AIR QUALITY OF AIR-CONDITIONED AND NON-AIR-CONDITIONED BUSES IN SRI LANKA

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Abstract: Buses are a commonly used and cost-effective mode of public transportation. However, they present significant indoor air pollution risks due to their ability to accommodate a large number of passengers. This study seeks to evaluate and compare air pollution levels in air-conditioned and non-air-conditioned buses, focusing specifically on biological agents as a primary source of contamination. Key factors such as carbon monoxide (CO), carbon dioxide (CO2), humidity, temperature, and dust levels were meticulously assessed as crucial contributors to indoor air quality. Elevated levels of air pollution inside buses can result in increased passenger fatigue and a higher risk of disease. Data was collected through continuous air sampling in both types of buses over nearly three hours, revealing notable differences in dust content, a major contributor to indoor pollution, between the two types of buses. While carbon dioxide levels in air-conditioned buses remained relatively stable, fluctuating between 356 and 364 PPM, dust concentrations varied from 6 to 8 mg/m³. These findings underscore the dynamic nature of air quality in buses and its potential impact on passenger health.

Keywords: Air quality, Air conditioning buses, Non- air-conditioned bus, Temperature controlling in buses, Air quality inside