The aftermath of pandemic data disclosure: Towards a data governance framework for equitable datacultures

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Abstract

This study examines how the South Korean government's data governance – the architecture of their data disclosure and discursive materials that legitimize its need for securing public health – shaped the datacultures of the pandemic. While important studies have been conducted on the legal and technical aspects of the Korean government's COVID-19 data disclosure, there is a lack of discussion surrounding the cultural dimension of their data governance. Against this backdrop, this study directs attention to the cultures enabled and encouraged by their COVID-19 data governance and the implications they have for the well-being and rights of citizens. Drawing upon critical data studies and surveillance studies literature that center culture in understanding the technical, this study addresses the following questions: 1) What kind of datacultures are encouraged and enabled by the government's data disclosure strategies? 2) What are their ethical implications for citizens' rights and well-being, in particular that of minoritized identities? 3) Lastly, what kind of data governance is required to manage data disclosure in ways that foster equitable datacultures? Through the findings, I identify three types of datacultures surrounding the government's data disclosure strategies: datacultures of collective right to know, datacultures of criminalization, and datacultures of speculation. These different manifestation of datacultures reveal that critical interventions into data governance of society needs to be made with an in-depth understanding about the cultural norms, values, and practices that are encouraged, reproduced, and legitimized through its operation, alongside its technical and legal challenges.

Keywords: data governance, tracking infrastructure, COVID-19, surveillance, equitable data culture

Introduction

The collection, sharing, and publication of data has been central to the South Korean government's COVID-19 response, supporting the popular characterization of COVID-19 as the first pandemic of our datafied society (Milan & Di Salvo, 2020). The government's big data driven COVID-19 Epidemiological Investigation Support System managed the nation's pandemic data in two major ways: 1) First, government authorities tracked the virus by collecting peoples' personal information by requesting data from credit card and telecommunication companies, made possible by the amended Infectious Disease Control and Prevention Act (IDCPA) (Park et al., 2020). 2) Second, they pseudonymized confirmed patients' data, mainly "demographics, infection information, and travel logs" (Jung et al., 2020, p. 2) and made the data available to the public through local governments' websites and the news media.

Despite there being high privacy risks associated with their COVID-19 reports, the government legitimized their tracking infrastructure by claiming to protect peoples' "right to know" about the pandemic by giving them access to data about the spread of the virus (J. J. Lee, 2022). Their data disclosure, purported to equip citizens with knowledge to protect themselves against the virus, has also introduced grave ethical concerns. Not only did the government have unprecedented access to peoples' data, but their tracking infrastructure also encouraged a culture of lateral surveillance (Andrejevic, 2006), in which citizens would police each other and engage in spreading rumors about suspected COVID-19 patients (Jung et al., 2020). The public's speculative engagement with the published COVID-19 data often relied on existing norms and stereotypes that marked certain bodies as more suspicious and warranting heightened surveillance than others (S. Kim et al. 2022).

Against this backdrop, this study examines how the government's data governance – the architecture of their data disclosure and discursive materials that legitimize its need for securing public health – shaped the datacultures of the pandemic. In referring to datacultures, this study draws upon the idea of "technocultures" (Brock, 2012) – the practices and imaginaries shaped by technological features and cultural values – and applies it to understand how data governance, together with cultural norms, shape peoples' ways of knowing about the pandemic and other fellow pandemic subjects. In addition, through a close reading of editorial commentaries and human rights organizations' critiques of government's COVID-19 data disclosure, this study looks at the ethical implications of pandemic datacultures on the rights and wellbeing of citizens, in particular that of minoritized identities.

While the Korean government no longer publicizes the location data of patients, this study will make important interventions by examining the ethical implications of their initial strategies and proposing alternatives to their data governance strategies for future health emergencies. In doing so, this study builds upon scholarship that explores the importance of understanding cultures alongside technical features and policies that underly technogovernance (Duguay et al. 2020; Gorwa, 2019; Lyon, 2017). While important studies have been conducted on examining the privacy harms of the Korean government's data governance through technical, legal perspectives (Jung et al., 2020; Park et al., 2020; You, 2020), more discussion is needed on the cultural dimension of their data governance.

Drawing upon critical data studies and surveillance studies literature that center culture in understanding the technical, this study addresses the following questions: 1) What kind of datacultures are encouraged and enabled by the government's data disclosure strategies? 2) What are their ethical implications for citizens' rights and well-being, in particular that of minoritized identities? 3) Lastly, what kind of data governance is required to manage data disclosure in ways that foster equitable datacultures? Through the findings, I identify three types of datacultures surrounding the government's data disclosure strategies: datacultures of collective right to know, datacultures of criminalization, and datacultures of speculation. These different manifestation of datacultures reveal that critical interventions into digital governance of society needs to be made with an in-depth understanding about the cultural norms, values, and practices that are encouraged, reproduced, and legitimized through its operation (Lyon, 2017), alongside its technical and legal challenges.

Background: The COVID-19 unforgiving data bank

In this section, I will present a brief background on why and how the disclosure of pandemic data became a central feature of the Korean government's COVID-19 tracking infrastructure. When the COVID-19 first hit South Korea, the Korean government had the legal infrastructure in place that would enable the government's health bodies to collect peoples' personal information, including demographic, location, and credit card data, protected under the Personal Information Protection Act (PIPA) in cases of national emergencies (Park et al. 2020).

Health authorities were able to collect patients' personal data by requesting telecommunication companies and credit card companies for access through the police. Not only were field epidemiological investigations officers given the power to enforce quarantine measures, but they were also given the authority to collect and report infected peoples' personal information without their consent if they deemed it necessary (Y. Kim, 2022). These changes were a part of the wider amendments to the nation's Infectious Disease and Control and Prevention Act (IDCPA), following the MERS outbreak in Korea, in which the then incumbent Park administration was criticized for not being transparent enough about the movement of the virus, leading to highest death rates outside of the Middle East (Y. Kim, 2022). Following these changes, the authorities' increased surveillance power over citizens became legitimized through the government's promise to be transparent about health communication and protect the citizens' "right to know" about the pandemic (You, 2020).

As a part of their quest to protect citizens' "right to know," the government implemented multiple channels of data collection, communication, and disclosure. One notable way they began informing the public has been through sending emergency text messages to Korean citizens' of COVID-19 cases around their location. As Y. Kim (2022) highlights, this indicated that the government not only had access to COVID-19 patients' data but data of all mobile devices in the vicinity of reported cases. These mobile emergency texts were seen as effective for its accessibility and reach. In addition to sending out emergency texts, each district in Korea published anonymized demographic information and travel histories of confirmed patients daily, which were also reported by the news media, which some scholars describe as essential in increasing public's risk perception (Yeon et al. 2022). By utilizing different communication channels, the government emphasized the importance of transparency in their communication about the virus and civic engagement, the citizens' adherence to the governments' social distancing measures and emergency alerts (Yeon et al. 2022).

While the Korean government's COVID-19 response received much global acclaim and attention for their initial swift response to the virus (Chan, 2020), the road to implementing data disclosure has been fraught with difficulties and challenges. For instance, since January 2020, there were reports on data leaks of COVID-19 data mismanaged by government bodies. Not only were there cases when public officers accidentally leaked official government report of COVID-19 online (J. S. Lee, 2020), there were also cases of them sharing non- anonymized COVID-19 patients' data to their families through the Korean messenger Kakao Talk (Kang, 2022). Another major concern has been the ways in which these collected data have been communicated to the public to police citizens into moral and deviant subjects of the pandemic (Y. Kim et al. 2021). For instance, the content of these emergency texts and publicized reports, which revealed anonymized but detailed and private information about patients, from their area of residence, age, gender, and travel histories, has enabled people to draw connections and make inferences about the faces behind the data, casting blame onto identified individuals as risking the health of the nation (N. Kim, 2020).

In response to human rights organizations' condemnation and requests to make changes to the government's data disclosure strategies, the government made a series of amendments. The first set of guidelines began in March. On March 14, 2020, the government made amendments do their location data reporting, with the advice of the National Human Rights Commission of Korea, to omit demographic identifiers that would enable people to trace the individuals and to shorten the timeline for the disclosed travel history (Oh et al. 2020). To mandate the changes, the Infectious Disease Prevention Act was amended to prevent the disclosure of information such as detailed information of the patient's residence, employment, "gender, age, and other information determined to be irrelevant to the prevention of infectious disease" (IDCPA, Article 34-2). Subsequent changes have been made in April and June, with guidelines on disclosing travel histories in ways that would make it difficult to identify the person and specific neighborhood. Changes included to not display the patients' movement over time, but to disclose the areas (anonymized if there were no close contacts at the place), the dates, and the disinfection status of the places to make it difficult to trace peoples' movement throughout the day and also to reduce stigma of the commercial areas they visited (Oh et al. 2020). However, not all local governments abided to these guidelines, and released sensitive demographic information of confirmed patients such as their gender, age, and the names of the commercial areas they visited.

While the government emphasized the importance of civic engagement in their COVID-19 health response, the engagement encouraged through their data disclosure has been driven by suspicion and hostility towards imagined immoral subjects of the pandemic. Throughout the course of the paper, I argue that the Korean government's data governance framework should broaden their conceptualization of civic engagement to one that focuses exclusively on peoples' adherence to government measures, to one that considers how citizens can intervene in the government's management of data in addition to how citizens can know through data in ways that do not harm other members of society.

Data as interpretive framework of the pandemic and pandemic bodies

During the pandemic, COVID-19 data, such as location data, has obtained the status of objectivity and neutrality, reflecting what Milan and Salvo (2020) describe as "unquestioning positivism" characterizing contemporary datafied societies. Hong (2020) defines this unquestioning positivism rampant in the era of big data as "honeymoon objectivity" in which we are programmed to believe that data will provide us a "bedrock of certainty" and a "genuine route to raw objective layer of the world around us" (p. 16). Instead of eradicating peoples' uncertainty about the social world, big data are "recessive objects" that "serve as catalysts for speculation and doubt" (Hong, 2020, p. 54). Applying Hong's (2020) critique of datafied knowledge, this study argues that speculation, suspicion, and uncertainty have become the governing interpretive lenses propagated through the reporting of COVDI-19 patients' travel histories in South Korea.

Critical data studies scholars have long argued that data are not static and neutral but are sociotechnical assemblages (Elish & boyd, 2017; Kitchin 2014) made at the intersection of the social and technical. According to this relational view, the use and deployment of data are neither neutral nor without an agenda (Bowker & Star, 2000; Finn, 2017), but are value laden interpretive lenses on how to view the social world. As interpretative building blocks strategically used to construct knowledge about reality (Carter & Egliston, 2021), data can have serious moral and political implications (Bowker & Star, 2000). As Kitchin (2014) aptly puts "data do not exist independently of the ideas, techniques, technologies, people and contexts that conceive, produce, process, manage, analyze and store them" (p. 8). While Kitchin (2014) explains the political agenda of data in the context of smart cities and sensor technologies, his observation is helpful in understanding how COVID-19 data released to the public are not mere data abstracted from real life but are a "selective sample" that are "framed within a thought system" (p. 9) that guide peoples' interpretation of the data and their relation to cultural, social, and political contexts.

Similarly, in the case of geolocation data, humanities geography scholars and critical data studies scholars emphasize the importance of a contextualized understanding of geolocation data and challenge the understanding of big data as detached from social life. In Zhang et al. (2021) study of geolocation data of the #StandingRock movement, the authors explore how location data became interpreted by multiple stakeholders of the event, acquiring value through their interpretations and needs. As such, data becomes readable and understandable as "information" only when they are interpreted in their respective contexts set by actors (Kallinikos, 2009). As Star and Ruhleder (1996) writes, data "sinks" into the social world, and acquire meaning through its interaction with actors, conventions, community practices, and societal structures.

Following the critical, contextualized, and hermeneutic understanding of location data, it can be said that the travel histories of COVID-19 patients becomes important identifiers and interpretations of bodies. To be more specific, location data comes to identify the body and inscribe meaning onto how that body is situated and perceived in the current health crisis. Unlike the Korean government's purported intention for making public the location data to serve citizens' understanding of the pandemic, location data publicized through multiple channels across the country, from emergency texts to news media, have become a tool for public shaming and surveilling of bodies that are deemed suspect. Data about the virus becomes data about bodies: Bodies interact with data as "companion-species" (Lupton, 2016) and are "becoming-with data" (Hultman & Lenz Taguchi, 2010, p. 538). While data do not determine bodies, existing data systems and value frameworks that rely on "historically couched data view of what people are" can reinforce and amplify the discrimination against people, and in particular marginalized populations (Kitchin, 2014). Noting the deleterious effects of data systems, Hoffmann (2018) has coined the term "data violence," an observation that can extend to how interpretation of data can cause harm to minoritized identities. In this study, I pay close attention to how the different stakeholders of the pandemic governance interpret the "human-data assemblage," fostering datacultures in which data violence become legitimized as a part of the country's quest to keep the nation safe.

Speculative surveillance and the marking of bodies

Across the globe, governments' datafication of the pandemic has been coupled with institutionalized surveillance, which was believed to promise "a modicum of certainty" (French & Monahan, 2020, p. 3) in what seemed to be a perpetual state of health insecurity. However, surveillance scholars Martin French and Torin Monahan (2020) argue that surveillance of the pandemic has produced new uncertainties, with there not being a clear institutional or scholarly consensus on what COVID-19 surveillance is and who or what it is targeting. Applying Hong's

(2020) idea of “speculative knowledge” and “recessive objects” produced by data technologies to surveillance of the pandemic, I explore how pandemic data produces “speculative surveillance,” the modes of social control driven by speculation and suspicion of bodies deemed suspect. Speculative surveillance thrives on our networked media landscape and interactive economy (Andrejevic, 2006), where watching over others (Trottier, 2012) is interwoven into the fabric of everyday online participatory cultures. Pertinent to this study is understanding how institutionally initiated pandemic surveillance penetrates the networked media landscape and interacts with participatory modes of surveillance.

To describe the mode of surveillance enabled by interactive technologies, Andrejevic (2006) introduces the idea of lateral surveillance, which is the non-transparent, asymmetrical surveillance of others on social media. Ordinary people act as “little brothers" by “keeping an eye on those around them” (Andrejevic, 2006, p. 397), which is conceived as an act of exercising their democratic citizenry. In a similar vein, Marwick (2012) introduces social surveillance, the “ongoing eavesdropping, investigation, gossip and inquiry that constitutes information gathering by people about their peers” (p. 382) normalized and enabled by the participatory affordances of social media. Marwick (2012) observes how social surveillance, and related endeavors such as “participatory surveillance” (Albrechtslund, 2008) are practices that depart from traditional forms of surveillance as they take place between ordinary citizens, rather than institutional bodies and individuals (Marwick, 2012). However, participatory modes of surveillance do not necessarily indicate a pluralization of control in society. In fact, people monitor others through the internalized gaze of the authorities, “invited to become spies” (Andrejevic, 2006, p. 406) of those who are potentially suspect.

In the context of Korea’s pandemic, the internalized gaze is not necessary that of the government, but that of the dominant norms, culture, and standards of morality, which has contributed to moralizing the pandemic (Y. Kim et al. 2021; J. J. Lee, 2022). The public, alongside the government and the news media, engaged in the policing of citizens to abide to COVID-19 measures to secure the health of the nation. However, these moral standards did not apply to all citizens equally, with minoritized members of - sexual minorities and ethnic minorities to name a few– seen as innately suspect and dangerous (Y. Kim et al. 2022). Building upon these studies that illuminate power as intrinsic to the act of surveillance, this study attends to power relations and marking of bodies powered by the government’s data disclosure and data’s penetration into participatory social media culture and the attention economy. This study pays attention to how the sharing of personal information, such as location data of infected individuals on news media and social media platforms, builds public suspicion and legitimizes institutional and social surveillance in the context of national health emergencies.

Methodology

To address the research questions, this study conducts a "walkthrough method" (Light et al., 2018) of the government's data disclosure features and strategies, supplemented by a qualitative discourse analysis of the discursive materials surrounding the government's data governance. To examine the government's data governance strategies, this study will collect public reports, briefings, and technical manuals on the government's data governance published by the Korean Disease Control Prevention Agency (KDCA), the Ministry of Health and Welfare (MoHW), and the Ministry of Interior and Safety (MoIS), the major agencies responsible for the country's pandemic technogovernance. Through the walkthrough method, this study examines the symbolic and discursive meanings of the technical and legal features of the government's data disclosure.

In addition, to examine the sociocultural implications of their data disclosure, this study conducts a qualitative analysis of the reports and blog posts by human rights organizations, including National Human Rights Commission of Korea and Korean Progressive Network, South Korean Human Rights network and news commentaries by major Korean news media including Joongang Daily, Chosun, Hankyoreh, Dongah, and Yonhap news. News commentaries published from January 1st, 2020 (Privacy implications began to be discussed actively in response to public's witch hunt of COVID-19 patients) to July 1st 2020 (news about government's data governance dwindled after they made amendments to their public reports) have been collected through Naver, South Korea's biggest platform, by utilizing keywords "COVID-19 data disclosure and human rights abuse," and "COVID-19 data disclosure and privacy invasion." 10 news articles for each month have been compiled, amounting to a total of 60 news articles. Through a qualitative analysis of these texts, this study looks at how they relate the government's data governance to democratic values and data rights, and how the discourses, alongside the government's data disclosure, seek to shape the datacultures of the pandemic.

Datacultures of collective right to know

In this section, I will examine the type of political culture and engagement fostered through the government's discursive presentation of their data disclosure strategies and mainstream news media's coverage of the privacy dilemmas. In their attempt to remedy the previous administration's failure to report swiftly on the MERS outbreak, the Moon administration forwarded information transparency as one of the main pillars to their COVID-19 tracking infrastructure (You, 2020), with information described as a public good (The Government of the Republic of Korea, 2020). Accordingly, the health institutions responsible for the COVID-19 Epidemiological Investigation Support System, mainly the Korean Disease Control and Prevention Agency (KDCA) and Ministry of Health and Welfare (MoHW), present data disclosure as a public service that espouses democratic principles, mainly information transparency and the public's right to know about the virus (KDCA, 2020). There are two major beliefs about data underlying their discursive construction of their tracking infrastructure: 1) That the travel histories of patients enable real time analysis of the movement of the virus and that 2) the data is a public good that can empower citizens with knowledge to navigate through the pandemic. By advancing these ideals about data in their public reports, manuals, and legal infrastructure, the government used COVID-19 data disclosure to express their determination to prioritize the collective health of the nation (Y. Kim, 2022).

News coverage on surveys and public discourse across news media comment sections also reveal that the public largely agreed to the government's swift publication of COVID-19 patients' data. According to a survey conducted by the Korean Environmental Preservation Association in April 2020 on 1000 young adults in South Korea, 88% of the survey respondents agreed that the travel history of COVID-19 patients should be published for the public's safety and right to know about the virus, with only 7.9% of the respondents replying that it is an infringement of peoples' privacy rights (YTN News, 2020a). When describing the public's interest achieved by the government's decision to disclose the travel histories, news articles utilized various key words including "public's right" and "collective right to know," adding to the discourse that citizens would be able to protect themselves from COVID-19 transmission through heightened awareness about the virus. While swift and frequent communication with the public is important, the ways of knowing about the pandemic, mainly the idea of the "collective right to know became heavily focused and fixated on the COVID-19 patients' personal data. During this process, COVID-19 patients anonymized personal data became treated as public good by citizens, in which their access to these sets of data became understood as a part of their right in the context of national emergencies. The right of citizens was upheld above the right of COVID-19 patients, whose duty to the nation and other fellow citizens preceded their data rights.

These sentiments were echoed most strongly when the government began to make changes to their COVID-19 reporting guidelines in response to the human rights organizations in the beginning of March (Oh et al. 2020). While there were many citizens that agreed to these changes, there were noticeably many others who opposed the changes, arguing that information about patients' location data was essential to securing the public's health (J. Kim, 2020). For instance, when the central government mandated local governments to eliminate specific location identifiers indicating the street and block of the COVID-19 case, local governments had to shield off numerous complaint calls asking the local governments to reinstate their previous reporting guidelines (Seo, 2020). Citizens demanded to know about detailed information about COVID-19 patients' travel histories; the COVID-19 patients were stripped off their privacy rights for the collective right to know.

While the government characterized their data disclosure as abiding to democratic principles of openness and transparency, ironically, the type of civic engagement and political culture that followed were antithesis to democratic civic engagement. Citizens' individual rights, such as their right to control their data and have their anonymity protected became eclipsed by citizen's' "collective right to know." While public access to information regarding health emergencies is essential, in the context of Korea's COVID-19 pandemic, the argument for "collective right to know" became weaponized as a way for citizens to peek into the lives other citizens and legitimize this act of surveillance as their civil right (J. J. Lee, 2022). According to this logic, data is treated as a "public good" that can be detached from the individual, once that individual is deemed as dangerous for the collective. These processes of data detachment can be dangerous, leading to the dehumanization and criminalization of the individual who is deemed as suspect. To make data a public good for the collective, the government needs to be attentive and careful on how they treat individual's data rights. Data rights of the individuals should be protected, regardless of the person's health status and the individual should not be at the center of public's way to know about health emergencies.

Datacultures of criminalization

When egregious crimes in Korea occur, the public often demands that the criminals' face be revealed to the society. Legally, the Korea's Special Law on the Punishment of Specific Violent Crimes allows the publication of criminal's face and personal information if the criminal is not a teenager, has committed a grave crime, and if the revelation serves the public's well-being and the public's right to know (Park, 2017). The public discourse surrounding the publication of COVID-19 cases has followed a similar suit, with reported COVID-19 patients described as worthy of public shaming and attack (National Human Rights Commission, 2020b). On the Internet, COVID-19 patients became targets of online trolling, with users attacking the publicized COVID-19 patients for failing to adhere to government's COVID-19 measures and risking the health of the nation (Ko, 2020). In particular, citizens who were caught lying about their data during the epidemiological investigations out of fear of public shaming, were seen as immoral subjects who were not worthy of having their personal information protected (S. Kim, 2020). Comments underneath news articles that reported on these cases were full of rage, with the public demanding that they be imprisoned and face criminal charges (S. Kim, 2020).

The criminalization of COVID-19 patients became most prominent in May when a new cluster of cases was reported in Itaewon, a multicultural district in Seoul, South Korea. When news reports revealed that the case was linked to gay clubs in Itaewon, the public engaged in a nationwide witch-hunt of gay visitors of the club. The Korean news media added fuel to the public shaming of gay communities by reporting the travel histories of the club visitors in detail. Although the government suspended its digitally driven tracking of COVID-19 patients on March 9th, 2022 (H. Lee, 2022), at the time of the Itaewon outbreak, the Korean government aggressively tracked infected peoples' travel history for 14 days prior to the day the individual tested positive for COVID-19 and publicized transmission routes spanning from 2 days prior to the day the person showed symptoms to the day of the person's hospitalization. Therefore, the news media was able to access detailed travel histories of the people linked to the Itaewon domestic outbreak, with more than 2000 articles about the first person linked to the domestic cluster during the first two days. Due to the news media's detailed reporting of the first few patients, with reports including their area or residence and workplace, club visitors became vulnerable to public outing. When human rights organizations pushed back and warned against these homophobic attacks, many citizens defended the news media's reporting of the Itaewon outbreak for presenting "factual data," about the virus, with many accusing gay men for leading to a spike in domestic cases (e.g. K. Lee, 2020). The public's engagement with the new domestic cluster drew upon homophobic discourses rampant in Korea's popular culture and politics (Gitzen & Chun, 2021), illuminating that the interpretations of big data are heavily influenced by extant political, social, and cultural contexts and norms.

Rather than empathizing with the COVID-19 patients, the public demanded to know the whereabouts of COVID-19 patients, for more transparency, and data to control the virus. In the case of the Itaewon outbreak, while there were comments under news media articles critiquing the news media's infringement of peoples' privacy and their sensationalized reporting of the gay clubs, these comments were countered by a host of comments arguing that the Itaewon club visitors do not deserve privacy protection like other law-abiding citizens. As one user comment writes: "His (the first patient linked to the Itaewon cluster) personal information should all be revealed to the public and he should pay for his own medical fees" (YTN, 2020). Detailed data disclosure of citizens perceived as "deviant" and a threat to the "law abiding" innocent public were treated as a legitimate form of punishment that aligns with the public's right to know and be safe. The criminalization of COVID-19 patients operated more harshly on society's minoritized members, such as gay men, who were seen as innately suspicious and deserving of society's heightened scrutiny. This makes one wonder whether COVID-19 data disclosure protects the public or punishes the patients.

While the criminalization of COVID-19 patients diminished significantly as the pandemic prolonged and the government stopped collecting and tracing the personal data of COVID-19 patients, the publicly made available data remain as digital traces archived in many online spaces. The public has moved on and are more focused on rebuilding their lives. However, these data remain as digital evidence of public's shaming of COVID-19 patients and the psychological harms caused by these attacks still haunt the lives of many (Choi & Park, 2020). The ways in which data disclosure was used to criminalize patients at the onset of the pandemic teaches us important lessons on how the ideals of "data transparency" can be used to harm rather than protect the public. Transparency has been idealized as the means for democratic social control, however, as Hong (2020) insightfully argues, these calls for data transparency shape the lives of people unevenly, following racist, sexist, and ethnocentric logics that deem minoritized identities as inherently suspect.

Datacultures of speculation

Instead of providing clarity, the government's COVID-19 data disclosure fostered datacultures of speculation, an endless search for certainty in Korea's networked media landscape. Scholars note how the increasing threat of the virus also led to increasing number of posts on social media, specifically those that would transfer the blame of the prolonging pandemic to minoritized members of society who are perceived as a threat (S. Kim et al. 2022). Fear led to the search for the faces behind the publicized data on online spaces and news media, YouTube personalities, and individual users capitalized on these fears by creating speculative contents based on rumor and gossip.

COVID-19 patients became involved in scandals across social media, with users of social media engaging in the speculation of who the patients could be and what their personal lives would be like (Ko, 2020). Before changes were made to the government's data disclosure guidelines in March, citizens had easy access to the gender, age range and last name of the patient, in addition to their travel histories. One woman was accused of cheating on her fiancé, after her location data revealed that it matched another person from her church (Choe, 2020). The rumors were endless, with some claiming that she was a part of Korea's problematic religious cult. Another woman was accused of being a prostitute, after it was revealed that she frequented Karaoke bars (Choe, 2020). These rumors spread like wildfire, fueled with misinformation and exaggeration.

As another prime example, when reports of the Itaewon gay clubs were published, the news media landscape and social media flourished with speculative contents and discourse. The news media and YouTube personalities capitalized on location identifiers linked to the gay community and engaged in the quest to find the travel histories of gay men during the pandemic. For instance, a *KukminIlbo* article published on the 8th, reported on how "we need to know the activity patterns of gay men to stop the COVID-19 pandemic" (Baek, 2020). Other speculative contents include YouTube videos that interrogate commercial spaces frequented by gay men, such as black sleeping rooms. According to news media YouTube channels, two people who tested positive after visiting the Itaewon club reported to have visited the black sleeping room in the Kangnam area of Seoul (e.g. Fourteen f, 2020). These news videos were followed by more sensationalized videos by Christian political influencers and other amateur content creators whose videos took the black sleeping rooms outside the context of the pandemic and engaged in the sexualized speculation of what happens in these places on a daily basis. Rather than informing the public, the data disclosure of the Itaewon outbreak and subsequent storification of the case in the news media and social media, led to the speculation of the spread of the virus across spaces frequented by gay men.

The disclosure of location data has led to a viscous cycle of speculation and uncertainty. As Hong (2020) writes, “uncertainty is not a void but a space for filling in with convenient truths,” convenient truths that legitimize expansive surveillance by both the government and fellow citizens (p. 73). The data disclosure of COVID-19 patients, which sought to fill this uncertainty, led to an endless cycle of rumors and rush for information that further instigated fear of the pandemic (S. Kim et al. 2022). The speculation of the faces behind COVID-19 data fueled Korea’s notorious online trolling culture (Choe, 2020), illuminating the importance of considering how existing digital cultures and information environment interacts with data governance strategies.

Discussion and Conclusion: From violent datacultures to equitable datacultures

This study has outlined three different types of cultures surrounding the data disclosure of the COVID-19 patients which have shaped how people engaged with the pandemic. The ways in which data has been interpreted and utilized to know about the pandemic resemble what Hoffmann (2021) describes as data violence, the “material, symbolic, and other violences inflicted by and through data technologies and their purveyors” (p. 2). Regardless of their intention, the government facilitated public’s spiteful engagement with data. Their rights-based call for information transparency has enabled and legitimized the public’s surveillance power over other fellow citizens, in particular minoritized members of our society. Taking the harms of the three different datacultures as ways to reimagine equitable datacultures, this study proposes three suggestions to be incorporated in the government’ data governance framework.

First, there needs to be a discursive reconceptualization and clarification of what “data” and “public’s right to know” represents. This should begin with changes to the type of data collected and disclosed to the public as knowledge about health emergencies. The government needs to engage more seriously with questions on whether the data they collect and disclose represents knowledge about the virus and health emergencies. While the data disclosure of COVID-19 patients has been purported to equip citizens with knowledge about the virus, it has done more to give them information about other fellow citizens. The extensive focus on patients’ data as a way to know about the pandemic has caused more harm than support during the health crisis, equating patients’ data with the virus. To reconfigure how people know about the virus, there needs to be less focus on individual citizens as the window to health emergencies. Similar to the amendments the government has made, if the disclosure of location data is upmost necessary, data disclosure needs to focus on the areas exposed to the virus, rather than a personalized account of the virus. At this data processing stage, there needs to be a depersonalization of the data to be disclosed to the public.

Following this change, there needs to be a reconceptualization of the "public's right to know" in the updated Infectious Disease Control and Prevention Act (IDCPA) (IDCPA, Article 6, 2015). J. J. Lee (2022) has argued that the "public's right to know" about the pandemic should include peoples' right to know about how the government is managing and safeguarding their personal data. Along similar lines, this study argues that the "public's right to know" about the pandemic should be clarified and specified to indicate knowledge about the pandemic that is not equated to knowledge about the individual and directed to bigger, societal structures of the pandemic, including government's management of data. The public's right to know in the cases of emergencies need to be specified, including what data citizens can have access to (information about infected locations, health facilities, how to government manages data), leaving little space for "right to know" to be weaponized to increase the governments and citizen's surveillance power over others.

Second, the government should foster "equitable data frames", which I define as frames adopted to interpret data in ways that are justice and equity oriented. Korean scholars have raised awareness of the "hate frame" governing Korean public's reading of the COVID-19 data, in which society's marginalized members from sexual minorities to migrant workers have been blamed for the spread of COVID-19 (S. Kim et al. 2022). To foster alternative interpretive frames grounded in values of equity and justice, the government needs to take into consideration how their data publication can rely on interpretive lenses that stigmatize and marginalize members of society. In addition to depersonalizing data to make racist, sexist, and unjust interpretation of data difficult, the government should encourage public's "data interpretation" that focus on the wellbeing of society and collectives made up of groups of people with different levels of vulnerabilities through their health communication. Equitable data frames should be considered and fostered throughout the entire process of data collection, processing, and publication of data, rather than letting the data speak for itself.

Lastly, the government needs to incorporate a networked understanding of health data communication in their plans for data publication. Data travel across networked media environment and the government needs to consider the different channels in which their publicly available data can reach. When the government publicized the travel histories of COVID-19 patients on their official websites, human rights groups and privacy advocates have suggested that the government communicate more clearly with local governments to supervise them to abide to the guidelines (Oh et al., 2020). In addition to communicating with local governments, this study also argues the government needs to cooperate with media industries and channels. In particular, in the context of Korea's COVID-19 data disclosure, the news media played a major role in sensationalizing COVID-19 cases (e.g Itaewon outbreak coverage) and responsible for raising unwarranted fear of the virus, but there haven't been firm guidelines to how the news media should report and use the publicly available data of COVID-19 patients' travel histories. The news media guidelines for the COVID-19 outbreak adhered to the general guidelines set for other natural disasters (J. B. Lee, 2020), which are too general to apply to the unique contexts of COVID-19 coverage which dealt with patients' sensitive information. The government needs to work with media organizations and human rights organizations to set guidelines in place when reporting data in relation to patients of natural disasters to prevent the stigmatization of patients' due to their social identities.

The aforementioned suggestions are far from perfect. However, by focusing on the cultures that surround government's data governance, this study has sought to illustrate how cultures have important implications for data policy and provides a space to examine the ethical implications of government policies. Building upon critical scholarship in data studies, this study has approached data as sociotechnical construct, requiring a more complex, interconnected, and networked understanding of its functions in society. Technical fixes to technologies, manuals, and guidelines are important, but it has to be paired with what critical data studies scholars call "cooperative responsibility" and "networked ethics" (Helberger et al. 2018; Phillips & Milner, 2021) that examine how the technical is interconnected with existing cultures, norms, and members of society including citizens, media institutions, and others that shape the interpretation and utilization of data. Ideas of accountability and transparency are not enough to address the problems brought forth by data. Instead, we need to account for the interconnectedness of data and its entanglement with society and ask why, when, and for whom data benefit and work for.

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