

Study on Impact of Noise Pollution at Construction Job Site

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Abstract - Noise pollution is the serious or more noise that may damage the activity or human life. The contribution of most outside noise is mainly due to building activities. Noise pollution affects both health and human nature. The objective of this paper is to study the impacts of noise pollution at construction site. This study was carried out based on literature review and a questionnaire survey. A questionnaire is distributed to the various supervisors/equipment operators where noise occurs in construction site in and around the tirunelveli district of tamilnadu state. The data for this study is gathered through a detailed questionnaire survey. The questionnaire form is forwarded to various construction industries in personal. Productivity is studied by the analysis of the respondent collected.

Keywords: Noise; Construction noise; Impacts of noise

I. INTRODUCTION

Noise is generally considered to be undesirable sound and sound can be considered undesirable due to amplitude or volume of loudness, category of noise, about the day, or any modality making resonance or obscene. Noise annoyance and corresponding problems, bring on noise pollutant through the process of building assemblage, and have come over exponentially significant. This hassle can affect the workers, as well as the residencies. Construction sites are a very common source of noise pollution. Construction and works related to demolition are mostly riotous and repeatedly take place in residential places (out of town). Construction noise is noise that arises from an activity at a construction site that includes; work due to demolition, work related to strategy, and building renewal work. The noise from the construction of highways, city streets, and buildings is a major contributor to the urban scene. Construction noise contributors include pneumatic equipments, air compressors, machine mounted percussion drills, loaders, trucks and breaking equipments.

The construction industry is an important contributor of pollution, accountable for effluent particulates, and more number of noisy gripes every year. Although constructing a building also pollutes the ground, air and water. Construction sites bring out lot of noise, mainly from heavy equipment and machinery used in construction field. Over noise is virtually annoyance and confound to the humanity, but can lead to loss of hearing, hypertension, and irregular heart beat.

II. OBJECTIVE OF THE STUDY

Among various pollutions noise pollution is one of the major contributions of construction industry. This research was aimed at identifying the impacts which affects the society through noise pollution in construction sites. To achieve the aim, an objective has been identified as following:

(a) To study the impact of noise pollution at construction site.

III. METHODOLOGY PROPOSED:

- ❖ Literature collection
- ❖ Literature Review
- ❖ Noise level at site through noise level meter
- ❖ Questionnaire survey and preparation
- ❖ Analysis

Method: Different journals, papers, books, and related literatures about noise pollution in construction were collected and it was studied in detail. Such studies were very useful to obtain knowledge about the work study. From literature survey various impacts which affect the society through noise pollution are identified.

Questionnaire arrangement: The questionnaire category was designed as an easy assessment, in which objective and impacts mentioned were questioned. It assists the noise level of equipments and the heavy machinery which produces noise at construction sites, they are equally important source and part of the questionnaires were designed as health issues affects due to noise in construction. There are many methods in distributing the questionnaire form. The aggressive questionnaire forms are distributed to each company and in person the forms were collected.

Analysis: Microsoft Office Excel was used in analyzing the collected data. Factor analysis was used in analyzing data to determine the impacts which affects the society through noise pollution. Based on the responses the impacts were identified.

IV. FACTORS OF NOISE POLLUTION IN CONSTRUCTION

The factors which influence the society and construction are identified. Such main sources of construction worksite noises are:

- a) Diesel power generators
- b) Cutting and welding processes
- c) Heavy machinery like trucks
- d) Transport of materials
- e) Demolition
- f) Maintenance and Repair
- g) Erection.

The noise levels created by construction equipment will vary greatly depending on factors such as,

- a) The type of equipment
- b) The specific model
- c) The operation being performed and
- d) The condition of the equipment.

V. EFFECTS OF NOISE POLLUTION AT CONSTRUCTION SITE

The main harmful effects of noise pollution at construction site are,

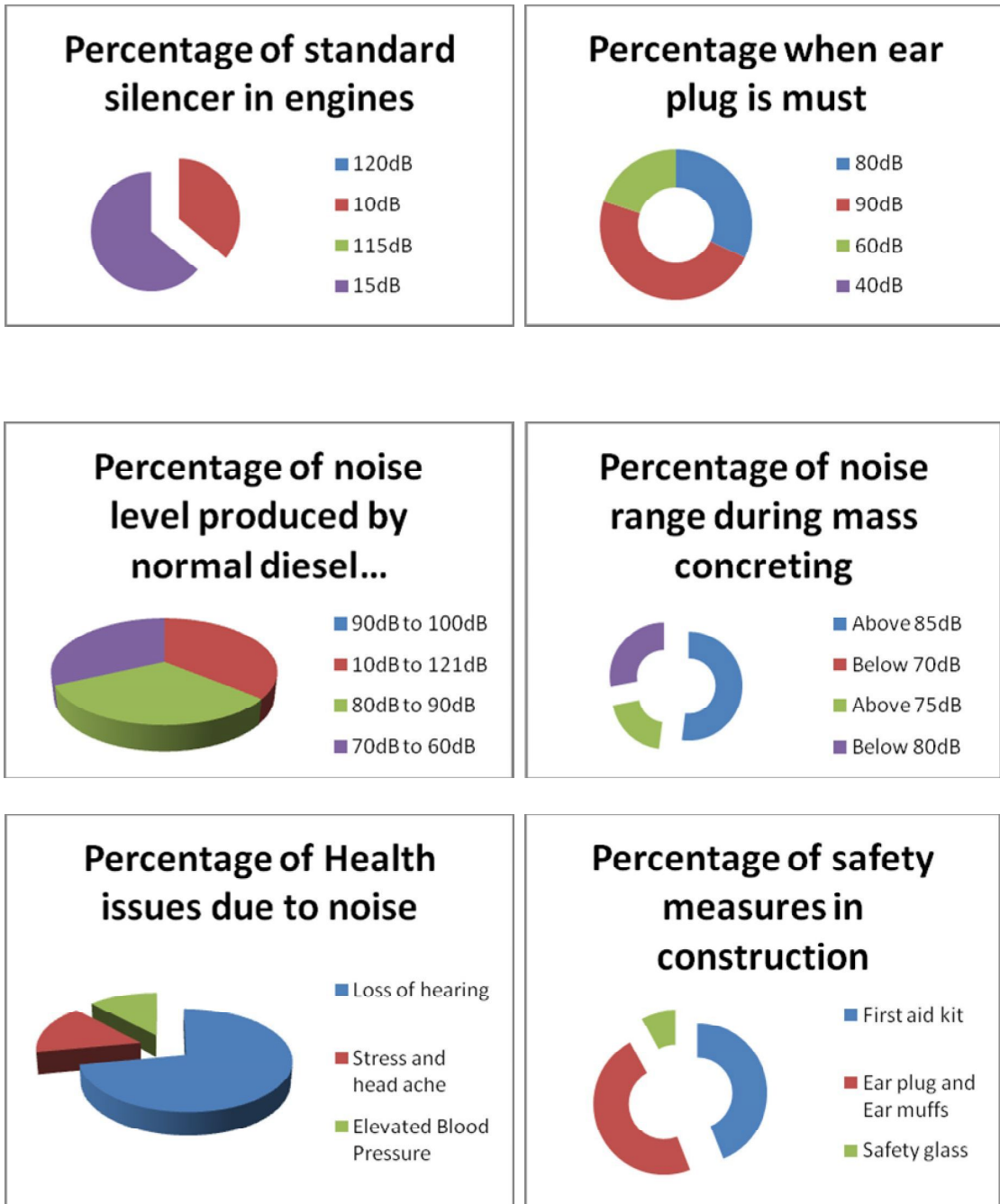
- a) Hearing problems
- b) Health issues
- c) Sleeping disorders
- d) Cardiovascular issues.

Noise effects on human beings in construction site are classified into two types such as

1. Noise hazards
 - a) Permanent hearing loss
 - b) Neural stress
2. Noise nuisance
 - a) Efficiency
 - b) Mental stress
 - c) Irritability
 - d) Sleep interference
 - e) Habit of talking loudly
 - f) Hearing loss
 - g) Concentration

VI. RESULTS AND DISCUSSION

The study was concentrated on identifying the impacts which affects the society through noise pollution in construction industry. From the literature review, different impacts were identified. A brief questionnaire is prepared based on different impacts which affect the society through noise pollution. Data's are collected through questionnaire in person by measuring the noise level at sites and equipments. The levels are noted down separately. Respondents are required to select their choice using their expertise work from the questionnaire. The fundamental impact which affects the society is identified through the field work, and the inferences made were: due to maintenance of the equipment and its noise level. Also high machinery noises and the field work health issue of labors in the construction industry were studied.



VII. CONCLUSION

From the responses obtained from various company supervisors, workers and engineers, the following points were noted. The first observance made was 55 % of noises are produced only by the major equipments used at site. Heavy machineries contribute 15% of production in noise levels. Due to these types of noises produced 30 % of construction laborers and workers are highly affected. They lose their comfort level to work at site. Hence suggestions and recommendations for healthy and safe work site are given to workers based on the analysis done by using the software. The suggestion given will be useful to improve the overall productivity of an organization and will provide a safe and healthy environment to the workers to work at site.

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