JSRT JOURNAL
JOURNAL OF SCIENTIFIC RESEARCH AND TECHNOLOGY
PAGES: 64-71
15/09/25
VOLUME-3 ISSUE-9 SEPTEMBER

Noise Pollution Monitoring And Control At Chitapur Town Kalaburagi.

Vidya[1], S K Ingankal[2], Dr. Srinivas Kushtagi[3]

[1]P.G Student in Environmental Engineering Department of Civil Engineering P.D.A. College of Engineering, Kalaburagi, India. vidyashringeri2001@gmail.com
[2]Professor, Environmental Engineering Department of Civil Engineering P.D.A. College of Engineering, Kalaburagi, India. skinganakal@pdaengg.com
[3]Professor, Environmental Engineering Department of Civil Engineering P.D.A. College of Engineering, Kalaburagi, India. srinivas@pdaengg.com

ABSTRACT

Noise pollution can be divided into three groups industrial noise, community noise and traffic noise. In the case of traffic noise, major portion of traffic noise is contributed by heavy vehicles (Commercial Trucks and Buses) only. An uncontrolled movement of these heavy vehicles in the town creates so called 'traffic jam' and finally creates noise. In this paper we are trying to know about the values of noise pollution at the various locations of Chittapur town kalaburagi district. And all the values we have got after survey are more than CPCB standards during Morning, Afternoon and Evening hours. Which is not good for the environment and for the human being, so the suggestions are given to reduce the noise levels as much as possible.

Keywords: Noise, Noise Pollution, Noise Pollution Monitoring

INTRODUCTION:

The general definition of noise pollution is being in close proximity to noise that have the potential to harm people or other living things. No matter how long or frequently they are exposed, sound levels below 70dB do not harm living things, according to the world health organization (WHO). Continuous exposure to noise levels above 85dB for longer than 8 hours may be dangerous. You are probably exposed to traffic noise pollution of about 85dB if you work eight hours a day near a busy road or highway. Rapid urbanization, motorization and industrialization become the primary cause of noise pollution.

OBJECTIVES:

1. To monitor Noise pollution at various locations of Chitapur town.

2. Protect public health.

3. Support Environmental Impact Assessments.

4. Raise Public Awareness.

Sources of noise pollution

Human-made sources

1) Transportation : Cars, trucks, motorcycles, and honking contribute to significant noise levels in urban areas.
2) Industrial activities : Industrial activities are a significant source of noise pollution due to the high intensity and duration of noise produced by machinery, construction, and other processes.
3) Construction : Construction sites involve activities like demolition, drilling, metal cutting, Hammering, and the operation of heavy machinery, all of which contribute to noise pollution.
4) Household appliances: House hold appliances create noise pollution through their motors, fans, compressors, and moving parts, contributing to unwanted sound levels in homes.
5) Air traffic: Aircraft noise, a form of noise pollution, is primarily generated during takeoffs, landings, and while the aircraft is on the ground.

Natural sources

1) Thunderstorms: Thunder can reach up to 120 decibels, creating loud and sudden noises.
2) Earthquakes: Seismic activity can cause rumbling and shaking, generating noise pollution.
3) Volcanic eruption: These events can produce powerful explosions and ash clouds, leading to significant noise and sound pollution.
4) Wildlife: Noise pollution significantly impacts wildlife by disrupting communication, navigation, foraging, and breeding behaviors.

STUDY AREA:

Chitapur or **Chittapur** is annn town and taluk in Kalaburagi district in the state of Karnataka, India.

It is also the headquarters of the Chittapur taluk. It is known for polished stones and toor dal.

Chitapur is located at 17.12°N 77.08°E.[1] It is situated on the main railway from Hyderabad to

Mumbai, 50 km from Gulbarga district.

It has an average elevation of 403 metres (1322 ft). The town is spread over an area of 3.5 km^2.

As of 2001 India census, Chitapur had a population of 26,974.

Males constitute 50% of the population and females 50%.

Chitapur has an average literacy rate of 46%, lower than the national average of 59.5%; with male literacy of 54% and female literacy of 38%. 16% of the population is under 6 years of age.

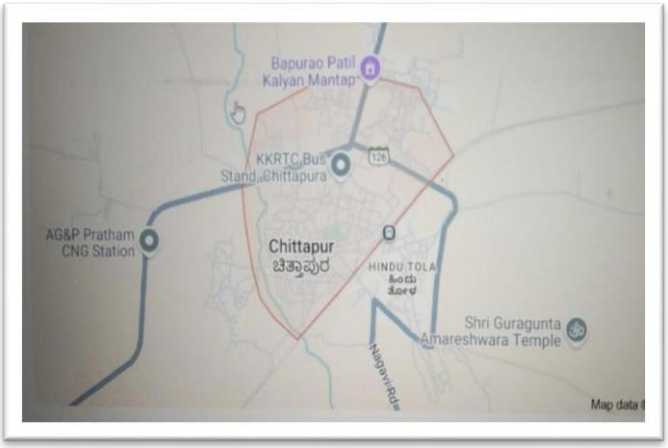


Fig. no. 5.1 Location of Chitapur Town

METHODOLOY:

The method of noise level monitoring involves using specialized equipment, such as “Sound level meter” or “noise dosimeters”, to measure and quantify the intensity of sound in a given environment.

Sound level meter

Functionality: A sound level meter measures the intensity of sound waves in decibels (dB). It is commonly used to assess noise levels in various environments, such as workplaces, construction sites, and public spaces.

Process:

1. Sound Detection: The sound level meter has a microphone (the black foam cover at the top) that detects sound waves in the environment.

2. Signal Processing: The detected sound waves are converted into an electrical signal, which is then processed by the meter's internal circuitry.

3. Measurement: The processed signal is measured and displayed on the LCD(Liquid crystal display) screen as a decibel value.

4. Weighting: The meter may apply weighting filters (such as A, C, or Z) to the measurement to account for the human ear's sensitivity to different frequencies.

5. Display: The measured decibel value is displayed on the LCD screen, along with other information such as the maximum and minimum values recorded.

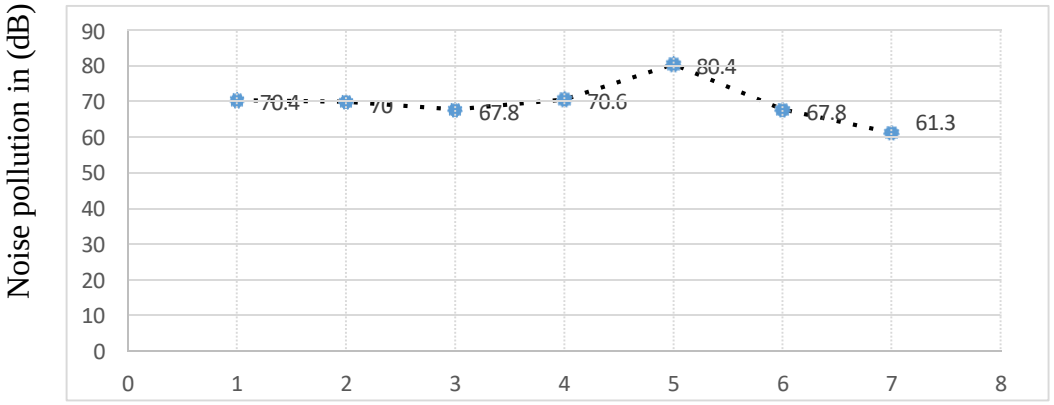
Results and discussions.

Residential Area

In Indira Nagar of Chitapur town the climatic condition changed day by day. It was cloudy, rainy and sunny conditions. It varies in morning, afternoon, evening hours.

Table of Noise Level During Morning Hour's (9:30 am) in (dB)

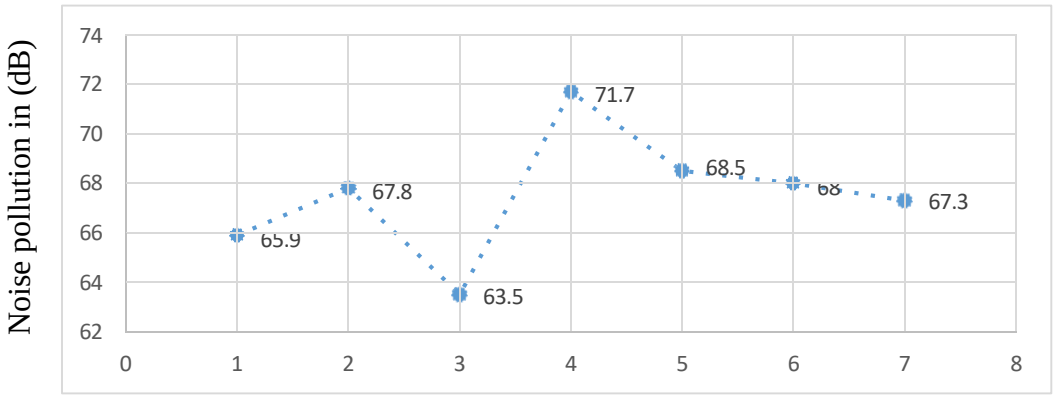
Days	LAmax	LAmin	LAavg
Day 1	84.4	56.4	70.4
Day 2	54.6	54.6	70.0
Day 3	73.2	62.4	67.8
Day 4	80.7	60.6	70.6
Day 5	82.2	78.7	80.4
Day 6	74.5	61.1	67.8
Day 7	68.3	54.4	61.3



Residential area in days

Table of Noise Level During Afternoon Hour's (2:30 pm) in (dB)

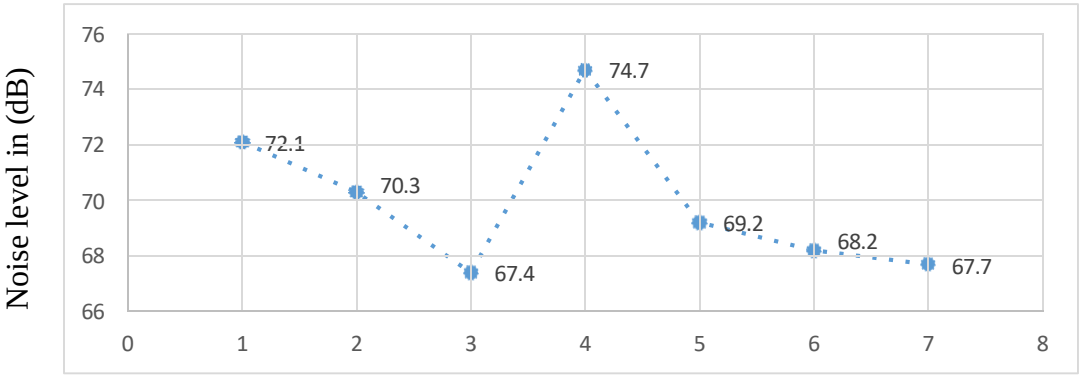
Days	LAmax	LAmin	LAavg
Day 1	71.6	60.3	65.9
Day 2	73.2	62.4	67.8
Day 3	66.8	60.2	63.5
Day 4	84.9	58.6	71.7
Day 5	79.2	57.8	68.5
Day 6	76.8	59.2	68.0
Day 7	73.2	61.4	67.3



Residential in days

Table of Noise Level During Evening Hour's (4:30 pm) in (dB)

Days	LAmax	LAmin	LAavg
Day 1	78.2	66.1	72.1
Day 2	76.4	64.2	70.3
Day 3	73.9	60.9	67.4
Day 4	80.2	69.2	74.7
Day 5	75.6	62.9	69.2
Day 6	77.2	59.9	68.5
Day 7	72.9	52.6	67.7



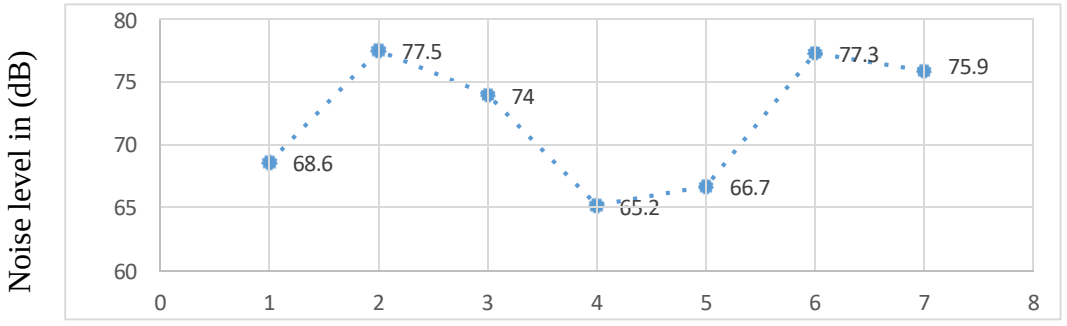
Residential area in days

Commercial area

Bus stand

Table of Noise Level During Morning Hour's (9:30 pm) in (dB)

Days	LAmax	LAmin	LAavg
Day 1	77.5	59.7	68.6
Day 2	91.4	63.6	77.5
Day 3	81.0	67.0	74.0
Day 4	69.5	60.9	65.2
Day 5	78.2	55.3	66.7
Day 6	94.3	60.4	77.3
Day 7	88.7	63.2	75.9



Commercial area in days

Table of Noise Level During Afternoon Hour's (2:30 pm) in (dB)

Days	LAmax	LAmin	LAavg
Day 1	80.9	64.8	72.8
Day 2	79.4	60.2	69.8
Day 3	84.2	63.2	73.7
Day 4	80.6	64.9	72.7
Day 5	78.9	65.2	72.0
Day 6	85.2	68.8	77.0
Day 7	76.5	59.3	67.9

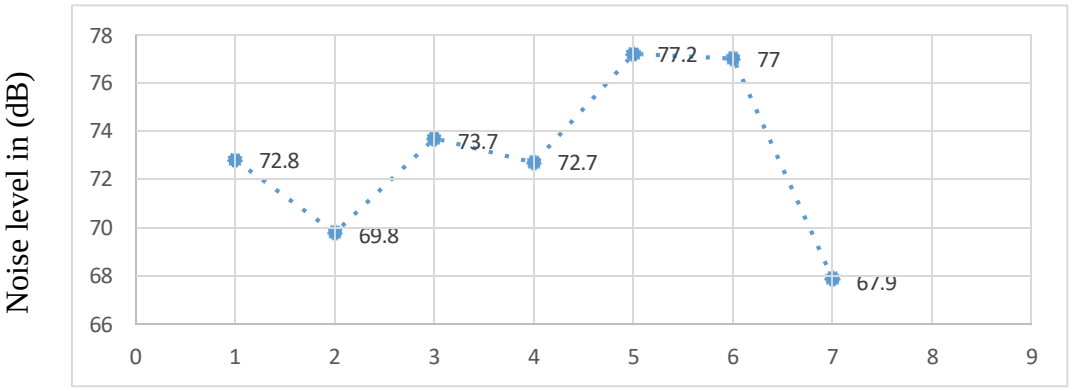
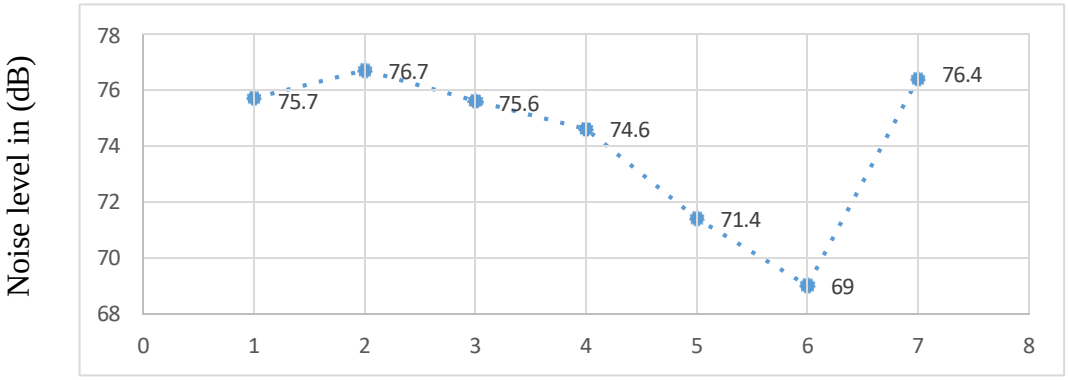


Table of Noise Level During Evening Hour's (4:30 pm) in (dB)

Days	LAmax	LAmin	LAavg
Day 1	82.8	68.7	75.7
Day 2	89.1	64.3	76.7
Day 3	88.5	62.8	75.6
Day 4	84.1	65.1	74.6
Day 5	81.9	60.9	71.4
Day 6	78.2	59.8	69.0
Day 7	85.6	67.2	76.4



Industrial area : Orient cement factory

Table of Noise Level During Morning Hour's (9:30 pm) in (dB)

Days	LAmax	LAmin	LAavg
Day 1	88.1	70.0	79.05
Day 2	90.1	79.3	84.7
Day 3	80.5	71.1	75.8
Day 4	87.6	73.4	80.5
Day 5	77.1	69.3	73.2
Day 6	79.9	60.0	70.2
Day 7	86.6	69.0	77.8

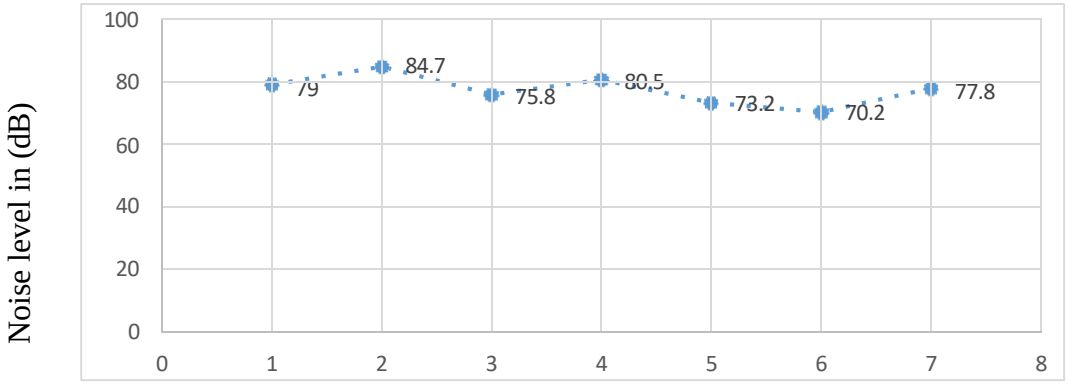


Table of Noise Level During Afternoon Hour's (2:30 pm) in (dB)

Days	LAmax	LAmin	LAavg
Day 1	78.0	69.0	73.5
Day 2	82.0	72.3	77.1
Day 3	77.6	66.1	71.8
Day 4	87.7	70.8	79.2
Day 5	89.9	68.0	78.9
Day 6	89.3	70.4	79.8
Day 7	86.5	70.3	78.4

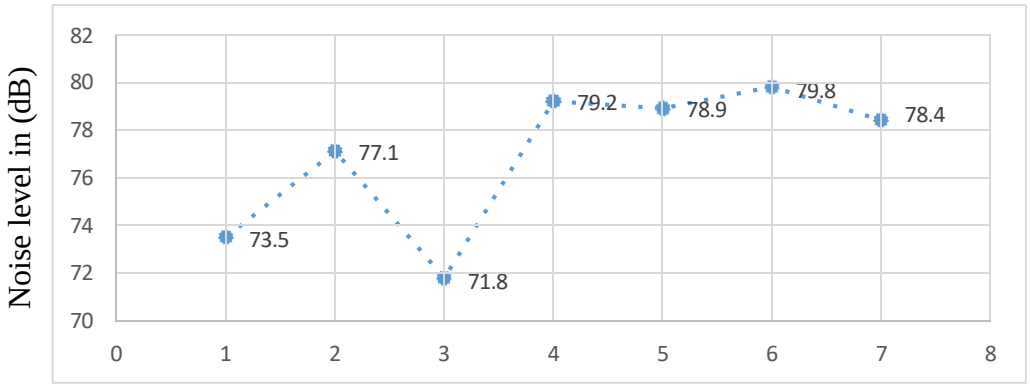
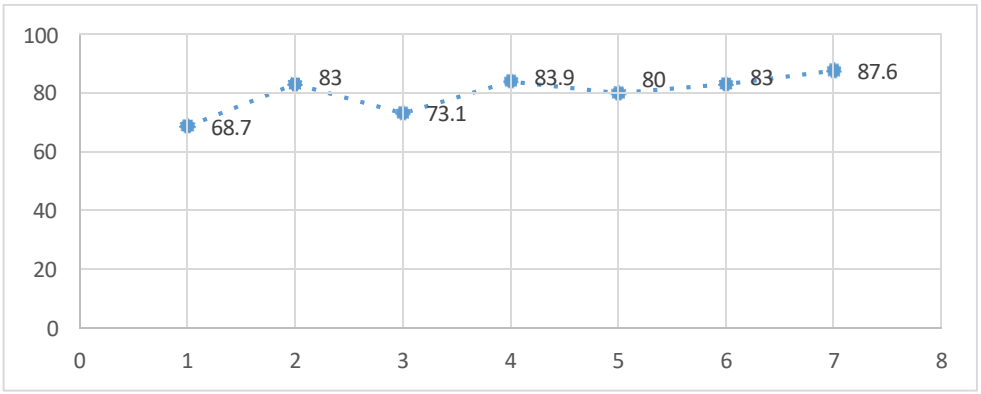


Table of Noise Level During Evening Hour's (4:30 pm) in (dB)

Days	LAmax	LAmin	LAavg
Day 1	82.1	55.3	68.7
Day 2	87.0	79.0	83.0
Day 3	77.3	69.0	73.1
Day 4	88.0	79.8	83.9
Day 5	82.3	77.8	80.0
Day 6	90.0	76.0	83.0
Day 7	95.2	80.0	87.6



CONCLUSION:

The noise pollution monitoring has carried out in the chitapur town kalaburagi city. According to the survey the noise levels are far beyond the permissible limit or CPCB standards. Noise pollution beyond the permissible limit poses serious threats to human health, environmental quality, and overall well-being. Prolonged exposure can lead to hearing loss, stress, sleep disturbances, and reduced productivity, while also disturbing wildlife and ecological balance. Such violations indicate the urgent need for strict enforcement of noise standards, adoption of noise control measures, and public awareness to ensure a healthier, sustainable, and compliant environment.

REFERENCE:

A. Bhaven Tandel, Dr. Joel Macwan, Pratik N. Ruparel "Urban Corridor Noise Pollution: A case study of Surat city, India"[8]
B. Bablu Kumar, R.K Grover "Assesment of Vehicular Noise pollution at different squares in Bhopal City" MP(India)
C. Goswami, Sh.1, "Road Traffic Noise: "A Case Study of Balasore Town, Orissa, India" Int. J. Environ. Res., 3(2):309-316, Spring 2009 ISSN: 1735-6865[7]
D. Ghorbanali Mohammadi1, "An Investigation of Community Response to Urban Traffic Noise" Iranian Journal of Environmental Health Science, 1998, 2 (4), 229-236.
E. Krishna Murthy et al., "Assessment of Traffic Noise Pollution In Banepa, A Semi Urban Town Of Nepal" [1]
F. Nirjar.R.S., .Jain.S.S, Parida.M, Katiyar.V.S., Mittal.N,(2003), "A study of transport related noise pollution in Delhi", IE (I) Journal- EN, pp 6-15.