

A Review on Safety in construction industry in India

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Abstract

Safety issues have always been a major problem and concern in the construction industry. Wherever reliable records are available, construction is found to be one of the most dangerous on health and safety criteria, particularly in developing countries. Efforts have been made to address this problem, but the results have been far from satisfactory, as construction accidents continue to dominate the overall construction industry. Despite the programs implemented by government authorities and measures introduced by companies themselves, the number of construction accidents still remains alarmingly high. In developing countries, safety rules usually do not exist; if they do, the regulatory authority is usually very weak in implementing such rules effectively.

Keyword- Safety management, Safety issue, construction scenario

Introduction

Thus it can be considered that the health and safety problems that exist in construction are rarely unique to a single country and as the global community continues to shrink, it will benefit to share ideas and to learn from the lessons already experienced by others. Since, in the global market, construction problems are very similar from country to country and this is quite evident when attending international health and safety conferences where the themes of primary interest have general appeal to all participants, construction health and safety problems appear to be everywhere. Consequently health and safety can be improved by addressing construction problems in many different ways as it reflects the common threat that binds the global research efforts in construction safety. A variety of studies, for example (Glendon and Litherland, 2001) have investigated the construction health and safety within developed countries. In the majority of these studies, researchers have either developed a new framework model or replicated an already tested one with a view to improving its adequacy. However, there is a lack of research in this area in the context of developing countries with specific requirements. Although much research has been directed at health and safety, very little is concerned with the India and the particular characteristics of health and safety in their environment.

This country has experienced a construction boom during the past two decades to the point where the construction industry was the greatest recipient of government spending during that period of time, attracting construction professionals from all over the world due to the growing foreign investments and favorable fiscal policies that have improved considerably the industrial growth rate. Constructions are still ongoing on in and around cities on a big scale. Apart from doing the routine spot checks in construction sites to ensure compliance by contracting companies with the health and safety practice code, an effort must be made to raise the level of awareness among both employees and employers of the importance of safety at work sites.

Scope and objectives

In order to achieve the above mentioned aim, the following objectives were set:

- Assessing safety in the construction industry, description of the general problems inherent, circumstances that allowed accident events to occur and the lessons that should be learnt to improve health and safety in the construction
- Investigating current improved methods of integrating health and safety within construction project management and identifying the keys factors leading to effective health and safety within construction project.
- To improve health and safety standards at construction sites by covering general health and safety provisions as well as duties and responsibilities of the employers, engineers, contractors, and sub-contractors regarding safety measures and the minimum necessary requirements.
- Measures to be followed during all the stages of the project to provide safe workplace to all employees and to protect them against accidents.

- To ensure that there are satisfactory health and safety standards within their organization

Literature Review

The construction industry plays a vital role in the social and economic development of all countries. Its scope is very wide from larger civil engineering projects such as road and bridge, building, water supply and sewerage schemes and river and canal work etc. Construction works are also needed in agriculture, industry, education, health and other service industries. It is classified into various segments: industrial, housing, commercial, utilities and infrastructure work. Thus the construction industry is a mixture of different organizations, which directly and indirectly influence the construction process. These organizations include property developers, architects, engineers, quantity surveyors, accountants, lawyers, civil engineering contractors, engineering contractors, management contractors, laborers', subcontractors and specialist trades. The construction industry's importance has been confirmed by several studies (Coble and Haupt, 1999). The most common activity in construction is general building work which is domestic, commercial or industrial in nature. This work may be new building work, such as a building extension, or, more commonly, the refurbishment, maintenance or repair of existing buildings. The buildings may be occupied or unoccupied. Such projects may begin with a partial or total demolition of a structure which is a particularly hazardous operation. Most construction projects cover a range of activities such as site clearance, the demolition or dismantling of building structures or plant and equipment, the felling of trees and the safe disposal of waste materials. The work could involve hazardous operations, such as roof work or contact with hazardous materials, such as asbestos or lead. The site activities will include the loading, unloading and storage of materials and site movements of vehicles and pedestrians. Finally, the construction processes themselves are often hazardous. These processes include fabrication, decoration, cleaning, installation and the removal and maintenance of services (electricity, water, gas and telecommunications). Construction also includes the use of woodworking workshops together with woodworking machines and their associated hazards, painting and decorating and the use of heavy machinery. It will often require work to take place in confined spaces, such as excavations and underground chambers. At the end of most projects, the site is landscaped which will introduce a new set of hazards. Hence throughout the world, construction is one of the most hazardous industries and it is generally recognized that health and safety on construction sites is not satisfactory as the level of occupational accidents is high when compared to other industries. The same complexity can be found with construction workplaces. Within the workplace construction processes involve hazardous activities, such as working at height, manual handling, exposure to hazardous materials, demolition, frame erection, lifting operations, scaffolding and ground works, bulk materials and heavy equipment handling, as well as the varying jobsite personnel and the regularly changing worksites.

Methodology

The survey was conducted with a variety of construction companies in India. It comprised a total of 350 original structured questionnaires that were distributed to over 70 construction workers, contractors, owners, and consultant organizations. A series of interviews with both safety managers and quality managers were held during the same period. The main interviews covered senior site engineers from different companies. The population comprised companies that are operating in India. The sampling frame comprised general building contractors registered with the India Building and Construction Authority. Of these, questionnaires were sent by post (see cover letter sent with questionnaire in Appendix A), with self-addressed and pre-stamped envelopes, to 350 randomly selected construction firms. In the questionnaire, respondents were requested to provide information relating to safety aspects for achieved projects, recently completed or ongoing projects. Respondents were also asked to rate the extent to which each of the variables helped workers to adopt safe work practices, on a five-point Likert scale, where 1 is not important at all and 5 is very important. Thus the scales that were used in this study were as follows:

- 1 = least important
- 2 = slightly important
- 3 = moderate important
- 4 = important
- 5 = most important.

The main reasons for using the Likert scale were;

- i) The scale is an important and popular tool for measuring a large number of risk factor variables that are very closely associated to each other, where in practice the measurement of risk perception can be very subtle.
- ii) It can be used as an ordinal and comparative scale for measuring perceptions.
- iii) The scale could be used as an interval scale to allow for data transformation.
- iv) It allows finer discriminations to be done between the measured factors.
- v) It takes minimum participant's time to answer

vi) Data can be transformed for statistical use in a computer programme i.e. SPSS.

Although the Likert scale offered numerous advantages, the researcher was well aware of the limitations this type of scale caused in practice (Cho and Fellows, 2000). These limitations have been summed up by Rees (1997) as follows;

Conclusion

- In all medium construction companies tend not to have a specialised safety officer and hence produce poor health and safety policies.
- In all large construction companies, safety policies were signed by safety managers with extensive experience and training in safety which reflects their awareness of its importance and commitment to the safety of their employees

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