



## The Impact of Movement Control Order (MCO) during Pandemic COVID-19 on Local Air Quality in an Urban Area of Klang Valley, Malaysia

Mohd Shahrul Mohd Nadzir<sup>1\*</sup>, Maggie Chel Gee Ooi<sup>2</sup>, Kemal Maulana Alhasa<sup>3</sup>,  
Mohd Aftar Abu Bakar<sup>5</sup>, Anis Asma Ahmad Mohtar<sup>1</sup>, Mohd Fadzil Firdzaus Mohd Nor<sup>6</sup>,  
Mohd Talib Latif<sup>1</sup>, Haris Hafizal Abd Hamid<sup>1</sup>, Sawal Hamid Md Ali<sup>7</sup>, Noratiqah Mohd Ariff<sup>5</sup>,  
Johary Anuar<sup>9†</sup>, Fatimah Ahamad<sup>4</sup>, Azliyana Azhari<sup>1</sup>, Norfazrin Mohd Hanif<sup>1</sup>,  
Mohammed Ahmed Subhi<sup>7</sup>, Murnira Othman<sup>8</sup>, Mohd Zaim Mohd Nor<sup>9</sup>

<sup>1</sup> Department of Earth Sciences and Environment, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, Bangi 43600, Selangor, Malaysia

<sup>2</sup> Institute of Climate Change, Earth Observatory Center, Universiti Kebangsaan Malaysia, Bangi 43600, Selangor, Malaysia

<sup>3</sup> Institute of Climate Change, Space Science Centre (ANGKASA), Universiti Kebangsaan Malaysia, Bangi 43600, Selangor, Malaysia

<sup>4</sup> Institute of Climate Change, Centre for Tropical System and Climate Change (IKLIM), Universiti Kebangsaan Malaysia, Bangi 43600, Selangor, Malaysia

<sup>5</sup> Department of Mathematical Sciences, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600, Bangi, Selangor, Malaysia

<sup>6</sup> Institute of Ocean and Earth Sciences, IAS Building, University of Malaya, 50603, Kuala Lumpur, Malaysia

<sup>7</sup> Department of Electrical, Electronic and Systems Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, Bangi 43600, Selangor, Malaysia

<sup>8</sup> Institute for Environmental and Development (LESTARI), Universiti Kebangsaan Malaysia, Bangi 43600, Selangor, Malaysia

<sup>9</sup> Petaling Jaya City Council, Jalan Yong Shook Lin, 46675 Petaling Jaya, Selangor Darul Ehsan, Malaysia

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### ABSTRACT

The world is currently going through the COVID-19 pandemic which has caused hundreds of thousands of deaths in just a few months. Considering the need for lockdown measures, most countries, including Malaysia, have implemented ‘Movement Control Orders’ (MCOs) as a prevention step to reduce the deadly spread of this disease. Local and worldwide media have reported the immediate improvement of air quality due to this event. Nevertheless, data on the effects of MCOs on air quality at local scales are still sparse. Here, we investigate changes in air quality during the MCO at an urban area using the air sensor network *AiRBOXSense* which measures monoxide (CO) and particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>). In this study, air pollutant data during normal days were compared with MCO days using a reference analyser and *AiRBOXSense*. The results showed that the levels of the measured pollutants dropped by ~20 to 60% during the MCO days at most locations. However, CO in Kota Damansara (KD) dropped to 48.7%, but PM<sub>2.5</sub> and PM<sub>10</sub> increased up to 60% and 9.7% respectively during MCO days. Local burning activities in the residential area of KD are believed to be the main cause of the increased PM levels. This study has proven that air pollutant levels have significantly fallen due to the MCO. This air quality level information showed that the reduction of air pollutants can be achieved if traffic and industry emissions are strictly controlled.

**Keyword:** Movement Control Order; Carbon monoxide; Particulate matters.

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<sup>†</sup> Now at Petaling District and Land Office complex, 40150 Shah Alam, Selangor Darul Ehsan, Malaysia

\* Corresponding author.  
E-mail address: shahrulnadzir@ukm.edu.my

### INTRODUCTION

The World Health Organization (WHO) declared the COVID-19 outbreak as a pandemic on 11<sup>th</sup> March 2020 (WHO, 2016, 2020). In many countries, including Malaysia, a pandemic action plan has been announced by authorities.