ABSTRACT

In 2018 an air quality station was built, located on rooftop of the Public Lecture Building and Deli Building, Telkom University (-6,970, 107,629), with elevations of around 650 and 670 m above sea level. This station uses low cost sensors $PM_{2.5}$, CO_2 and is equipped with meteorological measurements. The system use an Internet of Things (IoT) based modem to transfer data over the internet every 2 minutes. The measurement location is affected by local pollution such as housing, transportation, and industry. However, along with the spread of COVID-19 in Indonesia, since March 2020 air quality has been affected by various preventive measures from the government. In this study, air quality observations ($PM_{2.5}$, CO_2) were carried out when the policy was implemented in stages. This study uses a two-sample t test to show the effect of air quality on policy. The results showed that the concentration of CO_2 increased 4.96% - 14.93% when compared to the previous year. The increase occurred due to changes in CO_2 concentration which were not significant when there were changes in natural conditions around. In addition, a very small change in CO_2 concentration is not visible to the sensor because it has an accuracy value of ± 50 ppm. Meanwhile, the concentration of $PM_{2.5}$ decreased by 50% - 67% when the WFH and PSBB policies were implemented. The decrease in $PM_{2.5}$ concentration also occurred in several big cities that implemented lockdown policies. This decrease in concentration is due to the policy carried out by the government making urban activities that can increase $PM_{2.5}$ such as vehicles and industry stop.

Keyword : CO_2, COVID-19, Air Pollution, $PM_{2.5}$