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An Evaluation of Safety Management in Construction Industry

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ABSTRACT: The Indian society and economy have suffered human and financial losses as a result of the poor safety record in the construction industry. The purpose of this study is to examine safety management in the construction industry. The study will collect data from general contractors, who are involved in major types of construction. Collected data include information regarding organizational safety policy, safety training, safety meetings, safety equipment, safety inspections, safety incentives and penalties, workers' attitude towards safety, labor turnover rates and compliance with safety legislation. The study will also reveal several factors of poor safety management. Thus the paper will conclude by providing a set of recommendations and strategies to contractors for improving their safety performance. Safety management in construction is a paramount concern in the dynamic and potentially hazardous environment of construction sites. This abstract provides an overview of the essential-components and strategies that constitute an effective safety management system tailored to the unique challenges of construction projects. Safety management in construction is to proactively identify, mitigate, manage risks associated with construction activities, ensuring the well-being of all personnel involved. This comprehensive approach integrates regulatory compliance, risk assessment, training, and emergency response planning.

I. INTRODUCTION

The construction industry is one of the major industries in the world. The achievement of this industry in rebuilding areas that devastated by both natural and man-made disasters, and in providing power, has conferred great benefits on the human race. There has, however, been a price to pay for this continuous growth and activity. Although it is difficult to obtain accurate statistics in an industry in which many accidents are undetected and unreported in many countries fatal accidents, and those accidents involving loss of working time, frequently exceed those in any other manufacturing industry. The Contribution to the high rate of accidents are those the characteristics of the industry which distinguish it from the rest of manufacturing industry. The improvement of safety, health and working conditions depends ultimately upon people working together, whether governments, employers or workers. Safety management involves the functions of planning, identifying problem areas, coordinating, controlling and directing the safety activities at the work site, all aimed at the prevention of accidents and ill health. Accident prevention is often misunderstood, for most people believe wrongly that the word "accident" is synonymous with "injury". This assumes that no accident is of importance unless it results in an injury. On a construction site there are many more "incidents" than injuries. They cannot afford to wait for human or material damage before doing anything. Safety management means applying safety measures before accidents happen. The introduction of safety management in a construction site is a critical step in ensuring the well-being of all personnel involved in the project. It sets the foundation for a safe work environment by establishing protocols and procedures to identify, prevent, and respond to potential hazards. Here's a structured introduction: The significance of the construction industry to the economic and social life of the country is noteworthy. The industry needs much investment and involves various types of stakeholders and participants. From the point of view of safety the conditions normally encountered in the construction industry does not lend themselves to the degree of control, Possible in other industries where more stable conditions are generally obtained. The construction industry is usually very large, complex, and different from other industries.

Hence it is prone to numerous health hazards.

II. LITERATURE REVIEW

Jan K. Watcher, Patrick L. Yorio (2013) This study theoretically and empirically developed the ideas around safety management practices. Data were collected using safety manager, supervisor, employee surveys designed to assess safety management system practices, employee perceptions resulting from existing practices and safety performance outcomes. The author identified the relationship between the level of safety focused worker emotional and cognitive engagement with accident rates.

Natalie C. Skeepers, Charles Mbohwa (2015), studied a cross sectional study, over 348 questionnaires were e-mailed to construction companies in Gauteng, with 155 valid responses received and 44.5% valid response rate achieved. Through the analysis of SPSS, the results showed that leadership visibility and behavior affects safety culture and safety performance in the construction industry. The study suggested improving safety performance by providing well-entrenched safety management systems with the foundation being, safety leadership, communication, commitment and employee training.

M.N. Vinodh Kumar, M. Bhasi (2010) measured employees' perceptions on six safety management practices and self-reported safety knowledge, safety motivation, safety compliance and safety participation. Survey was carried out using questionnaire among 1566 employees belonging to eight major accident hazard process industrial units in Kerala, a state in southern part of India. Analysis was made using AMOS-4 software. The author highlighted the need of safety training of the workplace.

III. METHODOLOGY

The methodology of safety management in a construction site involves a systematic approach to identifying, assessing, and mitigating risks associated with construction activities. Here's a simplified outline:

(i) Risk Assessment and Hazard Identification:

- Identify potential hazards and risks associated with the construction site. - Evaluate the likelihood and severity of these risks.

(ii) Regulatory Compliance:

- Familiarize with local, state, and federal regulations governing construction safety.

- Ensure compliance with relevant standards and codes.

(iii) Safety Planning and Documentation:

- Develop a comprehensive safety plan that outlines procedures and protocols.

- Document safety policies, procedures, and emergency response plans.

(iv) Training and Education:

- Provide thorough training to all personnel on safety protocols, equipment usage, and emergency procedures.

- Keep records of training sessions and certifications.

(v) Personal Protective Equipment (PPE):

- Mandate the use of appropriate PPE for all workers on site. - Regularly inspect and maintain PPE to ensure effectiveness.

(vi) Site Inspections and Audits:

- Conduct regular inspections to identify and correct safety deficiencies.

- Perform periodic audits to assess overall safety performance.

(vii) Incident Reporting and Investigation:

- Establish a clear process for reporting accidents, near misses, and incidents.

- Investigate incidents to determine root causes and implement corrective actions.

(viii) Communication and Coordination:

- Facilitate open communication channels among all stakeholders regarding safety concerns.

- Coordinate with subcontractors and suppliers to ensure compliance with safety requirements.

(ix) Emergency Response and Evacuation:

- Develop and communicate emergency response plans.



- Conduct drills to ensure all personnel understand their roles during emergencies.

(x) Continuous Improvement:

- Regularly review and update safety protocols based on lessons learned and industry best practices.

- Encourage feedback from workers to identify areas for improvement.

(xi) Safety Culture and Accountability:

- Foster a culture of safety consciousness among all personnel. - Hold individuals accountable for adhering to safety protocols.

(xii) Documentation and Record-Keeping:

- Maintain thorough records of safety-related activities, incidents, and training.

- Use this data to track progress and make informed decision

III. OBSERVATION & ANALYSIS

To perform an observation and analysis of safety management in a construction site, you can follow these steps:

1. Site Selection: Choose a construction site that represents the type of project or industry you are interested in studying. Ensure you have permission to conduct the observation from the site management.

2. Observation Design: Determine the specific aspects of safety management you want to focus on during your observation. Examples may include hazard identification, use of personal protective equipment (PPE), adherence to safety protocols, or communication and training practices.

3. Pre-Observation Preparation: Familiarize yourself with the safety regulations and best practices relevant to the construction industry. This will help you compare observed practices to established standards.

4. Conduct the Observation: Spend time at the construction site, closely observing different activities and practices related to safety management. Take notes on what you see, paying attention to both positive and negative safety behaviors and practices

Observe the effectiveness of safety communication between workers, supervisors, and management.

- Watch for potential hazards and how they are addressed or mitigated.

- Assess the availability and proper use of safety equipment and tools.

Document any training or educational activities related to safety management.

5. Data Analysis: Review and analyze your observation notes and data. Look for patterns, trends and any areas where safety management can be improved. Consider the following questions:

- Are workers consistently following safety protocols?

- Is safety training provided and effectively implemented?

- Are there common hazards or areas where accidents are more likely to occur?

- Are there any communication gaps or challenges in reporting safety concerns?

IV. CONCLUSION

The work environments in construction activities are generally more hazardous, than other industries due to the use of heavy equipment, dangerous tools, and hazardous materials, all of which increase the potential for serious accidents and injuries. Therefore, it is evident that a focused dedication inwards safety is needed from construction at all levels. It can be inferred from the survey data that safety managers have the opportunity to influence and enhance the sense of safety and the quality of the work environment. Owners of large projects can more actively participate in construction safety management in each stage of project execution including project design contract selection, contract development, the construction phase, selecting safe contractors, and developing the safety culture on the projects through safety training and safety recognition programs Every individual on this construction site is responsible for their own safety and the safety of their fellow workers. This includes adhering to safety protocols, promptly reporting hazards or incidents, and actively participating in training and drills. Safety management is not just a set of rules; it's a collective commitment to the well-being of everyone involved. Together, we can create a work environment that is not only efficient but also safe and secure. Let's work together to make safety an integral part of our construction process. This introduction sets the tone for a strong safety culture on the construction site, emphasizing the collective responsibility of all team members in maintaining a safe work environment.



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