

Assessment on Traffic Noise Pollution near Residential Area Located in Section 9, Shah Alam

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Structured Abstract

Background: Traffic noise is an important problem in the city's rural housing, causing stress, sleep disorder and various health problems to the residents. This problem is being contributed by vehicles such as cars, motorcycles, buses, and lorries whose noise rises during peak traffic hours. Noise levels are measured, traffic volume patterns are analyzed and their relationship studied in this study, investigating traffic noise pollution near a residential area. The findings are intended to help illuminate the effects of traffic noise on residents, and to provide a road map for mitigating them.

Methods: Data collection included on-site monitoring of noise levels using a sound level meter (SLM) and manual counting of traffic volume. The data was analyzed with Statistical Package for Social Sciences (SPSS) and Pearson Correlation used to find a relationship between noise levels and the traffic volume.

Results: The study's findings indicate a strong correlation between noise levels and traffic volume in the three places that were chosen: Jalan Raja Abdullah 9/19 (near the triple junction), Jalan Tengku Ampuan Rahimah 9/20 (near the school), and Jalan Raja Abdullah 9/19 (near the commercial area). Regression analysis and correlation coefficients show that higher noise levels are correlated with higher traffic volumes. While lower R² values at other locations show weaker connections, the triple junction recorded the highest R² value of 0.3886, demonstrating substantial fluctuation of noise levels explained by traffic volume. Overall, the results show that noise pollution is higher in places with more traffic, with all recorded levels above the Department of Environment Malaysia's allowable 65 dBA limit. This emphasizes the critical need for mitigation strategies to control noise in high-traffic urban areas.

Conclusion: According to the study's findings, traffic volume greatly increases noise pollution, surpassing acceptable noise levels in every area that was observed. The relationship between traffic and noise emphasizes how urgently urban planning policies and noise control techniques are needed to lessen the negative effects on people's health and well-being. To make cities calmer and healthier, future research should concentrate on thorough noise mapping and long-term solutions.

Keywords: Occupational Noise, Traffic Volume, Noise Exposure Limit, Sound Level Meter, Residential Area

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