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THE ROLE OF AIR POLLUTION IN THE SPREAD OF COVID-19: EVIDENCE FROM ROMANIA

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Abstract

The global crisis produced by SARS-CoV-2 affected health, economics, social activities, and the environment. In the SARS-CoV-2 outbreak worldwide, air pollutants could significantly contribute to the spread of the virus. The paper studies the relationship between air pollutants (PM_{2.5}, PM₁₀) concentrations and AQI variation and SARS-CoV-2 outbreak (average of cases per million inhabitants) in the case of Romania's counties. The methodology of the study is based on public open-source data concerning the emissions of air pollutants registered in the cities of Romania and the average of COVID-19 cases per million inhabitants. The findings of the study demonstrate that the highest numbers of COVID-19 cases were reported in the most polluted regions. A significant correlation between the levels of air pollution and the numbers of virus cases can be observed in most Romanian counties. The most affected counties by COVID-19 are also some of the most polluted counties in Romania. The study certifies the need for sustainable environmental policies that should be adopted fast in order to diminish the pollution's consequences on people's health. The findings show that new environmental, health and social strategies are needed. These refer to designing smart cities, with lower levels of air pollution; the development of new medical technologies and treatments; increasing social support and formulating coherent institutional policies for managing similar health crises.

Key words: air pollution, covid-19, particulate matter, virus spread

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