Dear Reviewer #1,

I am grateful for your suggestions regarding my paper, and my answers to your comments are provided below.

#1. The abstract is very confusingly written and needs a lot of editing. This is the place where the story must be told as simply and clearly as possible, and I think a lot of the abstract is confusing and hard to interpret.

The confusingly written part has been simplified again. In addition, in order to solve the problem of awkward English, we have re-translated the entire sentence.

#2. I have some theoretical questions about the applicability of these approaches outside of Korea. For technical reasons (most smart cities have less capability and are less developed than Korean ones), but especially for legal and normative reasons (concerns about surveillance, governance, cybersecurity, etc.) I think many cities and countries will not be comfortable with this approach. I think this needs some exploration.

As your comments, Korea's smart city has technological and normative advances compared to other countries. However, we think that the USA and China are more developed in service than Korea`s (Smart city trends: A focus on 5 countries and 15 companies, Cities, 2022). Therefore, this paper intends to cover only general smart city technologies worldwide (Smart city trends: A focus on 5 countries and 15 companies, Cities 2022). We fully agree with the reviewer's comments that they may feel uncomfortable in other countries. After that, we will do more research and expand the case to other countries. Thank you very much for your comments.

#3. I'd argue that one of the areas in which Smart City applications (in particular) and urban automation (in general) have been most important during the COVID pandemic - the monitoring of sewage and wastewater for population level assessment of infection - isn't even mentioned. I think that is both a big oversight, and an opportunity for critics. I think that piece needs to be included and worked into any assessment of smart cities and pandemics. Additionally, I've included a few other pieces on COVID and smart cities.

In this paper, the monitoring of sewage and wastewater for population level assessment of infection mentioned in smart city applications and urban automation was added as a limitation of this study. In the opinion of reviewers, epidemics in cities are not simply spread by one factor. Therefore, various factors should be dealt with, but in this paper, only heat and movement lines, which were mainly dealt with in Korea. The added part is as follows.

> 4. Conclusion: "… Also, epidemics in cities are not spread simply by one factor. It is important to operate the monitoring system for sewage and wastewater for population level assessment of infection, which is considered to be the most important source of infection.

Therefore, they should be considered in future research. “

1) Confusing or awkward wording in the abstract:

The text has been modified as follows:

#1. ″Additionally, smart city services couldn`t respond in-time series” (is this time series in the statistical sense? Just meaning sequential?)

Additionally, smart city services could respond neither timely nor sequentially.

#2. ″a method responding in-time sequential by flexibly combining”

This study proposes a method for timely and sequential responses, through a flexible combination of the healthcare system and smart city services.

#3. ″Second, flexible smart city services are combined and deleted as needed to cope with COVID 19 has 17 been summarized. Third, smart city services should only be used to cope with pandemic situations: 18 the healthcare-system data consists of personal information. Therefore, smart city services respond- 19 ing COVID-19 must exist as a flexible.”

Second, recommendations on combining or dismissing certain smart city services, as per the needs of coping with COVID-19, are summarized. Third, smart city services must be utilized only for addressing pandemics, as data from the healthcare system consists of personal information. Therefore, smart city services for responding to COVID-19 must be flexible.

2) Theoretical/Substantive questions:

#1. (pg2) Does the use of police/telecom monitoring of patients translate out of the Korean context? (i.e. would it be constrained by laws and norms elsewhere?) And what are the implications of this.

In the case of Korea, rather than finding the infected person in advance, the focus was on identifying and blocking the spread of the infected person. Therefore, Smart City Service checked the movement of the infected people by time, found close contacts in the vicinity, and took measures to self-quarantine immediately. As a result, the critical point of being identified before an infectious disease spreads was missed. However, Korea has prevented a rapid collapse of the medical system by slowing the rate of propagation around it, and the role of smart city services has been significant in this regard.

#2. (pg3) Tables 1 is interesting, but it’s not clear the source of the data. Is this from the literature? (if so, needs sourcing), or a synthesis by the authors? This may be because of the error message

in sourcing in the document I received.

The source has been specified.

- (Smart city trends: A focus on 5 countries and 15 companies, Cities, 2022).

#3. (pg4) Table 3 isn't clear to me. What is "EA"? Not spelled out.

We have checked and corrected the Author's initials that you pointed out. We also Cognized that the expression 'EA' is a unit used only in certain countries. The 'EA' refers to the quantity, but all have been deleted. We sincerely apologize for the basic mistake. We will check in more detail later.

#4. (pg5) Table 4 is very useful.

Thanks for your kind comments.

#5. (pg14) "such services should be flexibly used only during a national crisis and removed when the service is no longer needed." Is this likely to happen? Are there concrete examples of such systems being built and operated, then just turned off? Who would oppose turning them off? (I'd imagine many stakeholders)

We also agree with reviewers that it's an ideal situation to use built-in services only when needed and turn them off when not needed. Therefore, in Korea, it is legally required to be used only when necessary.

> Ministry of Land, Infrastructure and Transport(Korea): "…… But the scope of data collected will be kept to minimum and a due procedure should be followed in acquiring the data. First, an epidemiological surveyor should decide whether additional collection of personal information is needed. If the answer is yes, the official should seek approval from relevant authorities to get access to the data. For example, as for the location information, separate permission from the National Police Agency is required."
>
> Source: http://www.molit.go.kr/english/USR/BORD0201/m_28286/DTL.jsp?id=eng_mltm_new&mode=view&idx=2931

3) Key missing components/literatures:

We rechecked the paper related to "Key missing components/literatures". We sincerely apologize for repeating basic mistakes. They all have been revised and reflected. Thank you.

#1. Smart City and COVID

Webb, W., & Toh, C. K. (2020). The smart city and COVID-19. IET Smart cities, 2(2), 56-57.

Inn, T. L. (2020). Smart city technologies take on COVID-19. World Health, 841.

Sharifi, A., Khavarian-Garmsir, A. R., & Kummitha, R. K. R. (2021). Contributions of smart city solutions and technologies to resilience against the COVID-19 pandemic: a literature review. Sustainability, 13(14), 8018.

Gusikhin, O. (2020). The Impact of COVID-19 Experience on Smart City and Future Mobility. In Smart Cities, Green Technologies, and Intelligent Transport Systems (pp. 308-321). Springer, Cham.

Kim, H. M. (2021). Smart cities beyond COVID-19. In Smart Cities for Technological and Social Innovation (pp. 299-308). Academic Press.

#2. Monitoring of sewage/wastewater for COVID case estimation

Farkas, K., Hillary, L. S., Malham, S. K., McDonald, J. E., & Jones, D. L. (2020). Wastewater and public health: the potential of wastewater surveillance for monitoring COVID-19. Current Opinion in Environmental Science & Health, 17, 14-20.

Daughton, C. G. (2020). Wastewater surveillance for population-wide Covid-19: the present and future. Science of the Total Environment, 736, 139631.

Bogler, A., Packman, A., Furman, A., Gross, A., Kushmaro, A., Ronen, A., ... & Bar-Zeev, E. (2020). Rethinking wastewater risks and monitoring in light of the COVID-19 pandemic. Nature Sustainability, 3(12), 981-990.

Jaiswal, R., Agarwal, A., & Negi, R. (2020). Smart solution for reducing the COVID-19 risk using smart city technology. IET Smart Cities, 2(2), 82-88.

Thank you again for your supportive review to improve the manuscript.

Yours sincerely,

The Authors