Coordination, Incentives, and Persuasion: South Korea's Comprehensive Approach to COVID-19 Containment*

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Abstract: A rapid and comprehensive policy response allowed South Korea to contain an aggressive outbreak of COVID-19 without resorting to the harsh lockdown measures necessitated in other countries. However, while the general content of Korea's response is now fairly well-known, what has received less attention is the unique governance context in which the country's containment strategy was formulated and implemented. This article focuses on 3 administrative elements of Korea's pandemic containment approach. First, the central government effectively coordinated the efforts of sub-national governments to ensure critical resource availability and deliver a response calibrated to the situation of each locale. Second, ongoing inter-sectoral collaboration was used to marshal non-government resources in both the biotech and medical sectors which in turn enabled core features of Korea's policy, including a rapid acceleration of testing. Third, a timely, accessible, and technocratic communications strategy, led by public health experts and leveraging the country's highly developed information and communications technology systems, facilitated citizen trust and ultimately voluntary compliance with public health directives. Although the Korean approach offers a number of lessons for other countries, by ignoring the specific administrative and social characteristics that are relevant to its implementation, policymakers risk overestimating its inter-contextual portability. By thoroughly contextualizing Korea's virus containment strategy, this article seeks to minimize this risk.

Keywords: COVID-19, South Korea, Collaboration, Disaster Response

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INTRODUCTION

While COVID-19 does not discriminate based on nationality, each state must nevertheless consider the capacities and limitations of its own administrative context in order to fight the virus successfully (An & Tang 2020; Bouckaert et al. 2020; Kandan & Campbell 2020). South Korea experienced an aggressive outbreak of COVID-19 in February of 2020. Cases rapidly rose into the multiple thousands and threatened to overwhelm local health systems. However, in a comparably short period an effective virus response was implemented, and since mid-March the number of recoveries has exceeded the number of new patients (Shin 2020). The Korean approach has been lauded for its effectiveness, but also for its rapid and targeted nature, which allowed the government to avoid the harsh lockdown measures adopted in China and later by many democratic countries in the west (Beaubien 2020). Understandably, other countries have sought to learn from Korea's experience in crafting their own virus response and the Korean government has been keen to share its knowledge (Lee 2020).

The broad outlines of Korea's response are now well-known (Bicker 2020; P.S. Kim 2020). The combination of mass testing, a sophisticated program to trace the transmission of the infection between individuals, and a treatment/quarantine strategy that allocated scarce medical resources to serious cases and used alternative strategies, such as telemedicine, to manage less serious cases, make up the main components of the Korean approach. However, what has received comparatively little attention is the unique administrative context in which the country's containment strategy was formulated and implemented. The administrative context of each country differs considerably in ways that shape the performance of policy initiatives (Ho & Im 2015; O'Toole & Meier 2017), and understanding how the effects of context matter for public management performance involves interpreting administrative phenomena on their own terms and grasping the subtle and sometimes non-obvious linkages between these and other features of the native context (Pollitt 2011). Korea's disaster response governance system has specific features that have emerged recently (Bae, Joo, & Won 2016), however, its approach to the coronavirus has also drawn on cultural resources that have deeper historical roots (Kasdan & Campbell 2020). By ignoring the specific administrative and social characteristics of the Korean coronavirus response, policymakers, both in Korea and elsewhere, risk overestimating the how easily Korea's strategy can be applied in other contexts (An & Tang 2020).

In this article, we contextualize Korea's disaster response by focusing 3 different elements. First, we discuss the use of administrative power by the state, which

complimented a centralized policymaking approach with local implementation. Taking advantage of the relative resources of central and local governments is a critical component of successful disaster management (Downey & Myers 2020), and we argue that the Korean approach took into account the distribution of administrative capacity between central and local governments and struck an appropriate balance between centralization and decentralization. Second, we focus on the government's initiation and governance of a number of inter-sectoral collaborations. Korea has a thriving biomedical industry, and, moreover, as in most countries, private sector firms have distributional and other capabilities that the government lacks. We detail how these capabilities were leveraged and the coordinated, systematic, and collaborative nature of the inter-sectoral dimension of Korea's virus containment strategy. Third, public services are co-produced (Voorberg, Bekkers, & Tummers 2015) and the effectiveness of a given containment initiative rests to an extent on citizens heeding and complying with public health guidelines. Although the Korean government may initially have underestimated the severity of the virus, it soon corrected course and took relatively decisive action. Consequently, widespread compliance was secured without the use of force or punitive fines (An & Tang 2020; Lee & You 2020). We discuss the contribution of the central government's communications strategy, consisting of expert-oriented content delivered over multiple mediums, in effectively disseminating information about risks and the actions that would potentially reduce them.

In the next section, we discuss how the resources that can be marshaled for an effective virus response are distributed among different actors and the role of government in coordinating these. We then discuss some of the elements of Korea's virus containment response in light of these ideas. In the final section, we reflect on what the Korean case can offer of value for policymakers elsewhere.

COORDINATE, INCENTIVIZE, AND COPRODUCE: ASPECTS OF A SUCCESSFUL VIRUS RESPONSE

The onset of the coronavirus presented policymakers with a wicked problem (Moon 2020). Initially, little was known about the specific nature and epidemiological qualities of the virus beyond its ability to spread quickly. Because speed is a critical factor in a successful virus response, government was forced to act, despite no one, including public health officials and sector specialists, having a good understanding of the situation. Uncertainty plus time pressure can lead organizations to centralize decision making in order to try to address risk, as well as to use

force rather than persuasion. However, while centralization can allow government to act quickly, the resources that can be useful in addressing a crisis of the scope of COVID-19 are distributed across a wide range of actors over whom the government does not necessarily exercise vertical authority (Lee, Yeo, & Na 2020). Policy and implementation coordination are critical factors in government performance (Bouckaert, Peters, & Verhoest 2016), and, to be competitive, government needs to swiftly translate available resources, inputs, into desirable outputs (Ho & Im 2015). On a nationwide scale, competitive government is based partly on the ability of government to coordinate, incentivize, and coproduce with a wide range of actors, particularly local governments, private sector companies, and citizens. In this section we look at how the Korean government worked with multiple parties in order to produce an integrated response to the virus.

Table 1 displays the framework of our analysis. Each party has associated resources and risks, and central government's role with regard to each party is different. Also, the method that central government can use to steer local government, private sector companies, and citizens is also different. We treat each of these components in turn.

Table 1. The role of local government, the private sector, and citizens in epidemic containment

	Local government	Private sector	Citizens
Resources	Information about local conditions and knowledge of local systems	Human resources, technology, and distributional capabilities	Distributed risk assessment and cooperation with public health directives
Risks	Local systems become overwhelmed	A non-systematic response lowers efficiency and reliability	Mistrust of public communications resulting in non-compliance
Role of central government	Coordinate and ensure resource sufficiency	Secure production of scarce resources	Provide timely, depoliticized information
Steering method	Hierarchical authority	Incentives	Persuasion

Coordination of local government resources

An effective disaster response needs to be organized by considering the relationship and relative capacity of central and sub-central governing bodies (Downey & Myers 2020; Drabek 1985), as well as how the relative capacities of individual local governments compare to the severity of the crisis they experience. Severity and capacity will vary significantly across regions, however, understanding and calibrating a bespoke response for each locality takes time and resources. Under intense time pressure, it consequently may appear more efficient from a policy perspective to impose a uniform solution on the country, despite such an approach sacrificing the efficiency of a regionally-tailored response (Bae, Joo, & Won 2016). In general, local governments tend to have better knowledge of local conditions, including about relative risk factors and whether local resources will be sufficient to respond. From an implementation perspective, local governments also may have a functioning chain-of-command and workforce that can quickly be put into service. Consequently, local government can make a crucial contribution to the effectiveness of a national disaster response.

On the other hand, the coronavirus is undoubtedly a national problem requiring a national strategy (Kettl 2020). Although relying on local information can provide direct insight into the situation, such information lacks the context that can be gained through synthesizing information from multiple sources. Moreover, as the severity of the crisis in a given locality may not be correlated with its on-hand resources, some local governments may lack the capacity to implement an appropriate response (Bae, Joo, & Won 2016). If central government fails to intervene to ensure that resources are available where they are needed most, subnational governments experiencing a severe outbreak can quickly become overwhelmed, with critical supplies exhausted well before the situation is stabilized. In such cases, local governments may even face competition with other (potentially richer) regions for essential equipment (Bowling, Fisk, & Morris 2020; Kim, Oh, & Wang 2020). Local governments also often have limited powers to impose the type of freedom-restricting policies that are necessary during an epidemic, and moreover, even though many disaster response resources are organized at the local level, most localities will lack specialized administrative units that focus on public health. These variables will be different among different countries and an appropriate epidemic response needs to consider the specific distribution of legal, administrative, and physical resources between local and central government to produce an effective response.

Incentivizing private sector production

Given the high degree of uncertainty and time pressure in the initial stages of the virus outbreak, administrators may be tempted to centralize power in order to maximize control. This is true not only in terms of the relationship between the central and local governments, but also between public agencies and private sector companies. For instance, some countries, national health agencies monopolized the development and production of virus test kits (Cha 2020). This strategy has the benefit of producing kits with known and reliable standards, which is critical for obtaining an accurate understanding of the scope of the virus. On the other hand, the strategy also has significant risks. Although in developed countries, public health agencies are staffed with professional and capable scientists and are often generously resourced, in the same countries, private sector actors may also have significant capacity that can be leveraged to augment the government's efforts. This augmentation is important given that by spreading the development process over a greater number of organizations, the development of testing kits can be accelerated. Relying exclusively on centralized public health agencies to develop testing kits also creates a single point of failure, a risk that should be considered when evaluating the potential benefit of centralized standards.

However, the private sector has a role to play beyond the development of test kits as companies often have information and resources that government lacks. In the United States, a number of large and strategically resourced companies have attempted to assist in the government's containment efforts or shore up deficiencies in medical and other supplies. In particular, various technology companies can assist with the collection and analysis of virus-relevant information and can also leverage their access to citizens to act as distribution channels for public health directives. However, unless government plays a coordinating role, ad hoc efforts may end up being less efficient than they might otherwise be (Baxter & Casady 2020, pp. 3). Philanthropy can have positive effects, especially in situations in which the onset of a disaster is rapid and the necessary equipment and medications are unlikely to be available in sufficient quantities. At the same time, a coordinated and integrated policy approach that leverages the capacities of state and relevant non-state actors may be a better solution in the longer term.

It is also important to note, however, that government generally lacks the type of vertical control over private sector companies that it enjoys relative to governmental organizations. Because private sector companies generally operate according to market principles, it is necessary to take into consideration the different incentives that generally govern their behavior.

Coproducing an effective virus response with citizens

Although infectious diseases are a health concern, controlling the spread of an epidemic is a social problem and securing mass compliance with public health directives is a critical factor in virus containment (Kasdan & Campbell 2020). In some contexts, compliance can be extracted through force, however, political, legal, or cultural factors may delegitimate the use of such force in others. Consequently, it is necessary in devising and communicating public health directives not only that these be consistent with the institutional configuration and capacity of a given context, but also with the expectations of citizens and the various behavioral biases of citizens (An & Tang 2020).

Fukuyama (2020) suggests that trust in executive power is the critical factor in securing citizen compliance with public health directives. In some contexts, political leaders have proved effective in informing citizens about the virus, leveraging communication skills that public health experts sometimes lack. And although national leaders vary in popularity, crisis situations often involve the public rallying behind elected representatives. At the same time, the delivery of critical public health information and directives by politicians risks its politicization. Moreover, public communications today compete with non-government channels, including information generated through social media. Information consumed on social media, including in Korea, tends to spread due to its dramatic or emotional qualities, and therefore may not necessarily be highly informative or even accurate (Park, Park, & Chong 2020). If these alternative channels of communication have information that is compelling and widely shared but inconsistent with the public health messaging provided by government, and particularly if the latter is politicized, citizen trust in government may decline and, with it, voluntary compliance with public health directives that could slow the spread of the virus.

The time-critical nature of an effective coronavirus response presents additional challenges for communications. When a phenomenon is well-known and time is not a critical factor, the content and delivery of public health initiatives can be disseminated with less difficulty. However, the low information, time-dependent nature of communications during the epidemic can lead to information asymmetries between government and citizens that undermine the coproduction of an effective response (Li 2020). Even a well-designed government initiative can fail if the public does not take proactive measures and the "sooner public becomes involved, the sooner the pandemic can end" (Lee & You 2020, pp. 11). Moreover, if government fails to gain the public's trust, citizens may also resist voluntarily providing government with the information that is critical for containment. These risks high-

light the necessity that government provide sufficiently transparent, timely, and accessible information about the virus in order to cultivate public trust.

KOREA'S CORONAVIRUS CONTAINMENT INITIATIVE IN CONTEXT

We argue that a major reason for the relative success of Korea's coronavirus containment initiative is the manner in which central government worked with local government, private sector companies, and citizens. This effort considered the different incentives, needs, and capacities of these parties. This comprehensive approach ultimately produced a high level of resource mobilization and the active participation of citizens in containment efforts.

Local government coordination in Korea

The role that Korea's central and local governments played in virus containment efforts grows in part from the historical development of the country's intergovernmental relations. First, Korea's central government played an activist role in the development of the country in the 1960s (Chibber 2002; Im, Campbell, & Cha 2013; Kim & Campbell 2014). During this developmental period, government functioned primarily as an authoritarian bureaucracy and little autonomy was extended to local government. Democratization of the central bureaucracy began following the country's first democratic presidential elections in 1987 (Baum 2007), and 8 years later in 1995 the first local elections were held. Since then, Koreans have elected local and provincial leaders 7 times, with the most recent local elections being in 2018. In 2017, just over 60% of public officials were employed at the sub-central level (OECD 2019), and central government generally now works through local institutions in order to implement policy – an arrangement that was leveraged during the initial outbreak of the virus in the country. However, although local elections signify formal autonomy and the administrative functions of local governments have steadily grown, Korea has not entirely shed its centralized administrative approach. Many administrative functions remain the purview of the central government, and most local governments are financially dependent on the central government in part or wholly (Cho, Hong, & Wright 2010; Im, Lee, Cho, Campbell 2014). In this sense, while political decentralization was achieved with the advent of local elections, administrative decentralization is a work in progress (Im & Cho 2008).

Given this distribution of administrative power, it was inevitable that much of the government's response to the coronavirus was led from the center. When the existence of the virus became known, a number of central government initiatives were launched. Immediately following the identification of the first case, daily briefings with the KCDC were initiated (Choi, Lee, & Jamal 2020), and 9 days later on January 20, the government had set up a national call center to both receive and disseminate information about the virus led by the KCDC and Korean Health Insurance Service. A day later, the Korea Occupational Safety and Health Agency began distributing masks to workplaces that were thought to be particularly vulnerable to mass infection (Cha 2020). The central government made a number of structural changes as well. First, powers to address the spread of contagious diseases, many of which were adopted following a problematic response to the outbreak of Middle East Respiratory Syndrome in 2015, were invoked (Song 2020; Korean Government 2015). Responsibility for containment strategy was elevated from a ministerial level role to the Prime Minister, who was placed at the head of a newly formed National Task Force to coordinate and ensure consistency in the response across regions (Kim, Oh, & Wang 2020). This task force also ensured that all related government agencies including local governments received the same instructions and mobilized the necessary resources based on the severity of the situation. The central government liaised actively with medical professionals to solicit their input into the policymaking process, and a National Commission of Clinical Experts on Contagious Disease was formed in order to compile and circulate emerging evidence which might inform government decision-making.

Disruptions of coordination and communication between central and local government were a weakness of the 2015 MERS response (Lee, Yeo, & Na 2020) and clarifying the roles of various governmental units was one of the key outcomes of post-crisis learning that Korea underwent (You 2020). While the central government played the driving role in national response strategy development, local governments were extended significant autonomy to implement the national strategy while considering local conditions. For instance, in the metropolitan city of Daegu, which bore the worst of the initial outbreak, mayor Young-jin Kwon organized a local-level quarantine approach for thousands of Shincheonji Church religious sect members who were at high risk of infection and closed the buildings run by the church by order (The Guardian 2020). Or, when it was suspected that the church was not cooperating fully with contact tracing initiatives (Park 2020), Kyeongii Province Governor Lee Jae-myung searched for and confiscated hard disks at the headquarters of the church in the province. Local governments took an active role in communications as well with local government websites continually updating

local infection rates, locations where confirmed cases had been found, the location of testing stations, and face mask availability (Choi, Lee, & Jamal 2020; Jung et al. 2020).

At the same time, although local governments were the main instruments through which various initiatives were implemented, the country avoided a fragmented approach that an over-reliance on sub-national government can produce (Cha 2020; Kim 2020). According to Korean law, local governments have a dual jurisdictional status, that of local autonomous entities as well as field agencies of central ministries, in which capacity they execute national policies such as in the area of public health (Im 2004). In addition, a close institutional alignment between the central government and local governments persists due to Korea's long history of centralized governance. Sub-national elected leaders worked closely with central government departments in order to secure the necessary resources to address the local outbreak, and the central government also helped to offset public health personnel and supplies in regions where the crisis was most severe, taking an active role in redistributing regional resources to where they were needed. For instance, when the Daegu area ran short of hospital beds, other nearby localities, such as in the Gwangju area, for example, were asked to make more beds available. Central government, using national universities' hospitals as well as military medical services, also helped direct medical staff to affected areas across the country.

In this way, the central government worked directly with local government units but also facilitated inter-regional coordination between them. The success of these inter-governmental activities was a key contributor to the effectiveness of the government's response.

Incentivizing private sector capacities

A key factor in Korea's relative success in dealing with the coronavirus was due not only to the central government's collaboration with local government, but also its collaboration with the private sector. Korea has a long history of leveraging the capacity of the private sector to achieve development goals as well as attain more public purposes. In the development period, the relationship between the public and private sector, and particularly that of large enterprise, was not managed in an arm's length fashion. Instead, the relationship was arranged primarily as a "quasi-internal organization," with government acting as senior partner that leveraged control of the financial market (and some administrative instruments) to shape the behavior of private sector actors (Campbell & Cho 2014; Lee 1992, pp. 189). Although today this relationship has been largely dismantled, nevertheless, the cen-

tral government continues to use financial incentives, such as those related to public procurement, in order to drive private sector actors towards public purposes (Campbell 2017). Since the 2015 MERS crisis, the government has also sought to build inter-sectoral partnerships with strategic companies to benefit from their skills and capacities in times of crisis (Lee, Yeo, & Na 2020).

One of the key sources of Korea's success in containing the virus was its ability to implement a mass testing program (Lee 2020), and the scale of this initiative was due to the government's partnership with the private sector, such as biotechnology and medical supplies manufacturing companies, of which over 20 were partnered with (Cha 2020). Due to the novel nature of the virus, no testing kits were initially available, and a new protocol needed to be developed. In order to spread the risk and take advantage of the private sector's capacity, the Korean Centers for Disease Control and Prevention (KCDC) utilized the existing partner network of private sector biotech and medical supplies firms, promising rapid regulatory approval for suitable testing kits as well as an implicit guarantee to buy them in substantial numbers. Approvals for new testing kits proposed by 4 companies were fast tracked and it took only one week to have 4 kits approved. Using the new kits, testing was ultimately ramped up to over 20,000 tests per day (Cha 2020; Lee, Yeo, & Na 2020), an impressive expansion that would not have been possible without the government's active collaboration with private sector actors (Lee, Yeo, & Na 2020; You 2020). For a time, Korea was conducting tests at a faster pace than any other country (Lee 2020) and at the time of writing has the 3rd largest number of private companies producing commercial test kits among all countries (only China and the United States have more companies producing kits) (Song, White, & Yoon 2020).

Although collaboration with private coronavirus test kit developers was critical for Korea's testing-based approach to containment, the government also used partnerships with an assortment of private sector firms for an array of medical supplies, communications technologies, and distribution. First, the government purchased about 80% of the country's total mask supply on March 5 (Cha 2020; Kang 2020). For a number of years, Korea has suffered from seasonal 'fine dust' problems, and several domestic companies make masks targeted at this problem. However, early on in the outbreak, after the government provided guidance to wear masks in public, there was a rush to secure them, and, although Korea did not experience the same level of panic buying and resource hoarding as some other countries did, nevertheless, enough individuals purchased masks in sufficient numbers so as to deplete the public supply and drive prices to socially unacceptable levels. The government's intervention into the market allowed it to ensure that hospitals were suf-

ficiently stocked. Second, a rationing system for citizens was set up (Cha 2020; Kim 2020), and the Korean Pharmaceutical Association (http://eng.kpanet.or.kr/), which represents over 60,000 independent pharmacists in Korea, agreed to collaborate with the government to distribute masks to the public. Using a government database to confirm purchaser identity (based on birth year), citizens were eligible to purchase 2 masks per week at the set rate. Because mask supplies were low and not all pharmacies could be expected to have inventory at all times, the government also published an application programming interface (API) for developers to share information about mask stockpiles at state-designated pharmacies. The API was soon integrated into a number of popular mapping applications to allow citizens to coordinate their mask buying behavior (The Korea Times 2020).

Timely, transparent, and expert-based communications for voluntary compliance

Korea's early epidemic response success was partly due to the government's communications strategy. Communicating with citizens in a timely, ongoing, apolitical, and accessible way, the government communicated the severity of the virus, recommended behaviors for containment, and ultimately secure the trust of citizens. First, early in the virus, government shifted from a potentially problematic politically-oriented communications strategy, with the president and others in the political executive taking the main role in communications, for one that utilized public health experts. At the outset of the virus, partisan criticism of the government's communications from the opposition party threatened voluntary compliance (Park 2020) and each time the president or prime minister addressed the public directly, they faced harsh criticism, such as when remarks about lockdown in Daegu provoked anger and fear of regional discrimination among its residents (Kim & Denyer 2020). Subsequently, the president and prime minister reduced their role in communications and instead relied on professionals, and particularly Jung Eun-kyeong, the director of the KCDC who had been appointed by president Moon in 2017, who gave daily briefings (Hur and Kim 2020; Lee, Hwang, & Moon 2020). As Hur and Kim (2020) note, KCDC officials are generally scientists with medical degrees and have few political considerations, which can facilitate trust in a partisan communications environment. Two televised briefings were provided per day: at 10 am by a high ranking official in the Ministry of Health and Welfare and at 4 pm by Dr. Jung of the KCDC. These daily briefings provided clear and specific information and advice to the public and increased confidence that the containment strategy was (to the extent possible) based on scientific evidence and

not politics. Due to her business-like demeanor, Dr. Jung rose to the status of a national celebrity, praised by the public for her clear and measured communications approach.

A second component of the government's public communications strategy was its dissemination of contact tracing information, which relied on Korea's Cellular Broadcasting Service (Government of Korea 2020). Korea's decades long and world leading public and private investment in Information and Communications Technology (ICT) has resulted in a society that is "immensely information intensive" (Ko, Leitner, Kim, & Jeong 2017, pp. 100). The country has one of the highest rates of smart phone ownership in the world, thus allowing the government to provide targeted information based not only on an individual's residence but also, using GPS data, where they travel (Choi, Lee, & Jamal 2020). Moreover, because of the secretive nature of the Shincheonji Church, which accounted for a 70-80% of the early cases of the virus, a technology-based contact tracing method that relies on travel records, CCTV recordings, location data, and financial transactions, was helpful in providing accurate, timely, and transparent information to citizens. The central government developed a data sharing platform that collects mobile phone location and credit card usage, producing contract tracing information in minutes. Although there were initially some legitimate privacy concerns about the personal details that were disclosed (Choi, Lee, & Jamal 2020; Zastrow 2020), the program has been modified to be more privacy oriented (Choi, Lee, & Jamal 2020; Jung et al. 2020), and citizens ultimately see the benefits of digital contact tracing as outweighing privacy concerns and have embraced it. As Cha (2020) points out, one of the key factors in the success of Korea's virus response was citizens willingness to adopt a high-tech and somewhat invasive form of contact tracing. Sonn & Lee (2020, pp. 4) likewise suggest that Korea's detailed communications strategy, including the provision of information about the location of infections and spreaders, helped calm public fear about the virus. Ultimately the government's aggressive approach to contact tracing enabled citizens to independently assess their risk of contact with an infected person, implement social distancing, or seek testing. This approach facilitates transparency, autonomy, and a sense of control in an otherwise chaotic time (Cha 2020; Kasdan & Campbell 2020). In addition, offering as much information as possible to citizens can prevent the spread and power of rumors that can damage people's trust in the health authorities. Choi, Lee, & Jamal (2020, pp. 6) suggest the government's transparent and rapid information sharing approach has enabled citizens to "develop a shared understanding of the situation" that has built trust in the government and facilitated proactive behaviors. Citizens recognized the risks and acted proactively (Lee, Yeo, & Na 2020), and the active

participation of citizens in virus reduction, from the rapid and near society-wide adoption of mask wearing in public to participation in social distancing, was crucial in stemming the spread of the disease. Many people took precautions even without being told to do so by government, as they recognized the severity of the disease as high (Lee & You 2020). Citizens engaged actively in social distancing and other preventative measures (Lee, Yeo, & Na 2020), participated in contact tracing and the self-evaluating risks (Choi, Lee, & Jamal 2020), and generally reduced unnecessary but risky behaviors, such as using public transportation (Park 2020).

DISCUSSION

Korea's response to the coronavirus was characterized by speed, decisiveness, and, as we have argued in this essay, an integrated approach that leveraged the information and resources distributed across multiple parties. The coordination of local governments' actions allowed for a swift implementation of testing and quarantine protocols as well as a virus response that varied by region based on severity. This coordination also enabled a certain level of resource efficiency, and, even in the most hard-hit places, public health systems proved robust. Second, private sector companies were engaged at the earliest stages of the outbreak in order to leverage the country's significant but distributed health sciences capacities. Without the involvement of the private sector, the country's mass testing approach to containment would not have been viable. Finally, a public relations strategy based on politically neutral and evidence-based information was adopted, and multiple channels of communication, leveraging the country's ubiquitous communications infrastructure, were used to disseminate information in a rapid and transparent manner. This approach facilitated acceptance of contact tracing, and encouraging independent citizen risk evaluation as well as mass compliance with public health directives.

Outcomes in Korea have been positive. For instance, the poorest in society are often the worst affected in any crisis situation, however, recent research suggests that relative income played little role in determining whether a citizen experiencing symptoms would seek medical attention in Korea (Foley & Gërxhani 2020). Tests were widely available across the country and to virtually all citizens with any level of potential exposure (Cha 2020). The country is also saw few instances of antisocial behavior such as panic buying and supplies hoarding. Notably, parliamentary elections, held in the middle of the crisis, saw the highest voter turnout rate of the

21st century (Lee, Hwang, & Moon 2020). At the time of writing (November 2020), although there continue to be new cases reported daily and some studies have reported that Korean are experiencing fatigue from ongoing containment efforts (Hwang, Hur, & Shin 2020), Korea has not experienced a severe "second wave" of mass infections. Basic precautions (such as public masking) continued to be exercised, but life has otherwise largely returned its pre-pandemic routines.

Due to Korea's relative success in containing the coronavirus, other countries have been interested in the Korean model, and the government has been enthusiastic about sharing its experiences. The Korean approach was successful in dealing with a number of challenges that other countries have faced, from making sure health resources are available where they are needed to facilitating mass voluntary compliance with public health directives. However, as we suggest in this essay, the relative success of the Korean approach was due in part its design being a good fit with the realities of the cultural, legal, administrative, and market conditions of the country. For instance, Korea is a unitary state and, although the country is to an extent decentralized from an administrative perspective, the balance of power still lies decisively with the central government. Local government officials are used to working with central government to implement national initiatives, a specific relationship that was leveraged during Korea's coronavirus response. Second, not all countries have private sector health research and production capacities comparable to that of Korea. Testing kits could be relatively easily procured from the domestic market in Korea and moreover the regulatory apparatus of government was sufficiently flexible to allow this. Third, although most citizens in developed countries now carry with them a smart device capable of receiving real-time information about the virus, Korea has been a pioneer in the use of e-government technologies, both those accessible to citizens as well as in terms of internal government management. These systems were already in place when the coronavirus struck.

Finally, although it is not easy to state precisely what role culture has played in Korea's relative success in containing the virus, we should not assume that it has played none. Korea has important and undeniable cultural, political, institutional, and legal similarities with the West, including a thoroughly liberal democratic constitution, a thriving and pluralistic civil society, and a free market economy. But, it also has significant cultural differences that shape the expectations of citizens about the appropriate role of government (Im, Campbell, & Cha 2013; Kasdan & Campbell 2020) and Koreans to an extent assume that government will play a significant, paternalistic role in society (Im 2003; Kim 2015). In turn, ethnic homogeneity, historical and continuing exposure to national existential threats, and a Confucian heritage together are linked to the expectation that citizens will conform to social

norms and undertake personal sacrifice for the greater good (An & Tang 2020; Gelfand et al. 2011) and the country tends to come together in times of crisis in ways that do not seem possible elsewhere. For instance, tales of citizens donating gold to shore up public finances during the 1997 Asian currency crisis remain part of the national mythos. Without mass behavioral change and voluntary compliance with public health initiatives, it is unlikely that the virus could have been contained quickly, if at all. Even though culture may be a remote rather than proximal factor in the success of virus containment efforts, understanding how it facilitates or constrains various tactics may help explain the variance in performance of those tactics in different contexts.

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REFERENCES

An, B., & Tang, S. Y. (2020). Lessons from COVID-19 Responses in East Asia: Institutional Infrastructure and Enduring Policy Instruments. In *Available at SSRN 3602375*. https://doi.org/10.2139/ssrn.3602375

Bae, Y., Joo, Y.-M., & Won, S.-Y. (2016). Decentralization and Collaborative Disaster Governance: Evidence From South Korea. *Habitat International,* 52, 50-56.

Baum, J. R. (2007). Reining in the Bureaucrats: Democratic Transition and Administrative Procedural Reform in Korea. *Governance*, 20(2), 233-254.

Baxter, D., & Casady, C. B. (2020). Proactive and Strategic Healthcare Public-Private Partnerships (PPPs) in the Coronavirus (Covid-19) Epoch. S*ustainability: Science Practice and Policy*, 12(12). https://doi.org/10.3390/su12125097

Bicker, L. (2020, March 12). *Coronavirus in South Korea: How "Trace, Test and Treat" May Be Saving Lives*. BBC. https://www.bbc.com/news/world-asia-51836898

Bouckaert, G., Galli, D., Kuhlmann, S., Reiter, R., & Van Hecke, S. (2020). European Coronationalism? A Hot Spot Governing a Pandemic Crisis. *Public Administration Review*. https://doi.org/10.1111/puar.13242

Bouckaert, G., Peters, B. G., & Verhoest, K. (2010). *The Coordination of Public Sector Organizations: Shifting Patterns of Public Management*. Palgrave Macmillan, London.

Bowling, C. J., Fisk, J. M., & Morris, J. C. (n.d.). Seeking Patterns in Chaos: Transactional Federalism in the Trump Administration's Response to the COVID-19 Pandemic. *American Review of Public Administration*. https://doi.org/10.1177/0275074020941686.

Campbell, J. W. (2017). Public Procurement Policy in South Korea: Approaches to Sustainable Development and Anti-Corruption. In T. Im (Ed.), *The Experience of Democracy and Bureaucracy in South Korea* (pp. 159-179). Emerald Insight.

Campbell, J. W., & Cho, W. (2014). Two Faces of Government-Business Relations During South Korea's Developmental Period. *Korean Journal of Comparative Government*, 18(1), 47-66.

Cha, V. (2020). Asia's COVID-19 Lessons for the West: Public Goods, Privacy, and Social Tagging. *The Washington Quarterly*, 43(2), 33-50.

Chibber, V. (2002). Bureaucratic Rationality and the Developmental State. *The American Journal of Sociology*, 107(4), 951-989.

Cho, C.-L., Hong, J.-H., & Wright, D. S. (2010). Intergovernmental Relations in Korea: From Dependency to Interdependency. *Public Administration in East Asia: Mainland China, Japan, South Korea, and Taiwan,* 377-400.

Choi, J., Lee, S., & Jamal, T. (2020). Smart Korea: Governance for Smart Justice During a Global Pandemic. *Journal of Sustainable Tourism*. https://doi.org/10.1080/09669582.2020.1777143.

Downey, D. C., & Myers, W. M. (n.d.). Federalism, Intergovernmental Relationships, and Emergency Response: A Comparison of Australia and the United States. *American Review of Public Administration*. https://doi.org/10.1177/0275074020941696.

Drabek, T. E. (1985). Managing the Emergency Response. *Public Administration Review*, 45, 85-92.

Foley, W., & Gerxhani, K. (2020). Hands-Off? Laissez-Faire Policies on Covid-19 May Exacerbate Health Inequalities. *The International Journal of Sociology and Social Policy.* https://doi.org/10.1108/IJSSP-06-2020-0220.

Fukuyama, F. (2020, March 30). *The Thing That Determines a Country's Resistance to the Coronavirus*. The Atlantic. https://www.theatlantic.com/ideas/archive/2020/03/thing-determines-how-well-countries-respond-coronavirus/609025/.

Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., Lim, B. C., Duan, L., Almaliach, A., Ang, S., Arnadottir, J., Aycan, Z., Boehnke, K., Boski, P., Cabecinhas, R., Chan, D., Chhokar, J., D'Amato, A., Ferrer, M., Fischlmayr, I. C., …Yamaguchi, S. (2011). Differences Between Tight and Loose Cultures: a 33-Nation Study. *Science, 332*(6033), 1100-1104.

Ho, A. T.-K., & Im, T. (2015). Challenges in Building Effective and Competitive Government in Developing Countries: An Institutional Logics Perspective. *American Review of Public Administration*, 45(3), 263-280.

Hur, J.-Y., & Kim, K. (2020). Crisis Learning and Flattening the Curve: South Korea's Rapid and Massive Diagnosis of the COVID-19 Infection. *American Review of Public Administration*. https://doi.org/10.1177/0275074020941733.

Hwang, H., Hur, W., & Shin, Y. (2020). Emotional Exhaustion Among the South Korean Workforce Before and After COVID-19. *Group Dynamics: Theory, Research, and Practice: The Official Journal of Division 49, Group Psychology and Group Psychotherapy of the American Psychological Association, 10,* 255.

Im, T. (2003). Bureaucratic Power and the NPM Reforms in Korea. *International Review of Public Administration,* 8(1), 89-102.

Im, T., Campbell, J. W., & Cha, S. (2013). Revisiting Confucian Bureaucracy: Roots of the Korean Government's Culture and Competitiveness. *Public Administration and Development,* 33(4), 286-296.

Im, T., & Cho, W. H. (2008). Decentralization and Economic Growth in Korea. *Korean Journal of Policy Studies*. http://s-space.snu.ac.kr/handle/10371/69915.

Im, T., Lee, H., Cho, W., & Campbell, J. W. (2014). Citizen Preference and Resource Allocation: The Case for Participatory Budgeting in Seoul. *Local Government Studies*, 40(1), 102-120.

Jung, G., Lee, H., Kim, A., & Lee, U. (2020). Too Much Information: Assessing Privacy Risks of Contact Trace Data Disclosure on People With COVID-19 in South Korea. *Frontiers in Public Health, 8.* https://doi.org/10.3389/fpubh.2020.00305.

Kang, T.-J. (2020, March 6). *South Korea Grapples With Mask Shortage Amid COVID-19 Outbreak*. The Diplomat. https://thediplomat.com/2020/03/south-korea-grapples-with-mask-shortage-amid-covid-19-outbreak/.

Kasdan, D. O., & Campbell, J. W. (2020). Dataveillant Collectivism and the Coronavirus in Korea: Values, Biases, and Socio-Cultural Foundations of Containment Efforts. *Administrative Theory and Practice*. https://doi.org/10.1080/10841806.2020.1805272.

Kettl, D. F. (2020). States Divided: The Implications of American Federalism for COVID-19. *Public Administration Review*, 80(4), 595-602.

Kim, D.-H., & Campbell, J. W. (2014). Development, Diversification, and Legitimacy: Emergence of the Committee-Based Administrative Model in South Korea. *Public Organization Review,* 15(4), 551-564.

Kim, P. S. (2020). South Korea's Fast Response to Coronavirus Disease: Implications on Public Policy and Public Management Theory. *Public Management*

Review. https://doi.org/10.1080/14719037.2020.1766266.

Kim, S. (2015). Public Reason Confucianism: A Construction. *The American Political Science Review*, 109(1), 187-200.

Kim, Y., Oh, S. S., & Wang, C. (2020). From Uncoordinated Patchworks to a Coordinated System: MERS-CoV to COVID-19 in Korea. *American Review of Public Administration*. https://doi.org/10.1177/0275074020942414.

Ko, H., Leitner, J., Kim, E., & Jeong, J. (2017). Structure and Enforcement of Data Privacy Law in South Korea. *International Data Privacy Law*, 7(2), 100-114.

Lee, C. H. (1992). The Government, Financial System, and Large Private Enterprises in the Economic Development of South Korea. *World Development*, 20(2), 187-197.

Lee, J. (2020, March 15). *South Korea Wants to Show the World How to Tackle the Coronavirus*. Bloomberg. https://www.bloomberg.com/news/articles/2020-03-15/south-korea-wants-to-share-its-tips-on-tackling-the-coronavirus.

Lee, M., & You, M. (2020). Psychological and Behavioral Responses in South Korea During the Early Stages of Coronavirus Disease 2019 (COVID-19). *International Journal of Environmental Research and Public Health*, 17(9). https://doi.org/10.3390/ijerph17092977.

Lee, S., Hwang, C., & Moon, M. J. (2020). Policy Learning and Crisis Policy-Making: Quadruple-Loop Learning and Covid-19 Responses in South Korea. *POLICY AND SOCIETY, 39*(3, SI), 363-381.

Lee, S., & Kim, J. (2020). A Country Report: Impact of Covid-19 and Inequity of Health on South Korea's Disabled Community During a Pandemic. *Disability & Society, 35*(9), 1514-1519.

Lee, S., Yeo, J., & Na, C. (2020). Learning From the Past: Distributed Cognition and Crisis Management Capabilities for Tackling COVID-19. *American Review of Public Administration*. https://doi.org/10.1177/0275074020942412.

Li, H. (2020). Communication for Coproduction: Increasing Information Credibility to Fight the Coronavirus. *American Review of Public Administration*. https://doi.org/10.1177/0275074020942104.

Moon, M. J. (2020). Fighting Against COVID-19 with Agility, Transparency, and Participation: Wicked Policy Problems and New Governance Challenges. *Public Administration Review*. https://onlinelibrary.wiley.com/doi/abs/10.1111/puar.13214?casa_token=dSMtsTEtV8wAAAAA:4eYaCsp9T714_ohzrZmHI7VXcRl1xdgNNOvhZrVqH61LIKS_uYo9MYHpaESGFQk0GqyAnH4OpabaTU3s.

Moynihan, D. P. (2006). Managing for Results in State Government: Evaluating a

Decade of Reform. *Public Administration Review*, 66(1), 77-89.

O'Toole, L. J., & Meier, K. J. (2017). Comparative Public Management: A Framework for Analysis. In K. J. Meier, A. Rutherford, & C. N. Avellaneda (Eds.), *Comparative Public Management: Why National, Environmental, and Organizational Context Matters* (pp. 1-26). Georgetown University Press: Washington, DC.

OECD. (2017). *Government at a Glance 2017*. OECD Publishing.

Park, H. W., Park, S., & Chong, M. (2020). Conversations and Medical News Frames on Twitter: Infodemiological Study on COVID-19 in South Korea. *Journal of Medical Internet Research*, 22(5), e18897.

Park, H.-N. (2020, February 20). *Gyeonggi Authorities Seize PCs From Shincheonji to Obtain List of Members.* The Korea Herald. http://www.koreaherald.com/view.php?ud=20200225000730.

Park, J. (2020). Changes in Subway Ridership in Response to COVID-19 in Seoul, South Korea: Implications for Social Distancing. *CUREUS*, 12(4). https://doi.org/10.7759/cureus.7668.

Park, S. N. (2020, February 27). *Cults and Conservatives Spread Coronavirus in South Korea. Foreign Policy*. https://foreignpolicy.com/2020/02/27/coronavirus-south-korea-cults-conservatives-china/.

Pollitt, C. (2011). Not Odious but Onerous: Comparative Public Administration. *Public Administration*, 89(1), 114-127.

Shin, H. (2020, March 13). *South Korea Reports More Recoveries than Coronavirus Cases for the First Time*. Reuters. https://www.reuters.com/article/us-health-coronavirus-southkorea/south-korea-reports-more-recoveries-than-coronavirus-cases-for-the-first-time-idUSKBN210051.

Song, H.-C. (2020, March 23). *How History Informed South Korea's Battle With COVID-19*. Council on Foreign Relations. https://www.cfr.org/blog/how-history-informed-south-koreas-battle-covid-19.

Song, J.-A., White, E., & Yoon, J. (2020, April 6). *South Korea's Factories Stretched to Limit Churning Out Virus Tests*. Financial Times. https://www.ft.com/content/de3114a2-8b97-4d95-a55c-0a9d72dfa1ea.

Sonn, J. W., & Lee, J. K. (2020). The Smart City as Time-Space Cartographer in Covid-19 Control: The South Korean Strategy and Democratic Control of Surveillance Technology. *Eurasian Geography and Economics*. https://doi.org/10.1080/15387216.2020.1768423.

The Government of the Republic of Korea. (2020). *Flattening the Curve on COVID-19: How Korea Responded to a Pandemic Using ICT*. http://www.korea.kr/common/download.do?fileId=190536078&tblKey=GMN

The Korea Times. (2020, March 11). *Digital Mask-Supply Services Kick Off in Korea*. The Korea Times. https://www.koreatimes.co.kr/www/nation/2020/03/119_285973.html.

Voorberg, W. H., Bekkers, V. J., & Tummers, L. G. (2015). A Systematic Review of Co-Creation and Co-Production: Embarking on the Social Innovation Journey. *Public Management Review,* 17(9), 1333-1357.

You, J. (2020). Lessons From South Korea's Covid-19 Policy Response. *American Review of Public Administration*. https://doi.org/10.1177/0275074020943708.

Zastrow, M. (2020, March 18). *South Korea is Reporting Intimate Details of Covid-19 Cases: Has it Helped?* Nature. https://www.nature.com/articles/d41586-020-00740-y.