UNIVERSITI TEKNOLOGI MARA

AIR POLLUTION ASSESSMENT IN SOUTHERN PENINSULAR MALAYSIA

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ABSTRACT

Air pollution problem has become a major issue in Malaysia for the past two decades. Air pollution can be defined as the presence of toxic chemicals or compounds (including those of biological origin) in the air, at levels that pose a health risk. Air quality played an important role as polluted air could affect environment as well as property. Thus, this study focused on the air pollution assessment in Southern Peninsular Malaysia based on the data obtained from the Malaysian Department of Environment (DOE). The six major of air pollutants parameter (PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO and O_3) in five monitoring stations in Nilai(S_1), Seremban (S_2), Bandar Melaka (S_3), Kota Tinggi(S_4) and Pasir Gudang(S_5) were used. 43759 observations were measured hourly for the year 2018. Descriptive statistics used to determine the concentration of air pollutants in Southern Peninsular Malaysia whereas, Factor Analysis used to identify the most dominant air pollutant to the air quality in Southern Peninsular Malaysia. The result indicated that PM_{10} and O_3 had been exposed to the greatest concentration which overshoot the approval level of MAAQG. However, the value of concentration is not exceeding the hazardous level. Factor Analysis is carried out since the KMO value is 0.646 which is greater than 0.5. On top of that, the Bartlett's test also shows that the R-matrix is not equal to identity matrix since the p-value (p-value=0.000) is less than the significant value (α=0.05). It is confirmed that that the factor analysis is appropriate to be conducted. It is found that, PM_{10} and $PM_{2.5}$ were the most dominant air pollutant contributing to degradation of the air quality in Southern Peninsular Malaysia. It is hoped that the study will also help relevant authorities to get over all the air pollution issue by knowing the factors that causes air pollution affecting the air quality.

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TABLE OF CONTENTS