

Detailed Case Studies on Building Project With Respect to Inadequate Safety Measures to the Labour and Developing a Module to Ensure Effective Safety Measures

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ABSTRACT: Hazard Analysis, is an efficient proactive measure for safety risk assessment used in industrial manufacturing settings. However, unlike the manufacturing settings for which it was developed, at construction sites the physical environment is constantly changing, workers move through the site in the course of their work, and they are often endangered by activities performed by other teams. To address this difficulty, a structured method for hazard analysis and assessment for construction activities, called “Construction Job hazards Analysis” (CJHA), was developed. The method was developed within the framework of research towards a lean approach to safety management in construction, which required the ability to predict punctuating safety risk levels in order to support safety conscious planning and pulling of safety management efforts to the places and times where they are most effective. The method involves identification of hazards and access probability of the hazard totally three sites has been selected for the analysis and then questionnaires preparation is done and given to the site and collected the data from the site. The collected data has been analyzed by the SPSS version 20 software has used and find the result about the analysis of the hazards then final conclusion has been done and find recommendation also consider and advise to the current and future project.

KEYWORDS: *safety measures; recommendations.*

I. INTRODUCTION

Construction hazard is very important to the construction site. Improving safety in construction remains a priority in almost every country around the world, because the construction industry stands out among all other industries as the main contributor to severe and fatal accident. Identifying and assessing the hazards and risk is an essential step in safety management also known as job hazard analysis is a practical method for identifying, evaluating and controlling risks in the industrial procedures. In India the construction industry is the second largest employer next to agriculture whereas it is next to the road accidents in our country. The annual turnover of the construction industry in India is about 4000 billion rupees. The number of fatalities occurring from construction work in the industry is quite disturbing and fall of person from height and through openings are the major causes for serious accidents Improving safety in construction remains a priority in almost every country around the world, because the construction industry stands out among all other industries as the main contributor to severe and fatal accident. The construction industry has a distressingly poor safety record, whether measured in absolute terms or alongside other industries. The level of construction safety in a country is influenced by factors such as variations in the labor forces, shifting economics, insurance rate, legal ramification and the stage of the ways of tackling it can be applied across countries. Effective tools include designing, preplanning, training, management commitment and the development of a safety culture. The present study is to evaluate the companies based on construction health and safety practice, basis of health and safety. Work equipment, of health and safety, transport safety, electrical safety, environmental safety, during manual handling and respective activities, hazardous substance, health and safety in working environment.

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The objectives of this study are manifold and they are as follows:

- To identify the causes of hazards.
- To analyze the causes of hazard and control way of hazard.
- To achieve and maintain a reduced cost of hazards.
- To give the safety measure and remedial action to the site.

II. SITE DETAILS

The sites selected for this project are from there different cities in India.

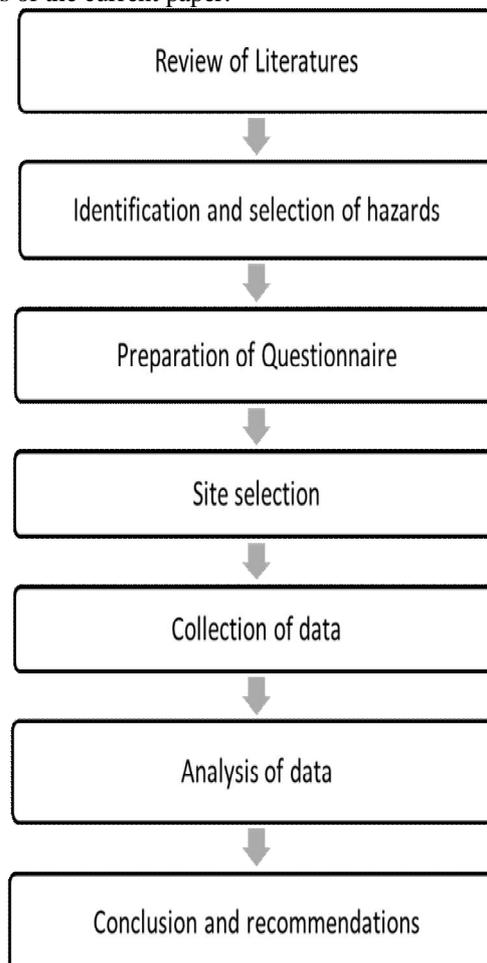
The details of the sites selected are as follows:

- Raj Altezza- Mulund (W), Mumbai.
- Pavani Lakeview- Marthahalli, Bengaluru
- Ambattur Dairy- Ambattur, Chennai

It is the study to consider the control of hazards in the future project by indicating and analyzing the problem in less cost.

III. METHODOLOGY

The methodology adopted for this study is as follows. A detailed survey is carried out to analyze the problem and the literatures can be seen in the references of the current paper.



In case of study area when we make a detail study on the safety aspects, we should have the correct and precise data of the study area on which the study is going to be done. So a detailed study and data's are being collected practically to

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understand the safety measures which are being followed at the site. However, after the collection of data we mainly focus on the main problem to find an alternate. This is obtained by considering the hazards which generally occur during the construction process. After that, the collected data is analyzed and manipulated and the mean values are found out for all the safety aspects that are considered. The ranks are given for the aspects for mean values in the ascending order. Required recommendations are provided for the respective sites.



Fig 1. Location of RajAltezza

IV. RESULTS AND DISCUSSION

The hazard analysis is done through software and the recommendations are to be given from the analysis. The analysis is done for this thesis work using SPSS version 20

The analysis factors are as follows:

- Safety hazards
- Labor hazards
- Electrical hazards
- Environmental hazards
- Equipment hazards
- Quality hazards
- Scaffolding hazards
- Excavation hazards

The following sections shows the results obtained from the analysis of the data obtained through questionnaire by using SPSS. Virtually anything statistic that you wish to perform can be accomplished in combination with pointing and clicking on the menus and various interactive dialog boxes. Keep your word output document open but position your cursor at the end of the present file. Minimize the word document and maximize SPSS Viewer file.

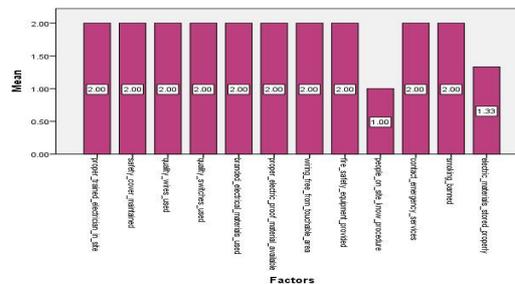


Fig 2. Electrical factors

Fig 2 shows the statistics about electrical factors that are followed in the construction sites. It shows that the people in the site doesn't know the proper procedure of electrical work

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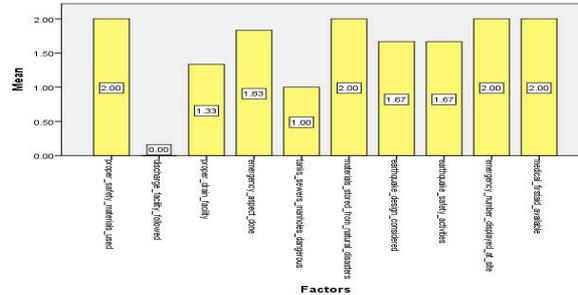


Fig 3. Environmental factors

Fig 3 shows the statistics about environmental factors that are followed in the construction sites. It shows that the proper discharge facility is not present in the construction site.

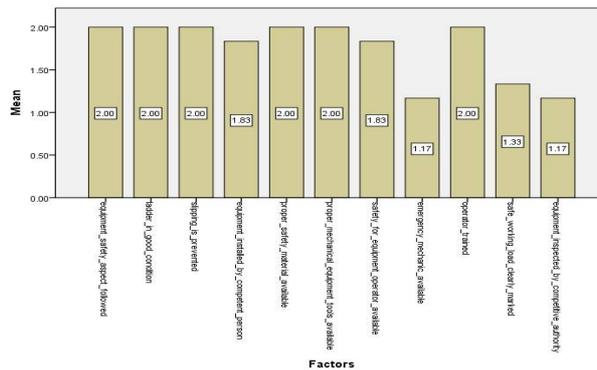


Fig 4. Equipment factors

Fig 4 shows the statistics about equipment factors that are followed in the construction sites. It shows that emergency mechanic for the equipment is rarely available at the construction site.

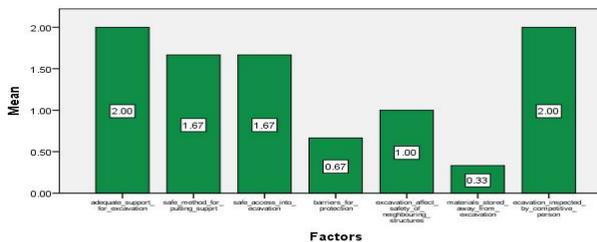


Fig 5. Excavation factors

Fig 4 shows the statistics about excavation factors that are followed in the construction sites. It shows that the materials are not stored away from the excavation area.

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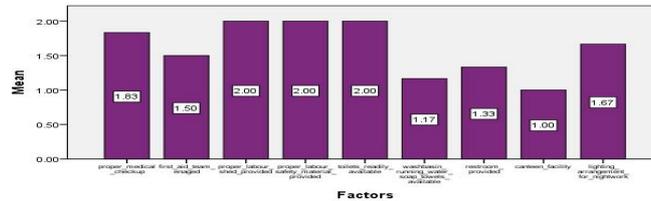


Fig 6. Labor hazards

Fig 6 shows the statistics about labor factors that are followed in the construction sites. It shows that the proper canteen facility is not available at the construction site.

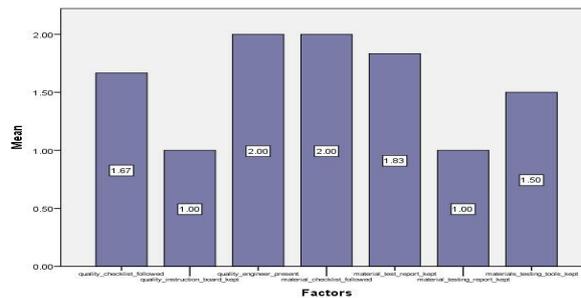


Fig 7. Quality factors

Fig 7 shows the statistics about quality factors that are followed in the construction sites. It shows that the safety instruction boards and the material testing reports are not kept in the construction site.

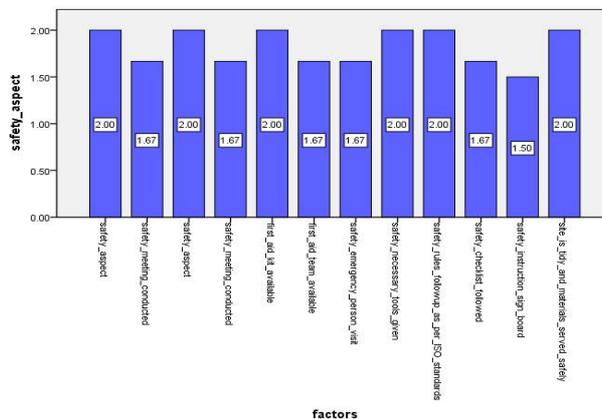


Fig 8. Safety factors

Fig 8 shows the statistics about safety factors that are followed in the construction sites. It shows that safety instruction sign boards are hardly present in the construction sites.

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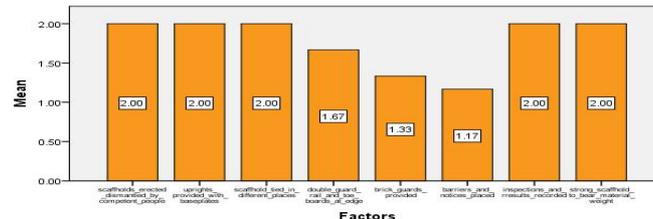


Fig 9. Scaffolding factors

Fig 9 shows the statistics about safety factors that are followed in the construction sites. It shows that the barriers and notices are not properly placed in the construction sites.

V. SUMMARY AND CONCLUSION

The analysis was a ranking of the hazards according to the various risks related to the environment or safety and health activities. Classification of the identified hazards was documented using a hazard analysis worksheet. Each identified hazard was characterized according to hazard type, potential consequences, and initiating event hazard ranking were assigned. It is recommended that the companies should adopt measures in order to reduce scaffolding and quality hazards as most of them do not give much importance to these hazards most of the companies for give prime importance to reduce safety hazards occurring in site. I considered only minimum values for this contraction job analysis. It is recommended that the companies should adopt measures in order to reduce scaffolding and quality hazards as most of them do not give much importance to these hazards. The specialized method presented here is called construction job safety analysis. It is the tailored to collect detailed information about any specific set of construction methods and its end product is a database of the likelihood of occurrence of control events

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