



Print ISSN: 1738-3110 / Online ISSN 2093-7717  
 JDS website: <http://kodisa.jams.or.kr/>  
<http://dx.doi.org/10.15722/jds.18.11.202011.41>

# The Distribution of New Town Development Paradigm against COVID-19: Lessons and Prospects\*

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Received: September 16, 2020. Revised: October 14, 2020. Accepted: November 05, 2020.

## Abstract

**Purpose:** This article aims to explore the new town development paradigm against infectious diseases. The distribution of COVID-19 constricts economic activity. The high frequency of outbreaks of COVID-19 nationwide is due to neither malnutrition nor unhygienic environment. **Research design, data and methodology:** The research question starts with the idea that understanding the features of the outbreak of pandemic diseases could help public health authorities to better cope with upcoming risks in the future. We have employed a big data-based methodology to explore the outbreak of pandemic diseases. Also, an idiographic approach is used to describe the distribution of new towns against COVID-19. **Results:** The results demonstrate that the rapid spread of COVID-19 has had a strong impact on regional economies and urban development. It was found that there is a close relationship between infectious diseases outbreaks and new town development. **Conclusions:** The findings could be used to deal with new town development against infectious diseases better in other cities or countries as well. The distribution of COVID-19 may become an unexpected opportunity for a paradigm shift in the distribution of new town development to prevent not only an excessive concentration in Seoul, but also an imbalance between national and local development.

**Keywords:** Distribution, COVID-19, New Town Development, Climate Change, Distribution of Urbanization, Risk Society, Real Estate Development

**JEL Classification Codes:** I15, I18, O15, O18, O2

## 1. Introduction

COVID-19, once regarded as just a slight cold, has completely changed our daily life pattern. The distribution of coronavirus pandemic reduces social and economic

activity, which is likely to bring about a drop in trade volume. Although many countries have not enforced a lockdown, the socioeconomic activities declined sharply after the health authorities ordered the closure of shops, cafes and other small businesses. Since the first COVID-19 case was confirmed in the quarantine process of entrants from Wuhan City, China at the National Quarantine Station in Incheon Airport on January 19, 2020, the cases increased to 21,743 as of September 10, 2020, and the COVID-19 has spread nationwide. Although fatality rate (No. of deaths/No. of confirmed cases) is less than 2%, life pattern had to be rapidly changed due to pandemic management including that moving paths of confirmed cases are made public and self-quarantine is carried out. Above all, fact-to-face contact raising infection risk has to be avoided and high segregation and control at community, area, and national levels, as well as compliance with personal hygienic rules, require human settlements far different from the past (Khan, et al., 2020).

As cities have such a feature as highly concentrated

\* This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2019S1A5A2A01035379). This paper was based on the title of "The New Town Development against COVID-19" of Uninomic Review 3(4).

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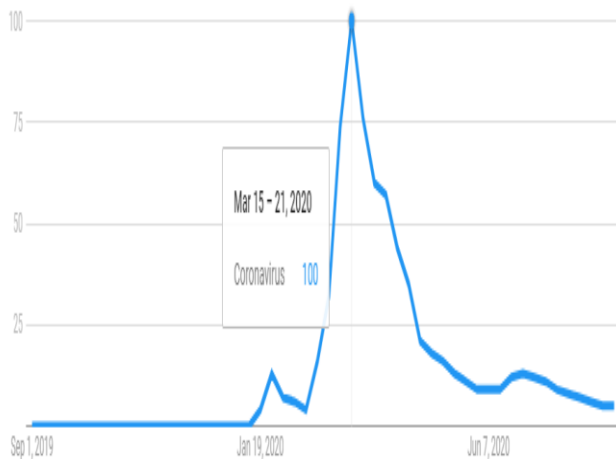
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spatial development, namely, concentrated facilities are activities are carried out in narrow spaces, infectious diseases have been a serious threatening factor to cities historically. In modern era when cutting-edge science and technology develop day by day, such a threat has continued, and the distribution of COVID-19 has fortified its threat.

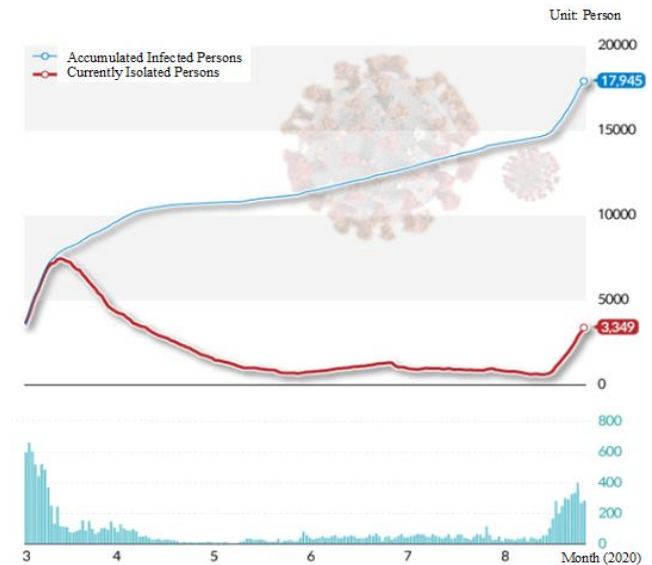


**Figure 1:** Trend of COVID-19 Observed through Big Data  
Source: <https://trends.google.com/trends/explore?q=%2Fm%2F01cyy&geo=US>

## 2. Distribution of the COVID-19 and the Change of Human Settlements in Risk Society

COVID-19 spreading worldwide showed the most high interest index in the Google big data analysis in March 2020. When looking at the trend of Korea's confirmed cases, the COVID-19 showed a rapid spread by group confirmed cases by Shincheonji believers in March, and then showed a lull. But, COVID-19 has quickly spread again since August 2020. As of September 10, 2020, 30 million confirmed cases and one million deaths worldwide clearly show the really powerful influence of COVID-19. Given that an infectious disease that broke out in a city, China affects the whole world within a year, we can easily guess its temporal and spatial ripple effect and influence.

Infectious diseases such as COVID-19 are a highly influential factor that can innovatively change future urban development, in addition to rapid change of human settlements in cities (Kim & Lee, 2020). Urban development receives pressure to give up physical integration and highly concentrated development nowadays to properly cope with infectious diseases threat, and also faces a new phase, namely intact eco-spatial development beyond past development paradigm.



**Figure 2:** Current Status of Confirmed Cases of COVID-19 in Korea

Source: <http://www.newspim.com/news/view/20200825000408>

## 3. Threat of New Town Development and Risk Society: Distribution of Urbanization and Advent of Climate Change

The relationship between human city history and infectious diseases is familiar to us. The reason is because the spread of various types of infectious diseases has existed behind the everlasting history of splendid modern cities. Urban human settlements and urban dwellers had to make enormous sacrifices historically due to infectious diseases or pandemics such as typhoid, cholera in Europe, and influenza in Spain. Although city spaces in dense spaces provide favorable environment to economic activities, they also offer very favorable environment for the spread of infectious diseases. Many social activities carried out in urban dense spaces have worked as a threatening factor that increases contact opportunities, which promotes the spread of various viruses. This was revealed as a fact through epidemiological survey (Choi, 2018; Choi, 2008).

When looking at disasters and accident types in Seoul that occurred during the past 600 years, they were not much different from the category occurring nowadays. From the Joseon Period to modern days (after independence from Japanese colonial rule in 1945), many damages existed due mainly to floods, earthquakes, infectious diseases, and famine. Most of all, the period showing remarkable features in the disaster and infectious disease phase in Seoul was the modern days (from 1945 until now). As changes in Seoul

for the past dozens of years were bigger than hundreds of years in the past, more dynamism seems to be more natural. The Korean War in which thousands of people lost their lives broke out after Korea's independence from Japanese colonial rule, and so the outbreak of infectious diseases amid co-existence of political instability and economic growth has shown a very dynamic phase alongside urban growth (Kim, 2014; Baek & Kim, 2020; Choi, 2018).

Even though cutting-edge medicine and science & technology of modern society are used to control and cope with various pandemics, damages from them do not disappear, but those pandemics spread and damages from them increase. Although difference in human perspectives on infectious diseases exists depending on various times, a common feature exists in that ceaseless efforts have been made to cope with pandemics (infectious diseases) through long period of observations and experiences, while humans have watched the change of infectious diseases (Choi, 2013). Infectious diseases have spread alongside urban growth, and they include fierce adaptation process historically. The reason why new town development should be carried out in consideration of the COVID-19 pandemic situation lies here.

Infectious diseases can be a more threatening existence alongside global trend of urbanization and climate change, and the reason is because they give direct and fatal influences to human health, not to mention everyday human lives. The infectious diseases play a role in increasing temporal and spatial uncertainties, and also those uncertainties play a role in increasing and spreading risks.

When global temperature rises and human settlements become hotter and more humid, the planet becomes a better environment for infectious disease media such as mosquitoes, rats, fleas, flies, and ticks. Therefore the spread of infectious diseases by those media is worried. Scholars point out that the advent and spread of new infectious diseases have a possibility to cause climate change and ecological change. IPCC warns that tropical infectious diseases such as malaria can spread worldwide, as average global temperature rises by 1°C, and WHO (World Health Organization) reported that the habitat of mosquitoes increases by more than 40%, as earth surface temperature rises by 2°C. Infectious diseases have co-existed alongside humans for a long time in history like disaster risks. Infectious diseases have been overcome to some degree due to science and technology development, but they are recognized as number 1 target for vigilance that threatens human lives in the risk society where urbanization and climate change accelerate. Because a view that MERS that placed the Korean Peninsula in fear affected more severe damage to national economy than the Sewol Ferry Disaster was dominant, we need to remember huge impacts of MERS to society (Choi, 2018).

Before the COVID-19 broke out, an infectious disease,

MERS placed Korea in fear in 2015. MERS that mainly broke out in Middle East, the desert area, and then spread arrived and in modernized Seoul and spread and incapacitated some hospitals equipped with cutting-edge medical facilities. From this, people notice that infectious diseases are no longer the exclusive property of underdeveloped countries. The spread of the infectious disease in international city, Seoul, is a critical issue that can determine national competitiveness. Since the cause was neither the outdated hygienic system problem nor malnutrition, there is a need to more seriously handle the message of spread of an infectious disease in the modern city. It is more so as infectious diseases are familiar unwelcome guests that have threatened citizens in the rapid development process of cities. Because the spread of infectious diseases in cities enormously affects national and regional economic invigoration and development policies, and the meaning of discourse on new town development and infectious diseases is greater (Choi, 2018).

#### **4. Distribution of New Town Development Coping with COVID-19**

Powerful government policies to stabilize real estate markets are continuously presented. All real estate taxes including acquisition, holding, and transaction taxes are raised, and apartment supply policies to stabilize real estate markets are continuously announced. At last, the plan to supply third phase new towns has appeared. Starting with the first phase new town development in Bundang, Ilsan, Jungdong, Pyeongchon, and Sanbon for the solution to the lack of development site in urban area in the latter part of the 1980s, the second phase new town development in Gimpo, Geomdan, Dongtan, Godeuk, Gwanggyo, Pangyo, and Wirye was carried out to prevent real estate price hike in Seoul in the early 2000s. The second phase new town construction is still underway, as it was not completed. Many people criticized the second phase new towns as most of them have low accessibility to Seoul, and transportation infrastructure is inferior, and so oversupply was made compared to demand. Third phase new town development asserts GTX (great train express) for improvement of accessibility to Seoul and industrial complex supply for self-sufficiency to overcome pending problems. It contains details to supply 300,000 households in Wangsuk and Gyosan for housing market stabilization. Aside from a discussion that new town development can be helpful to solve Seoul Metropolitan Area problems, this study focuses on discussions on whether the development can protect citizens from infectious diseases.

Consecutively performing new town development around Seoul to ease concentration in Seoul may not be

desirable for the long-term from infectious disease management perspective, as it can damage green zones and decline environmental quality. Especially infectious diseases in highly-dense developed areas have huge ripple effects on the citizens' lives and communities, and so consideration of low-dense new town development to cope with infectious diseases in risk society can be essential.

According to the population and housing census by the Korea National Statistical Office, Korea's population was 51.78 million as of November 2019. About a half of them live in Seoul Metropolitan Area, which has already surpassed 50% of whole population of South Korea. What needs to be noted is that continuous investments are made to ease concentration of population to the Seoul Metropolitan Area including Seoul, Gyeonggi, and Incheon. Investments to lessen overheat of real estate markets in Seoul Metropolitan Area, namely gap between Seoul Metropolitan Area and non-Seoul Metropolitan Area, are still made in Seoul Metropolitan Area.

New town development around Seoul to supply housing in order to ease concentration to Seoul Metropolitan Area and stabilize real estate markets results in expansion of investments in Seoul Metropolitan Area and offering better infrastructure. It is also connected to unbalanced investments to make Seoul Metropolitan Area a better space to live in than non-Seoul Metropolitan Area. It can be altered to a policy to supply apartments in more highly concentrated areas in order to supply housing in more highly dense Seoul Metropolitan Area. This may deteriorates the quality of life in Seoul Metropolitan Area, expose human settlements to infectious diseases due to excessive density, and also it can be a tool to break a will of local governments to try to rehabilitate after the execution of the local government system.

## **5. Strategies Coping with Infectious Diseases and the Distribution of New Town Development in a Risk Society**

Despite remarkable science and technological development, disasters and accidents against humans continue, and there are lots of unpredictable aspects, and their patterns and intensity are diversified. Since the modern society is a high-risk technology society, we need to notice that the risks such as infectious diseases cannot be completely removed, no matter how science and technology develops in the modern society. World Health Organization (WHO) warns to prepare for the advent of new infectious diseases, and each country cannot reduce tension. People should note that they overlook civilization formed on the basis of scientific rationality can be a reproduction process of risks. This is in line with the normal accidents theory of

Perrow (1999) insisting that no matter how modern society is enhanced on the basis of cutting-edge science and technology, and safety devices are equipped with, accidents are unavoidable.

In the highly risky technological society, various types of risks can enormously affect national and urban functions. Especially infectious diseases such as COVID-19 can completely change the pattern of life including politics, economy, society, and culture. Responses to infectious diseases (pandemics) so far cast a sense of frustration, that is discussions and discourse of humanities and social sciences on humans and communities are not mature in terms of public health, as the responses have focused on science and technology approaches. Infectious diseases shake community relations, and depression due to coronavirus has become universal to the extent that depression from COVID-19 can be acknowledged as a new disease code because of severe mental stress. It is time that COVID-19 needs to be identified as part of everyday life and those studies from the social science and humanity perspective are judged to be necessary.

Despite a goal to reduce gap between Seoul Metropolitan Area and non-Seoul Metropolitan Area for balanced national development, government policies and budgets are still continue to focus on Seoul Metropolitan Area, which can be an ironic phenomenon. In a situation that not only people born in Seoul Metropolitan Area, but those born in provinces prefer to live in Seoul Metropolitan Area, continuous investments in Seoul Metropolitan Area can fix the unbalanced national situation. This can be a judgment error offered by a stereotype idea that the key to solve the problem lies in only Seoul Metropolitan Area. Although the key is not headed toward non-Seoul Metropolitan Area, it can be desirable to execute the policy for non-Seoul Metropolitan Area. Efforts and budgets for new town development should steadily be made and spent for policy development and budget investment for invigoration of local cities.

## **6. Conclusion: Toward Distribution of New Town Development Paradigm Shift**

What is interesting is that compact cities recognized as a successful urban development paradigm have changed to very vulnerable to the COVID-19. The reason is because the pattern of a compact city promoting integration benefits occurring through more close economic activities in dense spaces has vulnerability to disasters that may accelerate the spread of infectious diseases. In the uncertain situation in which vaccines and drugs for COVID-19 are not developed, the best policy is maintaining social distance to cope with the infectious

pandemic disease. What people need to pay attention is that urban development paradigm should not be changed temporarily, as people need to prepare for another type of infectious disease outbreak, although the vaccines and drugs for the COVID-19 are developed in some time. To reduce risks for the long-term, distribution of development paradigm change appears to be necessary, that is, to develop in a low-dense way, while the location of new urban development should head toward the non-Seoul Metropolitan Area.

This paper suggests the next-generation urban development patterns in the era of COVID19. We attempted to clearly outline Korea's new towns development policies as the dispersion of population of their "mother" city, that is Seoul. When natural disasters or infectious diseases hit highly populated places, the level of damage would be higher, relative to less denser cities. In order to make such highly-dense cities as being resilient to tragic events, we might reach the conclusion that it is needed to make our cities somewhat dispersed.

However, we should think hard about the meaning of dispersed urban space in terms of the level of resilience. When there are few neighbors around the people who are affected by the pandemic, it would be longer for those to be recovered. Therefore, we need to develop complementary measures to swiftly provide remedies to remote urban and rural population. Information technology and other cutting-edge communication devices can help it. It can be a suitable time to emphasize more on how we prepare our dispersed cities for COVID-19 in a longer term.

To make a safe society from risks, discourse on risk society and science and technology is needed. A variety of discussions and discourse on how people should perceive risks such as an infectious disease like COVID-19 dynamically occurring in a risk society, how countries and cities should block the spread of the risks and cope with them, and what the role of science and technology should be to reduce the risks need to be performed. Harmonious co-existence between urban development and science and technology that can cope with infectious diseases such as COVID-19 can become a driving force to lead desirable urban development in the COVID-19 era. The spread of COVID-19 may become a catalyst of urban development paradigm to prevent concentration to Seoul Metropolitan Area and a new momentum for enhancing balanced national development.

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