Mapping of Population Behaviour During the Early Phase of COVID19 Disease Spread in Kota Kinabalu, Sabah Using PCA-GIS

ABSTRACT

Coronavirus 2019 (COVID19) has now become a pandemic. In the early stages of the pandemic, Kota Kinabalu was one of the districts in Sabah with the greatest number of COVID19 positive cases. Despite the government's announcement of the Movement Control Order (MCO), some residents were unable to follow the rules. As a result, the number of COVID19 positive cases in Sabah has increased, particularly in the Kota Kinabalu district. The increase of COVID 19 cases is indeed influenced by the behavior of the population in a place. The behavior of the population during previous pandemics has already shown how human attitudes can affect the spread of disease in the area. In Sabah, it is also seen to occur, such as violating the movement control order. Due to a shortage of manpower, it is difficult to identify and monitor residents who violate this MCO. Geographical factors in Sabah are also among the reasons why authorities find it difficult to keep control over all areas. In addition, the lack of technology, such as Geographic Information System (GIS), has made it difficult for authorities to monitor all locations. As a result, using Principal Component Analysis (PCA), this study was undertaken to identify the primary determinants of population behaviour that cause the spread of COVID19, which was then mapped using Geographic Information System (GIS). Only zones that registered positive cases of COVID19 from March to August 2020 were included in this study, which included a total of 100 respondents in the Kota Kinabalu area. Population behaviour, factor location, and responder location are among the data sources. To investigate the pattern of population behaviour in Kota Kinabalu, this study used factor analysis using PCA and the classification method using GIS. The study's findings include a behaviour pattern map for the Kota Kinabalu district, which influences COVID19 distribution in the early phases of the pandemic. This study can assist various parties in identifying a potential area in Kota Kinabalu that has a high risk of COVID19 infection.