

Mapping the potential pattern of Covid-19 disease risk using spatial analysis in Kota Kinabalu, Sabah

ABSTRACT

Movement Control Order (MCO) has been declared in Malaysia on 17th Mac 2020 to break the chain of the COVID-19 pandemic. Since at that time, no vaccine was made to cure the disease, therefore, the MCO was the best method implemented by many countries to minimize or eradicate the disease. COVID-19 is a contagious disease that can be easily contracted to others based on touch, mouth, nose, and eye. Thus, physical distance from each other must be applied and crowded places must be avoided. However, people tend to violate the MCO ruling and the physical distance. This was evident based on the record from phase 1 to phase 5 of MCO in Malaysia. The number of COVID-19 positive cases were decreased during the early phase of MCO but gain traction in phase 4 and 5. At the same time, the total of manpower in the authority is limited and it was difficult for them to monitor in all places. The geographical factors and the distance were also some of the challenges that they must face to make sure the people follow the MCO ruling. The aim of this study is to analyze the spatial distribution of the location factors that the people frequently visited with the help of spatial analysis through Geographic Information System (GIS). By using the Getis-Ord G_i^* (hotspot), Kernel density and Overlay technique from the spatial analysis method, this study could then produce a density map of potential COVID-19 risk. Subsequently, this study manages to identify the area of potential risk of COVID-19 that can be contracted and validate it with the current location of the positive cases in Kota Kinabalu district of Sabah. Lastly, the findings of this study are suitable for the authorities to act and mainly focused the spreading of COVID-19 in the high-risk area.