

Assessment of Noise Pollution at Section 18, Shah Alam

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Structured Abstract

Background: Transportation noise is a major source of noise pollution. Traffic noise in residential areas poses health risks and affects the quality of life for the residents. Observing the number of transport vehicles traveling on the roadway has been in increasing trend over the past few years, hence it is crucial to research traffic noise and ensure the noise level is still within the acceptable range by referring to the standard. This study aims to measure the traffic noise exposure level, identify traffic volume, and analyze the relationship between noise levels and traffic volume in the residential area at Section 18, Shah Alam. The result will help understand the impact of traffic noise in residential areas and support efforts to reduce noise pollution.

Methods: In achieving the objectives of this study, the area monitoring was conducted using the sound level meter (SLM) to measure the noise exposure level, while traffic volume was measured by personal monitoring using a manual counting meter. Then, the data collection is being measured by conducting on-site monitoring and analysis by using Pearson Correlation by Statistical Package for Social Science (SPSS).

Results: In Section 18, Shah Alam, the measured close to residential areas has ranged from 59 dBA to 69 dBA. According to the Department of Environment Malaysia, the recorded level is higher than the acceptable limit of 60 dBA for the institutional area and 65 dBA for the suburban residential area. According to the study's findings, the highest noise levels were directly correlated with higher traffic volumes, especially during morning and evening rush hours when there were the most cars, motorcycles, and trucks on the road. Residents may be at risk for stress, sleep disturbance, and chronic health issues like hypertension because of such high noise levels. The findings emphasize the necessity of appropriate noise reduction techniques to lessen the negative effects of traffic on the residential neighborhood. Furthermore, this study indicates a moderate positive correlation between traffic volume and noise levels, where increased traffic volume contributes to slightly higher noise levels.

Conclusion: This study shows that all study sites experienced high noise levels that exceeded the maximum permissible limit, according to DOE guidelines. The results obtained from the volume of the vehicle study show that the car volume was much higher than that of other vehicles at all study sites. Therefore, it can be concluded that cars have played a huge part in contributing to noise emissions in residential areas. Lastly, the correlation between traffic noise and vehicle volume indicates the relationship between those two variables, as an increase in vehicle volume leads to higher traffic noise in Section 18, Shah Alam.

Keywords: Traffic Noise, Sound Level Meter, Pearson Correlation, Hypertension

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