110-1 國立臺灣大學 時空資料視覺化 期末報告

2021-Fall NTU Spatiotemporal Data Visualization Term Project

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1. **R shiny link : https://r09228001.shinyapps.io/finalreport/**

2. **Introduction video link : https://youtu.be/NlgZ-3eXD4k**

3. **Poster link : https://ntucc365-my.sharepoint.com/:b:/g/personal/b04208034_ntu_edu_tw/EcOiNxoManNDnJ7fv59eGFsBfrWJfTndbd1UXXx3bxJZNg?e=FThh4K**

4. **Title : Spatial Patterns of Change in Suicide rate after COVID-19 in Japan**

5. **Literature Review :**

   It has been reported that COVID-19 influenced human's mental condition via a variety of aspect including fear of being infected, loneliness during self-quarantine and so on. In Japan, it has been reported that there were excessive suicide rate than the stable condition before the virus outbreak (Tanaka, T., Okamoto, S., 2021). However, the spatial pattern of COVID-19 induced suicide rate change wasn't been discussed. Accordingly, I am going to discuss the spatial pattern of suicide rate change in the 5 waves of COVID-19 outbreak in Japan.

6. **Research Questions :**

1. **What is the spatial pattern of changes in suicide rate after COVID-19 in Japan ?**

2. **Do places with more serious COVID-19 have more increasing suicide rate ?**

7. **Results :**

   I created several panels in my pages. Firstly, Introduction panels is for introduce 47 prefecture locations in Japan. Secondly, I showed time series of suicide count, suicide rate, change in suicide rate, adjusted change in suicide rate. Thirdly, Choropleths were made to investigate the spatial pattern of suicide index. Fourthly, data table with both suicide and COVID-19 are available on my page. Fifthly,　time series and choropleth of COVID-19 infected and death were plotted.

   Sixthly, which is the most important part, the bivariate maps of suicide and covid-19 were made. Finally, which is seventhly, author's page can link to my resume and my grad school lab.

8. **Discussion :**

   To answer my 1st question, with panel three, we can easily investigate the spatial pattern of change. In all sex, suicide rate drop in the 1st wave in most places but increase in the 2nd wave especially in the southern rural area. In the 3rd waves suicide rate remains increased in most places especially in western Japan. The 4th wave experienced mild change but in the 5th wave, suicide rate drop in most of places.

   To answer my 2nd question, with panel six, we can easily spot the relation between change in suicide rate and COVID-19 infected or death rate. If we change break

methods to "Equal Break", we can see throughout 5 waves of COVID-19, in 2nd, the High-High areas are very little, which indicated that Suicide rate didn't necessary change with COVID-19 infected or death condition. The High-High phenomenon can be found in Kyusyu, Shikoku and Honshyu, especially in rural prefectures.

9. Data:

1. Suicide Data : Source :Ministry of Health, Labour, and Welfare, Japan. Website : https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000140901.html

2. COVID- Data : Prefecture-level COVID-19 infected and Death data: NHK. Website : https://www3.nhk.or.jp/news/special/coronavirus/data/

10. Reference:

Tanaka, T., Okamoto, S. Increase in suicide following an initial decline during the COVID-19 pandemic in Japan. Nat Hum Behav 5, 229–238 (2021). https://doi.org/10.1038/s41562-020-01042-z

11. Appendix 1 : Snapshot on Facebook

12. Appendix 2 : Poster

Poster link : https://ntucc365-my.sharepoint.com/:b:/g/personal/b04208034_ntu_edu_tw/EcOiNxoManNDnJ7fv59eGFsBfrWJfTndbd1UXXx3bxJZNg?e=FThh4K

Spatial Patterns of Change in Suicide rate after COVID-19 in Japan

NTU Geography, Yang Yu Hsiang

Webpage link : https://r09228001.shinyapps.io/finalreport/

Research Questions :
1. What is the spatial pattern of changes in suicide rate after COVID-19 in Japan ?
2. Do places with more serious COVID-19 have more increasing suicide rate ?

Panel Guide:

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Fig.1 Interactive Panel

Fig.2 Data Table

Fig.3 Time Series Analysis

Fig.4 Interactive Choropleth

Discussion :

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