



Noise Quality Assessment At Madhya Kailash Junction

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ABSTRACT

Environmental pollution such as air, water, hazardous waste and noise pollution has always been a global concern affecting both the public's health and the planet's fragile ecosystems. Currently one of the serious issues of environmental pollution is noise especially in urban areas. Noise pollution is defined as "unwanted sound that unreasonably enters into our daily activities. Transport noise is an increasingly prominent feature of the urban environment making noise pollution an important public health issue. Road traffic is a key source of noise in big metro cities like Chennai. The present study is conducted to know levels of noise pollution at Madhya kailash junction, Chennai.

Keywords: Noise, Traffic Junction, Noise Levels.

1. Introduction

Noise is the third major dangerous environment pollutant which is a man-made plague. It has been recognized as major urban pollutant and become a very important stress factor to the environment. Though in urban cities it is steadily increasing over the years, surprisingly noise pollution data collection in India is very scanty. Based on previous surveys it has been revealed that noise levels in urban areas are generally higher than the prescribed limit given by CPCB (Vidyasagar and Rao, 2006). By comparing the metro cities like Mumbai and Delhi, Chennai has the least noise levels (Times of India News article). But with global urbanization, major cities like Chennai are facing environmental degradation. And also Chennai is surrounded by naval establishments, major industries, educational institutions and especially religious places. Transport noise is an increasingly prominent feature of the urban environment making noise pollution an important public health issue. Road traffic is a key source of noise in big metro cities like Chennai. Surveys conducted in the past have revealed that the contact between tyre and the road surface is a dominant noise at speeds above 60 km/h for light vehicles. Vehicular population like automobiles and trains are also increased over a period of time considerably.

2. Adverse Effects of High Noise

Noise can be continuous, variable, intermittent or impulsive depending on how it changes over time. Continuous noise is one which remains constant and stable over a given time period. Intermittent noise is the one where there is a mix of relatively quiet and noisy periods. Impulsive or impact noise is a very short burst of loud noise which lasts for less than one second for example that of a punch press. Noise affects both health and behavior of mankind. Noise pollution caused by heavy industrial activity can cause distraction, discomfort and deprives peace of mind at workplace. Excessive noise leads to mental disturbance, lack of communication, loss of sleep, increase in blood pressure and noise induced hearing loss. Noise has a detrimental effect on animals too; one of the best known cases of damage caused to the animals by noise pollution is the death of certain species of beach whales due to loud sound of military sonar (NOAA, 2000).

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3. Objectives

- To collect the noise levels of different areas.
- To compare the collected values with the standard values given by CPCB and PCB.
- To estimate the value of noise pollution generated by traffic.
- To estimate the noise levels during peak traffic hours and non-peak hours.
- To observe the noise level whether is decreasing or increasing towards construction buildings as compared to non-building areas.

4. Scope to Conduct the Survey

- To understand the effects of noise pollution on urban areas.
- One of the key aspects of the survey is trying to find out the mitigation measures by analyzing different values of noise pollution.
- To examine the impact of noise levels in various fields.
- Enquire the ways to reduce the severity of environment hazardous pollutants.
- As the noise pollution surveys in India is very scanty, it is challenging to calculate and analyze adverse effects of noise pollution.

5. Study Area

The Madhya Kailash Junction is an important junction in the southern part of the city of Chennai. It is located at the beginning of the Rajiv Gandhi Salai (IT Expressway) which intersects the Sardar Patel Road in the form of "T".

Chennai (13.08389° N 80.27° E) is located in the southern part of India and he capital of Tamil Nadu State. Chennai city is expanded as grater Chennai that includes the southern sub-urban parts roughly 4,400 sq.km, to accommodate the additional population and to increase the economic activities. Especially we are collecting Noise pollution levels at Madhya Kailash. The device used to collect different values of noise pollution is Digital Sound level meter



6. Results and Discussions

SAMPLE LOCATIONS

The noise level readings are taken in three different zones near Madhya Kailash Junction

1. Commercial Zone

2. Silent Zone

3. Residential Zone

Table 1 Noise Level at Dr.Padmini Periaswamy Ward (Hospital)

TIME	MAX (DB)	MIN (DB)	MEAN (DB)	AVERAGE
8:45	72.4	58.4	65.4	
9:45	78.4	62.3	70.35	
10:45	63.8	52.2	58	
11:45	69.4	59.6	64.5	64.35
12:45	71.3	57.9	64.6	
1:45	79.7	58.7	69.2	
2:45	65.9	50.1	58	
3:45	70.8	58.7	64.75	

Table 2 Noise Level at Anna University

TIME	MAX (DB)	MIN (DB)	MEAN (DB)	AVERAGE
9:15	62.4	48.2	55.3	
10:15	68.7	52.8	60.75	
11:15	65.4	50.4	57.9	
12:15	65.7	50.2	57.95	
1:15	61.2	49.4	55.3	58
2:15	66.4	53.1	59.75	

Table 3 Noise Level near Madhya kailash Signal

TIME	MAX (DB)	MIN (DB)	MEAN (DB)	AVERAGE
8:00 AM	91.8	73.2	82.5	
9:00 AM	81.3	72.4	76.85	
10:00 AM	83.4	67.1	75.25	
11:00 AM	87.7	69.3	78.5	
12:00 PM	73.4	64.8	69.1	73.735
1:00 PM	72.8	63.2	68	
2:00 PM	71.4	62.4	66.9	
3:00 PM	70.2	61.3	65.75	
4:00 PM	81.4	67.7	74.55	
5:00 PM	87.5	72.4	79.95	

Table 4 Noise Level at Adyar Route

TIME	MAX (DB)	MIN (DB)	MEAN (DB)	
8:00 AM	87.5	77.6	82.55	
9:00 AM	85.4	75.3	80.35	
10:00 AM	88.4	67.6	78	
11:00 AM	88.2	76.4	82.3	
12:00 PM	79.5	67.2	73.35	76.1
1:00 PM	77.6	65.7	71.65	
2:00 PM	72.8	64.3	68.55	
3:00 PM	71.4	62.1	66.75	
4:00 PM	82.4	69.7	76.05	
5:00 PM	89.7	73.2	81.45	

Table 5 Noise Level at Kelambakkam Route

TIME	MAX (DB)	MIN (DB)	MEAN (DB)	
8:00 AM	89.8	61.3	75.55	
9:00 AM	84.4	76.9	80.65	
10:00 AM	77.5	64.7	71.1	
11:00 AM	73.4	65.9	69.65	73.435
12:00 PM	75.8	66.7	71.25	
1:00 PM	74.3	65.4	69.85	
2:00 PM	70.2	61.4	65.8	
3:00 PM	72.4	63.7	68.05	
4:00 PM	84.8	72.4	78.6	
5:00 PM	91.4	76.3	83.85	

Table 6 Noise Level at Guindy Route

TIME	MAX (DB)	MIN (DB)	MEAN (DB)	AVERAGE
8:00 AM	88.4	74.2	81.3	
9:00 AM	87.6	76.4	82	
10:00 AM	75.8	63.3	69.55	
11:00 AM	71.7	62.3	67	
12:00 PM	73.2	61.5	67.35	
1:00 PM	72.1	60.7	66.4	73.145
2:00 PM	72.8	63.7	68.25	
3:00 PM	71.9	62.7	67.3	
4:00 PM	84.2	71.4	77.8	
5:00 PM	90.4	78.6	84.5	

7. Conclusion

It is concluded that the environmental noise pollution problem caused by the traffic vehicles is the main cause of urban noise levels. The inhabitants living in these areas are bound to suffer from health problems and low life quality. From the technical point of view, it is necessary to take several measures in order to reduce the noise levels. In order to do so, the remedial measures should be considered as follows:

- Reduction of speed limits, mainly near residential areas, schools and hospitals.
- Incentives may be given to the vehicle manufactures to develop new systems in order to reduce sound power emissions.
- Removal of encroachments and banning the use of air horns within the city limits
- Among all things that can be done to relieve the environmental noise pollution problem the most effective one is to promote a wareness of the population about the risks of daily exposure to high noise levels.

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