

## Effect of On-Road Vehicular Traffic on Noise Pollution in Bhubaneswar City, Eastern India

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**Abstract :** Vehicular traffic on the road-side plays a significant role in affecting the noise pollution in most of the cities over the world. To assess the correlation of the road-traffic on noise pollution in the city environment, continuous measurements were carried out in an entire daytime starting from 8:00 AM IST to 6:00 PM IST at a single point for each 5 minutes (8:00-8:05, 9:00-9:05, 10:00-10:05 AM, ...) near the KIIT University campus road. Noise levels were observed using a mobile operated app of android cell phone and a handheld noise meter. Calibration analysis shows high correlation about 0.89 for the study location for the day time period. Results show diurnal variability of atmospheric noise pollution levels go hand-in and with the vehicular number which pass through a point of observation. The range of noise pollution levels in the daytime period is observed as 55 to 75 dB(A). As a day starts, sudden upsurge of noise levels is observed from 65 to 71 dB(A) in the early morning, 64 dB(A) in late morning, regains the same quantity 68-71 dB(A) in the afternoon, and rises 70 dB(A) in the early evening. Vehicular number of the corresponding noise levels exhibits 115-120, 150-160, and 140-160, respectively. However, this preliminary study suggests the importance of vehicular traffic on noise pollution levels in the urban environment and further to study population exposed to noise levels. Innovative approaches help curb the noise pollution through modelling the traffic noise pollution spatially and temporally over the city environments.

**Keywords :** noise pollution, vehicular traffic, urban environment, noise meter

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