ABSTRACT

Community Perception and Assessment of Transportation Noise

Channa Manoj Kalansuriya
Department of Physics, University of Colombo

In this research, measurements of road traffic noise, its exposure and annoyance are studied. Measurements to determine road traffic noise levels were carried out in several locations under varying traffic conditions. Exposure to noise levels was measured on residents living in the vicinity of traffic routes as well as within inter-provincial buses and hospitals. Annoyance was determined by conducting a sample survey.

Road traffic noise measurements were carried out approximately 5 m from the edge of the traffic route and 1.5 m above the ground level in 6 separate locations. It was observed that average noise levels reached above 73 dB(A), 66 dB(A) and 57 dB(A) throughout the day in category A, B and C roads respectively. The composition of vehicles showed that heavy vehicles such as lorries and containers contribute significantly to the average noise levels in category A roads. For category B and category C roads, very light vehicles, such as motorbikes and three wheelers contribute to the average noise levels heavily. In order to determine the level of noise within inter-provincial buses, 152 buses were selected from 6 bus routes. Special attention was given to sound systems installed in buses. The results revealed that inside noise level exceed 90 dB(A) for more than 12% of buses and exceeds 85 dB(A) for more than 52% buses. To determine the noise levels in and around hospitals, a total of 853 measurements were taken in 17 selected hospitals. The study reveals that for 45% of the government hospitals, outdoor noise levels at the boundary exceeded prescribed levels for silent areas. The disparity was observed between the private and government hospitals which was quite evident especially, in evening and night sessions. In private hospitals noise levels at main entrance and OPD waiting area is higher compared to other hospitals. Noise was comparatively less (only 30% exceeding recommended levels) in wards of private hospitals, providing more comfort to patients. The study indicates the necessity for awareness. Warning signs and enforcing existing noise regulations are required to uplift the current standards.

The results of the community response survey show that most residents living in the vicinity of the traffic routes are disturbed by traffic noise. However, only 38% consider it as an annoyance while 16% consider it as a nuisance at all times. The results indicate that in general Sri Lankans do not react strongly to traffic noise. There is a strong relationship