Vayena (2020), Holroyd et al. (2020), Siegrist and Zingg (2014), Balog-Way and McComas (2020)
	Distribution of public resources	2	Equity and fairness in the distribution of public resources; access to resources	Sheikh and Baig (2020), Silva et al. (2012)
	Shared interests and values/ Responsiveness	6	Prioritizing the public; shared values; responding to publics' values in policy-making; entitlement failure; identification of needs of different population groups; being sensitive to needs and experiences of the community; failing to address people's legitimate concerns	Henderson et al. (2020), Silva et al. (2012), Gopichandran et al. (2020), Chathukulam and Tharamangalam (2020), Johnson and Goronga (2020), Balog-Way and McComas (2020)
Political	Stigma and Marginalization	4	Gaining access to hard-to-reach or marginalized groups; fear of shame and stigmatization; need to avoid "othering" either victims or nonconformists	Johnson and Goronga (2020), Chapple (2020), Gopichandran et al. (2020), Balog-Way and McComas (2020)

Context	Factors	<i>N</i>	Components	References
	Political history	8	Past experiences; ongoing political uncertainty; historic experiences, personal narratives and community memories triggering past anxiety and concern; lessons learned from similar experiences in the past; political corruption	Claude and Hawkes (2020), Gopichandran et al. (2020), Gesser-Edelsburg et al. (2020), Larson et al. (2019), Johnson and Goronga (2020), Chapple (2020), Ezeibe et al. (2020), Hartley and Jarvis (2020)
	Credibility of authorities	6	Building the reputation and keeping promises; the existing level of trust in authorities; current distrust of governments and leaders; leadership	Henderson et al. (2020), Gesser-Edelsburg et al. (2020), Siegrist and Zingg (2014), Claude and Hawkes (2020), Johnson and Goronga (2020), Retzlaff (2020)
	Lack of scientific information/ Misinformation	13	Asymptomatic cases, misinformation about the virus; fear of the unknown, particularly when coupled with changing or conflicting information; conspiracy theories; being independent from political pressure and populism	Whembolua and Tshiswaka (2020), Puri et al. (2020), Sears et al. (2020), Singh and Ravinnetto (2020), Velan et al. (2013), Sell et al. (2018), Holroyd et al. (2020), Baum et al. (2009), Silva et al. (2012), Siegrist and Zingg (2014), Nutbeam (2020), Ienca and Vayena (2020), Balog-Way and McComas (2020)
	Responsible data management	1	Use of data and algorithms in a responsible manner, data-protection regulations and respect for privacy and confidentiality; data collection proportional to the seriousness of the public-health threat, limited to what is necessary to achieve a specific public-health objective, and scientifically justified	Ienca and Vayena (2020)
Economic	National economy	2	Nationwide poverty; corruption; low investment in public health	Chathukulam and Tharamangalam (2020), Chapple (2020)
	Risks of policies	1	Balancing competing risks by the government in implementing or lifting restrictions	Henderson et al. (2020)

Context	Factors	N	Components	References
Media/social media	Media content	11	Content moderation on social media; biased media hype; false narratives driven by social media; recontextualization; propaganda/intense exposure by media; open and transparent communication; misinformation; conspiracy theories; ideological isolation; social media strategy	Baker et al. (2020), Larson et al. (2019), McNeill et al. (2016), Velan et al. (2013), Gopichandran et al. (2020), Nutbeam (2020), Whembolua and Tshiswaka (2020), Puri et al. (2020), Sears et al. (2020), Singh and Ravinetto (2020), Hartley and Jarvis (2020)
	Complexity	7	Facing more information than that laypeople can process; intense exposure by media; message exposure; rate of controversy and criticism; media bombardment; receiving conflicting or inconsistent info; public speculation	Siegrist and Zingg (2014), Velan et al. (2013), Henderson et al. (2020), Sell et al. (2018), Holroyd et al. (2020), Tapia (2020), Hartley and Jarvis (2020)

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