

STATUS OF AIR QUALITY BEFORE AND DURING REINFORCEMENT OF MCO DUE TO COVID-19 OUTBREAK IN CENTRAL AND SOUTHERN REGIONS OF PENINSULAR MALAYSIA

(Status Kualiti Udara Sebelum dan Semasa Pelaksanaan Semula PKP disebabkan oleh COVID-19 di Daerah Tengah dan Selatan Semenanjung Malaysia)

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ABSTRACT

The first confirmed case of Coronavirus-19 (COVID-19) in Malaysia was reported on January 25, 2020, and the number of cases has been steadily increasing since March 2020. To minimize the spread of COVID-19, the Malaysian government implemented a Movement Control Order (MCO), effective on 18 March 2020. The MCO was extended multiple times and has, at times, switched to either the Conditional Movement Control Order (CMCO), the Recovery Movement Control Order (RMCO), or the Enhanced Movement Control Order (EMCO). As a result, there were fewer motor vehicles on the road, and industry operations were halted, resulting in lower hazardous emissions. Therefore, this study intends to investigate the air quality index (AQI) before and during MCO implementation. Air pollution has become a more worrisome problem in urban areas, especially from vehicle discharge. The data set of the daily average AQI in Kuala Lumpur, Petaling Jaya, Putrajaya, and Johor Bahru was analyzed using the paired t-test and independent t-test. The analysis showed that the AQI of the cities is normally distributed. The result showed a significant difference in daily AQI before and during the reimplementation of MCO in Kuala Lumpur. Apart from that, a comparison between urban areas with MCO and without MCO only shows a significant difference between Kuala Lumpur and Johor Bahru. The finding revealed that MCO is capable of reducing the AQI in Kuala Lumpur. Therefore, the government can plan strategies that are related to reducing the number of activities and carbon emissions such as increasing the utilization of public transport.

Keywords: air quality index; MCO; urban area

ABSTRAK

Kes Coronavirus-19 (COVID-19) yang pertama disahkan di Malaysia dilaporkan pada 25 Januari 2020, dan jumlah kes telah meningkat sejak Mac 2020. Bagi mengurangkan penularan COVID-19, kerajaan Malaysia melaksanakan Perintah Kawalan Pergerakan (PKP) berkuatkuasa pada 18 Mac 2020. PKP dilanjutkan beberapa kali dan beralih ke Perintah Kawalan Pergerakan Bersyarat (PKPB), Perintah Kawalan Pergerakan Pemulihan (PKPP), dan Perintah Kawalan Pergerakan Diperketatkan (PKPD). Ini mengakibatkan terdapat bilangan kenderaan yang sedikit di jalan raya, dan operasi industri dihentikan, mengakibatkan pengurangan pelepasan gas berbahaya. Oleh itu, kajian ini bertujuan untuk menyiasat indeks kualiti udara sebelum dan semasa pelaksanaan PKP. Pencemaran udara menjadi masalah yang membimbangkan di kawasan bandar, terutamanya dari pelepasan asap kenderaan. Purata harian indeks kualiti udara di Kuala Lumpur, Petaling Jaya, Putrajaya dan Johor Bahru dianalisis menggunakan ujian-t berpasangan dan ujian-t tak bersandar. Analisis menunjukkan bahawa indeks kualiti udara adalah tertabur secara normal. Hasil kajian mendapati bahawa terdapat perbezaan yang bererti dalam indeks kualiti udara harian sebelum dan semasa pelaksanaan PKP di Kuala Lumpur. Disamping itu, perbandingan di antara kawasan bandar yang dikenakan PKP dan tidak dikenakan PKP menunjukkan perbezaan yang bererti di antara

Kuala Lumpur dan Johor Bahru. Hasil kajian juga menunjukkan bahawa PKP dapat mengurangkan indeks kualiti udara di Kuala Lumpur. Sehubungan itu, kerajaan dapat merancang strategi yang berkaitan dengan pengurangan jumlah kegiatan dan pelepasan karbon seperti meningkatkan penggunaan pengangkutan awam.

Kata kunci: indeks kualiti udara; PKP; kawasan bandar

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