

## **Assessment on Traffic Noise Pollution Near Residential Area Located in Section 20 Shah Alam Selangor**

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### **Structured Abstract**

**Background:** Traffic noise pollution in residential areas has significant implications for public health and well-being. This study focuses on Section 20, Shah Alam, a residential area with increasing noise levels due to vehicular traffic. Noise pollution from traffic is linked to health issues such as stress, sleep disturbances, and cardiovascular diseases. The objectives of the study are to assess traffic noise exposure levels, measure traffic volumes, and analyze the relationship between noise levels and traffic density.

**Methods:** In achieving the study objectives, data collection was conducted over three days at three strategic locations within the study area. A Sound Level Meter (SLM) was used to measure noise levels, while manual vehicle counting tracked traffic volumes. The study employed linear regression analysis using SPSS software to investigate correlations between noise exposure levels and traffic volumes. Descriptive statistics and Pearson correlation were utilized to interpret the recorded data, including variables such as wind speed, relative humidity, and temperature, which could influence noise levels.

**Results:** The *L<sub>Aeq</sub>* levels in the residential area Section 20 Noise levels exceeded permissible limits set by the Department of Environment (DOE), with average noise levels ranging between 66.3 dBA and 76.8 dBA, surpassing the threshold of 60 dBA for residential zones. The results showed that cars dominated traffic volume at 75.7%, followed by motorcycles (18.47%), with heavy vehicles contributing less than 6%. In residential areas, the implications of these standards are significant, as noise levels often exceed recommended limits, leading to adverse effects on residents' health and quality of life. Additionally, a weak positive correlation  $R^2 = 0.237$  was observed between traffic volume and noise exposure levels, suggesting additional influences such as road conditions and vehicle type.

**Conclusion:** The study found that noise levels near residential areas in Section 20, Shah Alam, exceed the permissible limits set by the Department of Environment (DOE). In line with achieving the Sustainable Development Goals (SDG) on Reduced Inequalities (SDG 10) and Sustainable Cities and Communities (SDG 11), it is essential to address traffic noise pollution in residential areas. Strategies such as noise mapping, improved urban planning, and promoting quieter transportation options can help minimize the unequal impact of noise pollution, particularly on vulnerable groups like children and the elderly. Therefore, this study provides valuable insights for urban developers and community planners in creating quieter, healthier, and more sustainable residential environments.

**Keywords:** Traffic noise pollution, residential areas, noise exposure level, traffic density, vehicular traffic

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