"Gheorghe Asachi" Technical University of Iasi, Romania

COMMUNITY RESPONSE TO ROAD TRAFFIC NOISE:
A CASE STUDY OF KANPUR

Saurabh Upadhyay[1]*, Manoranjan Parida[1], Brind Kumar[2]

[1]Department of Civil Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247667, India
[2]Department of Civil Engineering, Indian Institute of Technology (BHU) Varanasi, Varanasi, Uttar Pradesh, 221005, India

Abstract

Health issues of citizens due to road traffic noise are becoming a serious concern in different cities in India. In this study, we have assessed the annoyance effect of road traffic noise in Kanpur city concerning the impact on their health, and daily activities. The degree of annoyance and other health issues and daily activities were assessed through a questionnaire survey. A random face-to-face interview was conducted at the respondent's dwelling with a sample of 512 respondents, and hourly noise measurement by Sound level meter (01 dB) for 34 locations of different land-use in Kanpur city and compared with prescribed by CPCB, New Delhi. Noise exposure levels in different land-uses residential zone (52.6-103.6 dB (A)), commercial zone (53.5-103.5 dB (A)), industrial (50.7-104.3 dB (A)) and silence zone (51.3-104.1 dB (A)). The socio-demographical, health factors, daily activity (like sleep, rest, during the study etc.), and other factors (window and bedroom orientation) responses were collected in standard scale by questionnaire survey. Respondents (about 95%) reported highly annoyed due to traffic noise. There appeared to be an age bias with respect to community response to road traffic noise, with the younger age groups reporting less annoyance and disruption of various daily activities by traffic noise. In this study, we assessed the relationship between annoyance and different health factors. Furthermore, window orientation in the living room and bedroom affected sleep and other activities.

Key words: annoyance, health impact factors, questionnaire noise, traffic noise

Received: September, 2022; Revised final: January, 2023; Accepted: March, 2023; Published in final edited form: April, 2023

---

* Author to whom all correspondence should be addressed: e-mail: supadhyay1@ce.iitr.ac.in; Phone: +91 9935820315; Fax: +911332 275568