



The Impact of Korean Local Government's Public Health and Urban Planning Policies in Combating COVID-19

Kore Yerel Yönetiminin Halk Sağlığı ve Kent Planlama Politikalarının COVID-19 ile Mücadelede Etkisi

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Öz

Tüm dünyaya yayılan ve ekonomik etkilere ağır darbe vuran COVID-19 küresel sisteme büyük hasar vermiştir. Devletler kuantum bilgisayar ve yapay zekâ da dâhil olmak üzere son teknolojileri kullanarak COVID-19 virüsünün üstesinden gelebilmek için birçok yol denemişlerdir. COVID-19 virüsünün devletlerde yayılma hızı dikkate alındığında yeni teknolojilerden ziyade yerel yönetimlerin etkinliği ortaya çıkmıştır. Yerel yönetimler merkezi yönetimler ile kıyaslandığında daha çok halkın isteği doğrultusunda şekillendiği ve hızlı çözümler üretebildiğinden dolayı büyük krizleri yönetebilme kapasitelerine sahiptirler. Güney Kore'nin yerel yönetim yapısı incelendiğinde teknolojik avantajının yerel yönetim tarzı ile uyumlu şekilde ilerlediği ve COVID-19 ile etkili mücadeleye yardımcı olduğu görülecektir. Makale, Güney Kore'de yerel yönetimlerin yapısal ve tarihsel arka planının COVID-19 ile mücadeledeki etkisini ve sağlıklı şehir planlaması ve kamu sağlığı konularında yerel yönetimlerin katkıları ve bunların COVID-19 ile mücadeledeki rollerini incelemektedir. Bu çalışmada nitel yöntem kullanılmış ve çalışmanın amacı Güney Kore yerel yönetimi örneğinden yola çıkarak COVID-19 ile mücadelede yerel yönetimlerin sağlıklı şehir planlaması ve kamu sağlığı yönünden katkılarını araştırmaktır.

Anahtar Kelimeler: Güney Kore, Kamu Yönetimi, Yerel Yönetim, COVID-19, Teknoloji

ABSTRACT

COVID-19, which spread all over the world and hit economies hard, caused great damage to the global system. States have tried many ways to overcome the COVID-19 virus using cutting-edge technologies, including quantum computers and artificial intelligence. However, considering the rate of the spread of the COVID-19 virus in states, rather than new technologies, the effectiveness of local governments has emerged. Compared to central governments, local governments have the capacity to effectively manage major crises because they are shaped more in line with the wishes of the people and have the capacity to produce faster solutions. When the local government structure of South Korea is examined, it will be seen that the technological advantage of South Korea progresses in harmony with the local government style and helps to effectively fight against COVID-19. The article analyses the impact of the structural and historical background of local governments in South Korea in the fight against COVID-19, and the contributions of local governments to urban planning and public health, and their roles in combating COVID-19. A qualitative method is used in this study and the aim of the study is to investigate the contributions of local governments in terms of urban planning and public health in combating COVID-19, based on the example of the South Korean local government.

Keywords: South Korea, Public Administration, Local Government, COVID-19, Technology

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INTRODUCTION

The Republic of Korea was established in 1948. Korea, which was under Japanese colonization for 36 years from 1910 to 1945, was divided into North Korea and South Korea, under the influence of the US and the Union of Soviet Socialist Republics (the USSR) power blocks. A state was established in the northern part with the help of the USSR. The southern part was able to form a UN-recognized government in 1948. The North part, helped by the USSR and China, made a war against the South part, helped by the UN, for three years until 1953, when they eventually split into North and South Korea. Since North Korea is not recognized by most countries in the world, the name of Korea (Republic of Korea on August 15, 1948) refers to South Korea, which occupies the southern part of the Korean Peninsula. South Korea has a homogeneous population that shares a common cultural, traditional, racial, and linguistic heritage. The country shares a maritime border with both China and Japan, which has land borders with North Korea. Korea has been directed by a presidential system that has its own peculiarities and has been heavily affected by foreign states such as Japan (especially during and after the Japanese occupation of Korea (1910–1945)) and the US (mostly because of the role of the U.S. in the post-Korean War) (Önder & Ulaşan, 2016). In 1948, Korea's Gross Domestic Product (GDP) was the lowest in the world at 50 USD (Choi, 2018). In 1963, South Korea's per capita income was lower than Bolivia's, but currently, it is richer than Spain and is the first Asian G-7 member to host the G-20 summit (Noland, 2011, p. 1). South Korea's GDP per capita was 34,983.70 USD in December 2021 and 32,236.80 USD in December 2022 (CEIC, 2022). Bolivia's GDP per capita was \$3,523 in 2022 (Macrotrends, 2023). Spain's GDP per capita was 30,133.94 USD in 2021 (O'Neill, 2023). Today, South Korea is a good example of development management in the world. Also, it has taken attention in combating COVID-19. With the help of the operative containment approach, South Korea appears to be an ideal country in combating COVID-19. It has never implemented a complete lockdown, trusting in aggressive testing, contact tracing and the usage of masks in order to take COVID-19 under control. Although COVID-19 has harmed the global economy seriously, the South Korean economy has outperformed major economies of the world due to its inclusive disaster management. South Korea's GDP shrank by nearly 0.85 percent in 2020, but one year later it rapidly grew by four percent and reached its highest level in 11 years with the support of strong exports and private consumption (Yoon, 2022).

Countries have prepared their institutional structures and systems against possible disasters by evaluating their experiences and knowledge. However, the scope and speed of the COVID-19 outbreak caught the countries off-guard. This pandemic spread very quickly, and states could not find any time to defend themselves. In addition, states did not know enough about how it spread and how deadly it was. It was understood that legislation, institutional structures and habits of the states were insufficient against COVID-19, and they started to focus on radical solutions. States struggled to protect their people and manage their economies. Global poverty and inequality dramatically increased in the time of COVID-19. Globally, poverty increased and the inconsistent income loss for disadvantaged groups and inequity in states increased dramatically. The 2020 economic contraction was assessed to be 5.8 percent for developed states and 3.3 percent for developing states and 1.2 percent for low-income developing states. On a per capita basis, in 2020, the contraction in the low-income developing states was expected to be -3.3 percent (IMF, 2020; Bundervoet, Dávalos & Garcia, 2021, p. 2). Firstly, tourism and consumer-oriented businesses seemed to be suffered from COVID-19. Sectors experiencing the most closures globally were travel agencies (54 percent), hospitality industry and event services (47 percent), education and childcare services (45 percent), performing arts and entertainment (36 percent), and hotels, cafes and restaurants (32 percent). Especially, women have been suffered from the income loss and the employment problems because they

worked more in sectors suffering from the lockdown and social distancing much more than other sectors (Goldstein, Martinez, Papineni & Wimpey, 2020).

COVID-19 has affected many areas, especially the economies of countries. For example, states have started to use AI in the public administration against COVID-19 and there has been an increase in AI studies (Uzun, Yıldız & Önder, 2022, p. 424). The pandemic spread rapidly all over the world and caused many deaths. It has been discovered that the pandemic occurred with signs like high fever, cough and dyspnea. It was revealed that it was transmitted by sneezing and breathing (droplets) infected with the pandemic, or by touching the mouth, face, and eyes with an uncleaned hand or by touching the infected area. States could not take measures to stop the pandemic and tried to solve the problem by closing the border gates, trying to keep people away from each other and taking economic measures (Ulaşan, 2023, p. 111). The total number of cases of the COVID-19 virus has reached 406 million and deaths has reached 5.79 million as of February 2022 (Arslan, 2022, p. 30).

The way the public administration used to overcome previous crises can shed light on public administrators for the COVID-19 research. In South Korea, as of April 15, 2020, 7,616 patients recuperated from 10,591 confirmed cases, 2,750 patients remained in quarantine and 225 patients died. South Korea's success stimulated foreign public administrators to evaluate and modernise their strategies to deal with COVID-19 (WHO, 2020). South Korea has shown the adaptability and resilience in the fight against COVID-19. COVID-19 has the characteristics of a "transboundary crisis" that covers a long period of time and geographical boundaries. A transnational crisis has the potential to spread to more than one type of the border (geographical, policy, political, cultural, legal) and crosses geographical and/or policy boundaries. Such crises are intertwined with critical infrastructures and free-flowing forces connected to globalization and the global economy and can include cyber failures, migration, economies, and health crisis (London School of Economics and Political Science, 2018; London School of Economics and Political Science, 2020; Blondin & Boin, 2020, p. 199). The article will mainly focus on South Korea's response to COVID-19 on the basis of urban planning and public health. Experts have seen Korea as an exemplary country against COVID-19 (Fisher and Choe, 2020), which has led to the term "K-quarantine". The Covid-19 response system, known as 'K-Quarantine' in South Korea, includes comprehensive and scientific measures determined by the quarantine authorities. This system has emerged as a result of the provision of the transparent information by the government, the provision of highly professional health care, the sacrifices of employees and the joint efforts made by the public institutions. To help viewers who are desperate to reach the true information during this unprecedented health crisis, the main public service media in South Korea have taken the responsibility to provide citizens with the most accurate information from quarantine authorities and expert groups via the Korean Broadcasting System (Sung-dong, 2020, p. 36). A K-quarantine model is proposed based on basic principles (contact tracing and quarantine). The model was simulated on various types of complex networks. Model control parameters were analyzed with the empirical data on the spread of SARS-CoV-2. The number of confirmed cases and the time-dependent reproduction were successfully checked from simulations in the early stage. The K-quarantine model was applied to empirical and synthetic networks to investigate the patterns of daily confirmed cases (Choi, Choi & Kahng, 2022, p. 2). It is an approach used by South Korea so as to fight against COVID-19, called the 3T test, follow-up, and treatment system. The success against the virus relies on collaborations among the central government, local governments, private sectors, and the public.

Although roles of central governments in the fight against COVID-19 are emphasized in most of the studies, the roles of the local governments should not be underestimated. The most of research on tackling COVID-19 concentrated on roles of central governments (Antwi-Boasiako, Abbey, Ogbey & Ofori, 2021; Bressanelli & Natali, 2023; Abdullah & Kim, 2020; Barroso & Mayoral, 2023; Alexander,

Unruh, Koval & Belanger, 2020). Less attention was given to roles of local governments. The article analyses the structural and historical background of local governments in Korea, and the roles of local governments in combating COVID-19 on the basis of urban planning and public health. This study, developed with the content analysis method, consists of two parts. In the first part of the study, cultural and historical values of South Korean public administration and the structural and historical background and process of South Korean local governments will be analysed. The analysis of the infrastructure of the South Korean public administration will shed light on South Korea's success in combatting COVID-19. In the second part of the study, the practices and service delivery methods developed by South Korean local governments will be analysed on the basis of urban planning and public health. Before COVID-19, the humanity has faced many pandemics in the past. Pandemics generally occur in unhealthy urban areas formed by densely populated cities, and existing pandemics grow and develop in these environments. After each major pandemic, city administrators have made changes in urban planning in line with urban health and social needs. Pandemics have a direct impact on the foundations of urban planning practices and also affect public health. Cities can be made more protected against pandemics by integrating social behaviors against pandemics through a health perspective in urban planning and public health (Akbaş, 2022, p. 118-119). The conceptual discussion of South Korea's unique public government tested against COVID-19 shows that the pandemic has enabled the emergence of hybrids of the public administration to better combat COVID-19. A qualitative method is used in this study and the aim of the study is to investigate the contributions of local governments in combating COVID-19, based on the example of South Korean local governments. This study makes a comprehensive classification of the content of services provided by local governments in South Korea during the pandemic period. In addition, the study, which aims to discuss the importance of local governments attached to the fight process against COVID-19 through sample municipality findings, aims to provide a theoretical infrastructure for the future research. In these respects, the study is expected to contribute to the literature.

1. The Administrative Tradition and Culture in Korea

The Joseon dynasty has ruled Korea for nearly 600 years, from 1392 to 1910. Officials were either chosen by the royal court or through state-run tests. The Korean public administration converted into an authoritarian state and was vastly affected by Confucian principles, later began to transform with the influence of the Western culture in Korea. After the Korean War, the management-oriented American system greatly affected the growth of the Korean public administration by making it a hybrid and distinctive administration (Önder & Ulaşan, 2016).

1.1. The Historical Processes of the Local Government in South Korea

The Korean local governments' features are similar to the central government such as general affairs of governments, the selection of the government, and the selection of the organs. Local governments are known as the governing structures that allow citizens in bounded geographical areas to choose their own representatives and permit these representatives to run their local governments through the relative autonomy that is given by the central government. The feudal lord system in Europe and the Daimyo system in Japan are similar to current local government systems. Korea did not experience either the feudal lord system or the Daimyo system. For five hundred years, the Joseon Dynasty governed Korea with an absolute centralized system. After the Joseon Dynasty, Japan occupied the state, and they did not establish any local government system (Ulaşan & Lee, 2022).

In 1948, Korea created its constitution which has two articles about the local autonomy (article 96 and 97). Article 96 fundamentally mentions that the local self-government is recognized and has the autonomy over financial affairs and some properties. The local governments have to obey acts and

ordinances by national executive orders. The article 97 mentions that local autonomous entities should have special assemblies, the law decides the power and the structure of assemblies and elections of the members and local autonomous entities have a special function and organisation regulated by the law. Thanks to the two articles, Local Autonomy Act was formed in 1949 and mentioned that the local government system had two levels that are upper level (Seoul metropolitan city and some provinces) and lower-level local governments (city, county, township and town). The central government controlled the upper-level local governments. However, the control of the lower-level local governments was in the hands of upper-level local governments. This system was named as two tiers of local governments (Cho, Hong & Wright, 2010, p. 379-380). Local governments in South Korea focus on four core structures: innovative public administration, self-quarantine support and management, local economic recovery, and transparent information disclosure. The first step of the innovative public management is the drive-through screening. It is a facility that works separately from medical units/hospitals and aims to prevent large numbers of people from gathering in closed areas. Thanks to this method, both visitors and health personnel had the opportunity to get rid of the risk of the infection. In addition, the state establishes live treatment centers for patients with mild symptoms in order to keep hospital beds ready for severe patients (Ministry of Interior and Security, 2020, p. 1- 3). For this reason, a sudden need for high beds for serious patients was avoided from the very beginning.

1.2. The Historical Structure of Korean Local Government

Confucius was born in Shadong, China in 551 BC, and his teachings have highly influenced Korea, China, Japan, and other regions. Confucianism is considered a unified teaching about life and it does not give a god to be worshipped. It helps people to lead a better and virtuous life on earth and teaches ethical behaviors and social responsibility (Weinland, 2023, p. 446). Essentially, Confucianism aims for the social harmony and emphasizes the virtues of social life by embracing ideas such as humanity and reciprocity. In conjunction with the focus on social virtues, it puts the emphasis on the requirements of social ritual, including social order, hierarchy, accountability, respect for authority, ethics and dedication. Confucianism aims to improve people's understanding of the social world and the meaning of people's actions (Provis, 2017). In Korea, the Joseon Kingdom ruled for a long time and Confucianism became the dominant government type. Joseon rulers were strongly committed to Confucianism and sought to create a society and government in line with Confucian values and beliefs. If there is no benevolence, even if the ruler acquires the power with wisdom and talent, the ruler may eventually lose the power. Unless the ruler leads the masses with conscience, the ruler cannot get the support of the majority. A well-balanced and wide-ranging method according to ethics and values is important for the Confucian administration. Confucianism also puts a special emphasis on self-discipline and personal growth (Low & Ang, 2013, p. 33; Seth, 2010).

2. South Korean Local Government's Struggle with COVID-19

South Korea experienced some health disasters coming from infectious diseases from overseas such as the severe acute respiratory syndrome in 2003, the swine flu in 2009, and the Middle East respiratory syndrome in 2015. With the help of the experience, South Korea enacted the Infectious Disease Control and Prevention Act, authorizing the Minister of Health and Welfare to launch every five-year systematic strategy for communicable disease containment and prevention. Based on this strategy, every local government created and applied an implementation plan for communicable diseases in the municipalities. The aim of the creation of the act and strategy was to activate the systematic quarantine actions of central and local governments and to reinforce the bond among them by proposing targets and guidelines against communicable diseases (Asian Development Bank, 2021, p. 3). When COVID-19 emerged, it triggered social, political and economic challenges all over

the world. Socio-economic and political crises, deaths, collective despair and escalating tensions caused great harm to countries. When the pandemic began, South Korea was seen among the risky areas due to its location to China. However, thanks to South Korea's effective policies and public administration, it effectively coped with the pandemic. With a population of approximately 51 million and 320 deaths in 8 months after COVID-19 began, South Korea demonstrated the effective management against the global pandemic. State capacity, trust and leadership, equipment stocks and public management, centralized and effective local management and effective policies were seen as the powerful crisis management tools (Klingebiel & Torres, 2020).

The COVID-19 pandemic, which spread from China in 2020, quickly spread all over the world. At the beginning of the pandemic, a 61-year-old woman joined events at Shincheonji Church of Jesus in the city of Daegu, South Korea. South Korea faced a crisis with her participation in the Church of Jesus event (Volodzko, 2020). 20 new cases were reported, including 14 people at the church service in the central city of Daegu, South Korea (Cha & Kim, 2020). The flux of the virus, which was determined to be based in Daegu, started to affect South Korea. South Korea initially closed the hospitals and medical centers hosted by COVID-19 patients, decided on specific hospitals for COVID-19 patients and started to transfer all COVID-19 patients to these hospitals. During the pandemic, there was a cooperation between healthcare staff and the task force team to increase the number of beds, to reallocate the healthcare personnel and to provide the optimal healthcare, bed shortages and to avoid the risk of deaths because of the lack of timely care. When a new patient was discovered, the result was informed to the COVID-19 task force team and the local COVID-19 management team sent the patient to hospitals according to the severity of the sickness and room availability. Treatment sites were separated into home quarantine, COVID-19 community facilities, private COVID-19, primary, secondary and tertiary hospitals. This organization was made for the concentrated patient care, distributing the medical burden and avoiding the bed shortage (Figure 1) (Her, 2020, p. 1).

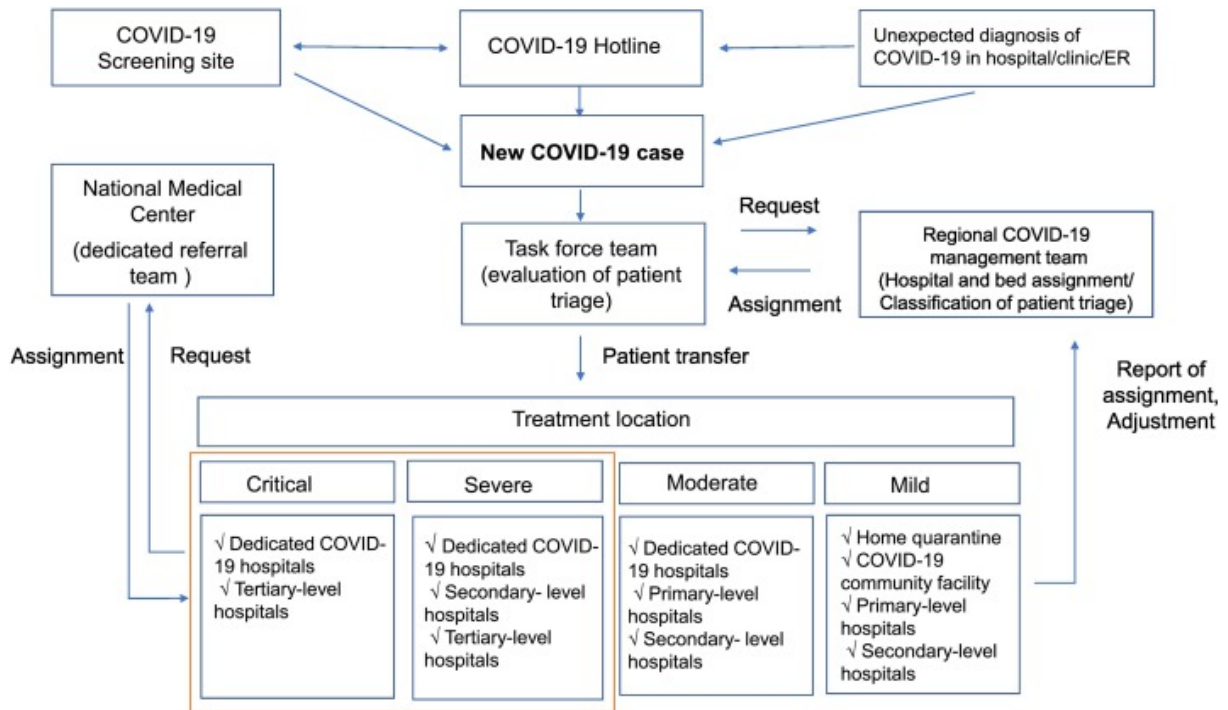


Figure 1: Classification of hospital/room assignments (Korean centres for Disease control and prevention, 2020)

South Korea tried to avoid the spread of the virus by limiting the contact of COVID-19 patients with other people and establishing special hospitals and teams for COVID-19 patients. Many countries

such as South Korea, France, India and England, especially the USA and China, developed strategies to use artificial intelligence (AI) in the public sector. AI was used effectively by states against COVID-19. For example, South Korea and China followed citizens through CCTV cameras, credit cards and telephones, called them for testing (Ulaşan, 2023, p. 118). South Korea developed a pilot project with AI, facial recognition and thousands of CCTV cameras to monitor the movements of infected citizens. The system utilized AI algorithms and facial recognition systems to analyse images collected by more than 10,820 CCTV cameras and monitor the movements of infected citizens, anyone in the close contact with infected citizens, and people who did not wear masks (Cha, 2021). Thanks to AI, the development of the COVID-19 test kit in South Korea appeared quickly. The test kit, which would normally take two to three months to develop, was approved by the authorities in less than a week from the application date. Using AI techniques, the chatbot was utilized to provide the information to fight against COVID-19, and AI-based voice robots automatically searched for humans needing help. VUNO's Chest X-Ray AI Image Support Decision Tool, an algorithm for identifying abnormal findings in chest X-rays, classified intensive care patients using X-ray images and could scan the lungs in just 3 seconds (AI for Good, 2020). Also, utilizing machine and deep learning, South Korea tried to guess the expected survival rate for 1,533 isolated patients based on gender, age, treatment days and previous ailments. AI-based models were tested on 5165 COVID-19 samples and confirmed on 1533 quarantined patients (Figure 2) (Sinha & Rathi, 2021, p. 8588).

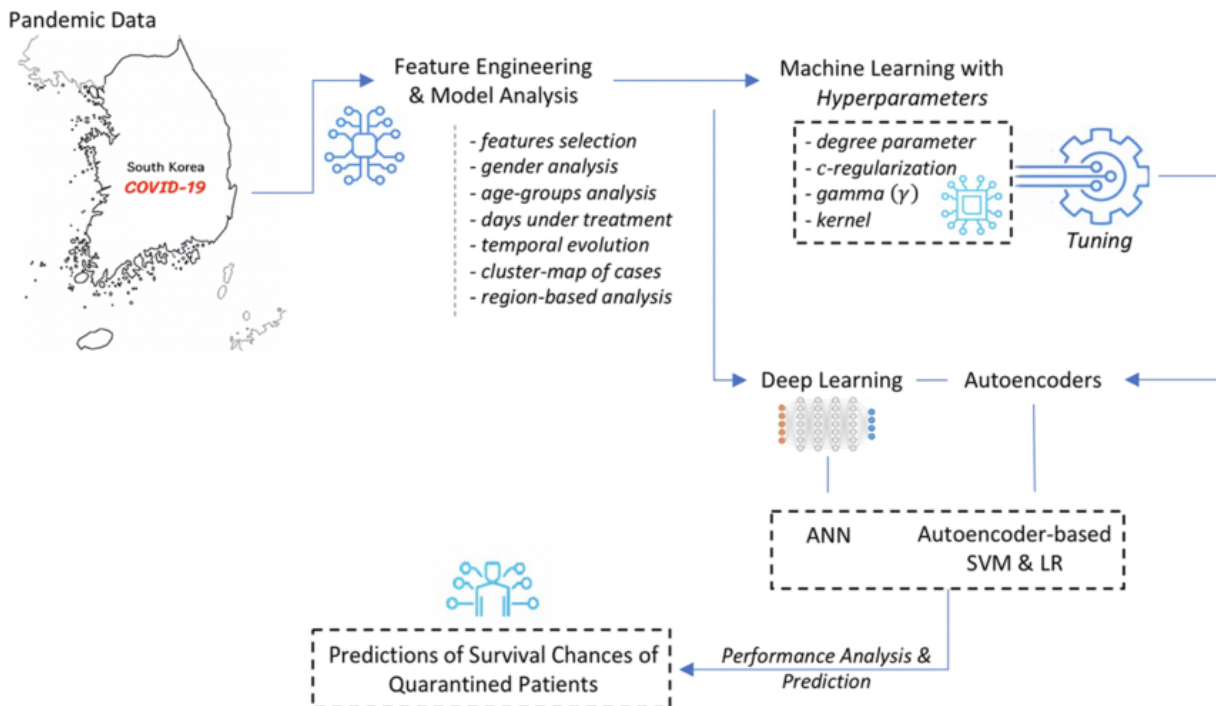


Figure 2: A working prototype of AI-based methods with model parameters (Sinha & Rathi, 2021, p. 8590)

South Korea, which was basically one of the countries that uses the latest technology in the best way, successfully struggled against COVID-19 in both central and local governments. The technological development of South Korea combined with the understanding of the effective public administration, and the public and state of South Korea put up an effective fight against COVID-19. The public administration institution, which was founded on the Confucian teachings of South Korea and shaped by the West's new public administration understanding and traditional Weber-type teachings, made local governments stronger.

2.1. South Korean Local Government's Impact on the Public Health in Combating COVID-19

COVID-19 is one of the largest public health crises in the world. Extremely contagious and infectious SARS-CoV-2 gives rise to bioaerosols which transport pathogenic microorganisms and affect the public health. Additionally, the public health is divided into two categories. The first is about people's bodies. The second is related to mental health. The speed of the COVID-19 virus and high death rates negatively affected people's mental health, and restrictions imposed by governments (staying at home, curfew, etc.) also caused social concerns. To overcome psychological problems, states trained psychologists and social workers about the pandemic and provided the psychological support to patients (Miyah, Benjelloun, Lairini and Lahrichi, 2022, p. 4). South Korea increased the danger level to red (the highest level) on February 23, 2020, and applied strict and innovative measures against COVID-19. For the medical system of Daegu City, the earliest consequences of the increase in COVID-19 cases were a shortage of hospital beds, supplies and healthcare workers (Kim, An, Min, Bitton & Gawande, 2020, p. 1). The first step in the innovative public management was the drive-through screening. The purpose of the establishment of this system was briefly to relieve the hospitals as a result of the COVID-19 pandemic in the city of Daegu causing distress in the hospitals and to keep the other patients and COVID-19 patients as separate as possible. It aimed to ensure that people could go to their jobs, that their work was not interrupted, and even two people did not come together. The health of both visitors and health personnel was protected. It was also made to separate the severe patients from the patients with mild symptoms, and to reserve hospital beds for severe patients (Ministry of the Interior and Safety, 2020, p. 2-3).

The "Goyang safe car screening clinic", (the drive-in approach to the novel coronavirus test) was introduced by the city of Goyang and attracted the world's attention. As the situation became more and more urgent, Kim Jin-yong, director of the infectious disease division of Incheon Medical Center, who treated South Korea's first confirmed COVID-19 patient, presented the idea for a conference that combined the treatment with a drive-thru approach. The idea was to set up screening clinics in large gyms as a way to speed up testing and treatment while ensuring the safety of medical staff and patients. Kyungpook National University Chilgok Hospital set the first container and started testing on February 23, 2020. The drive-through test started in the city of Goyang, the first local government to adopt the approach. On the advice of medical professionals, the open "yurt" model was adopted instead of closed containers, as it provides greater safety in droplet exposure situations, and screenings for protection from the cold were abolished. The model consisted of 13 rental dorms, desks, fences, and electrical equipment and instructive banners, with a total cost of just \$12,090. Outside the clinic, the city's African swine fever sterilizers were used for disinfection. The negative pressure container screening clinics set up by Gyeonggi Province proved to be very cost-effective, with each costing US\$707,678. Patients from many parts of the city flocked to Goyang, and a total of 2,378 people visited between March 18-22, and an average of 108 people were treated per day, 1,020 samples were taken, and three people's tests were positive (Kyung-man, 2020). The drive-in COVID-19 screening center took only ten minutes for staff to interview, take their temperature, and collect samples from the nose and mouths of visitors sitting in their cars (Kuhn, 2020). Pre-existing methods are used to take 30 minutes to 1 hour. Jeju local government identified people traveling from overseas and sent them to test centers at Jeju International Airport to take the rapid collection of samples and stop the spread of the COVID-19 virus on the island. The test centers at the airport became operational on March 30, 2020, with the Jeju National Quarantine Station installed in the airport's car parks and serving with a rotating 18 staff and screening agency (Governors Association of Korea, 2020). Jeju local government thought that the pandemic from overseas could be prevented from spreading to local communities in the Jeju area by screening at the airport with the preventive suspension of visa-free entry (Hwang & Bae 2021, p. 245).

Korean Association for the Study of Traumatic Stress was organized in April 2014 for people with mental health problems in the Sewol ferry disaster in November 2015 and consists of psychiatrists, social workers, psychologists, nurses, counselors, emergency medicine doctors and researchers. This multidisciplinary team, by maintaining the social distance and collaborating in virtual spaces, produced useful contents on psychosocial care in a short time through various activities (open discussions, feedback, online meetings, etc.) and quickly presented them to the public through mass media. Team members liaised with various healthcare organizations such as local governments, public and private hospitals, universities and the media. Thus, the team was able to gather comprehensive information about people's psychosocial needs and available resources during the pandemic. Practical psychosocial support was provided to the public and various supportive activities were given to people, such as telephone counseling (Hyun et al., 2020, p. 10).

2.2. South Korean Local Government's Impact on the Urban Planning in Combating COVID-19

Today, approximately 56% of people (4.4 billion people) live in cities. If this situation continues in the future, the urban population will increase significantly by 2050 and approximately 7 out of 10 people will live in cities. Considering that more than 80% of global GDP occurs in cities, it becomes clear how important urbanization is. Considering the speed and scale of urbanization, as the population increases, a shortage of affordable housing occurs, transportation systems are disrupted, infrastructure is damaged and cleaning services are disrupted. The health problem that has arisen in cities due to COVID-19 and the fact that public health is under threat indicates that public health and service delivery systems should be reviewed, especially by local governments. Building green, resilient and inclusive cities requires intense policy coordination, investment and public support. National and local governments should act together and plan healthy urban policies by working with the public (The World Bank, 2023). With the population growth, the problem of the urbanization emerges. Lack of access to basic needs and services creates a fertile ground for the spread of diseases, especially in densely populated areas. The effects of COVID-19 differ according to cities. One of the most important factors of this differentiation is the economy. While global cities such as New York, London and Tokyo are command centers on a global scale, global cities such as Istanbul, Moscow and Seoul stand out with their regional functions (Csomós, 2017; Uçar, 2023, p. 25).

The effects of COVID-19 on cities are multi-dimensional. However, the most important effects of COVID-19 on cities on the basis of local governments can be divided into two as socioeconomic impacts and governance problems against urban planning. South Korea aims to improve healthy urban planning and reduce the socioeconomic impacts and governance problems. In South Korea, local governments can serve to the public by taking initiative on some issues. Local governments have a certain budget and income sources that are given by the central government to govern cities for healthy urban planning against governance problems. For example, South Korea has implemented a unified approach to healthy urban planning. Rather than a complete lockdown with huge socioeconomic results, South Korea implemented the comprehensive surveillance since the early stages of COVID-19, using smart technologies such as debit/credit card transaction data, mobile phone data and CCTV. With these methods, the patients' mobility was mainly monitored and people and places they came into contact with were tried to be determined. In this way, South Korea learned the places and people to intervene without causing panic and was able to provide the accurate and transparent information to citizens (Khavarian-Garmsir and Sharifi, 2020). Citizens could determine for themselves whether they were in contact with the patient or not, as the government was tracking the movements of confirmed patients in detail and making it public via smartphone applications. Mandatory quarantine was lifted two weeks after the last contact with the confirmed patient. Individuals who violated the isolation rules were fined up to \$1,000 or jailed for up to 1 year.

Local governments could restrict meetings to prevent the spread of contagious diseases and fined 3 million KRW for violation of prohibited measures. During the COVID-19 pandemic, local governments identified and penalized some groups for holding large-scale rallies (Jeong et al., 2020). Smart city technologies have been utilized for patient tracing and contact tracing systems in South Korea. The Epidemic Investigation Support System was essentially based on South Korea's 'Smart City' data system and enabled information to be shared among authorities. The system was built to enable authorities to share urban planning information, from traffic to pollution, by uploading data in Excel spreadsheets and other formats. But after COVID-19, South Korea used it to accelerate responses to the pandemic. The access to personal location and credit card data has been accelerated and the South Korean government has made the personal data, such as phone locations and credit card transactions, accessible to authorities without a court order (Shin, Jin and Smith, 2020). South Korea has primarily interviewed patients to find potential contacts. In most cases, the sufficient information has been obtained through interviews. However, sometimes patients choose not to give or hide the information. This happened consciously or unconsciously. For example, patients provided the false information out of fear of losing their jobs. Additionally, some patients gave the incorrect information because their memories were not good. In such cases, the local government obtained the electronic data through the police. One of the easiest ways to identify patients' locations and places patients went was to track patients' transportation cards. The absolute majority of Koreans used their transportation cards either as a chip embedded in their physical card or as a credit card. Local governments could obtain the information about where people went by paying for transportation cards. 95 percent of transactions in South Korea do not use cash and people pay for things by utilizing bank cards, moving money over the internet rather than utilizing cash. Due to this reason, South Korea can track citizens easily via banks (Sonn, Kang & Choi, 2020, p. 149-150). Apart from that, Seoul local government prepared special entry procedures for the coronavirus diagnosis and preventive tips and temporarily limited the utilization of open squares. In Daegu City and Gyeongbuk Province, governments set up a system to investigate all members of the church, largely because they considered that the pandemic has spread from the Shincheonji Church of Christ. Companies like Samsung and LG and religious communities have opened their education centres and facilities to the public as living treatment centers and other local authorities, including Gwangju Metropolitan, opened their hospitals and facilities to patients from Daegu and Gyeongbuk so that the areas could recover faster (Shaw, Kim & Hua, 2020, p. 8). In particular, local governments were obliged to provide their own emergency controls regarding COVID-19. Each local government established its own organization, and it was supported by the central government when they experienced capacity shortages. On March 15, 2020, South Korea announced new privacy protection guidelines and prohibited the disclosure of any private information that could be used to identify infected individuals, but varying degrees of the information disclosure has been implemented between different local governments. During 2019 and 2020, the crisis management and collaborative governance infrastructure were established for various central and local authorities and South Korea established a nationwide epidemiological monitoring platform (Lee & Wong, 2021, p. 2-3).

Local governments tried to slow down socioeconomic impacts of COVID-19 and gave tax breaks and tax credits to shopkeepers who willingly lower the rent to support the local economy. Local economies were strengthened thanks to this mechanism called the "Good Landlord" campaign. More than 5000 stores in Dongdaemun Market, Gwangjang Market and Tongin Market in Seoul City participated in the campaign and reduced rents by 20-30%. Also, the food brand Chaeseondang also made various "Good Landlord" campaigns, such as exempting franchise commissions and subsidizing 1 million Korean won to affiliates of mega coffee shops (Shaw, Kim & Hua, 2020, p. 9-10). The rent burden of small businesses was alleviated, and the local economy was tried to be revived and a

culture of cooperation was tried to be developed. Small businesses that paid attention to social distancing were supported and the financial losses caused by the decrease in sales were tried to be eliminated. (Ministry of the Interior and Safety, 2020, p. 8-9). Many local governments in Korea provided living expenses support to people experiencing economic difficulties due to COVID-19. Jeonju City was the first local government to launch the Jeonju-type disaster-related basic income. As of March 1, 2020, it started providing living expenses support to citizens aged 15 and over with an address in Jeonju City. Citizens were required to apply with a copy of the residence record, a proof of the health insurance payment and a confirmation of health insurance status. Local governments established policies to assist young businessmen and workers in specific types of business, self-employed and arts and cultural professionals. Seoul Metropolitan City gave emergency allowances to young people who lost their jobs due to COVID-19 and sought to help young workers overcome the economic crisis through support programs. Also, artistic activities hit by COVID-19 were remedied, thanks to the Seoul Metropolitan Government arranging productions of online performances and covering the costs of online broadcasting. In addition, Gwangju Metropolitan Municipality supported the artists by running the "YouTube Home Arts Theatre" (Governors Association of Korea, 2020). Goyang City organized an emergency task force to combat COVID-19. Initially, the city raised 10 billion KRW of funds and incentive measures were taken to address the economic problem and promoted the employment of the economically vulnerable class. The team consisted of about 200 people and struggled with the disease in vulnerable places. The city of Goyang was the first municipality in the country to offer a 50% reduction in the water and sewer bill for 3 months for small business owners and farmers. The local government set up a fund to provide basic supplies (rice, bottled water, side dishes, ramen, etc.) to people in quarantine with a budget of 15 million KRW. Goyang local government cut the water supply bill by 50% for more than 60,000 businesses and companies and reduced the loan interest rate by 50% for loans worth around KRW 20 billion. Starting from February 14, Valentine's Day, for about 1 month, the city of Goyang runs flower promotions for florists affected by COVID-19. To minimize the risk of infection while selling fresh and high-quality local agricultural products to the citizens and to help farmers who have difficulty in selling their products, "Agricultural Produce Drive Through Store" campaign was launched. Citizens showed the great interest in the products, which were sold in sets of 5 and 7 pieces, which were sold cheaper than the market price, and were sold out in 1 hour (United Cities and Local Governments Asia-Pacific, 2020).

CONCLUSION

South Korea experienced some health disasters coming from overseas such as severe acute respiratory syndrome in 2003, swine flu in 2009, and Middle East respiratory syndrome in 2015. With the help of the experience, South Korea enacted the Infectious Disease Control and Prevention Act, authorizing the Minister of Health and Welfare to launch the five-year systematic strategy for communicable disease containment and prevention. Based on this strategy, every local government created and applied an implementation plan for communicable diseases in the municipalities. Although South Korea was relatively prepared for the COVID-19 pandemic that emerged in 2020, new measures were needed as the COVID-19 pandemic was a global and rapidly spreading pandemic. South Korea's rank in the new technology and the Korean hybrid public administration approach were combined, and Korean people, local governments and the state together put up an effective fight against COVID-19. The Confucian tradition has changed over time in Korea. South Korea has state institutions based on separation of powers like Western countries. Although South Korea uses Confucian teachings in the public administration, it has also created a unique hybrid structure by using Western teachings as the new public administration and Weber type teachings. Korea's modern public administration is rooted in the traditional Confucianism, the Japanese colonial

background and the American public administration. Democracy and human rights, aided by the effective governance, transparency and the rule of law, have become South Korea's core values. South Korea's teachings of Confucianism and the West's new understanding of the public administration merged, and the institution of the public administration moved from centralization to decentralization. Especially in the COVID-19 crisis, the role of local governments has come to the fore. Acting basically according to the directives of the central government, South Korean local governments have kept up with the extraordinary conditions brought by COVID-19 and have been able to take the initiative from time to time by keeping up with the rapidly changing conditions of the pandemic. In this process, the network guided by the traditional public administration was re-evaluated. South Korean authorities have applied quarantine measures to protect and flourish the urban planning and public health. From a public health perspective, South Korea has implemented the aggressive testing, contact tracing and the usage of masks in order to take COVID-19 under control. The health restrictions caused the deterioration of the human psychology and the state had to provide the psychological support to patients. COVID-19 directly affected the foundations of the urban planning practices as well as public health. South Korean cities could be protected against COVID-19 by integrating social behaviors into urban planning and public health from a health perspective. Smart city technologies have been utilized for patient tracing and contact tracing systems in South Korea and were built to enable authorities to share the urban planning information, from traffic to pollution, by uploading data in Excel spreadsheets and other formats. For an effective, efficient and fair pandemic response in South Korea, the hierarchy, market, innovative public administration, self-quarantine support and management, local economic recovery and transparent information disclosure, which existed to achieve different purposes at different times, were evaluated and their most useful features were taken.

Compliance with Ethical Standard

Conflict of Interest: The author declares that there is no conflict of interest.

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