

INVESTIGATION OF DIFFERENT SAFETY MANAGEMENT LEVELS TO IMPROVE THE SAFETY CULTURE IN THE CONSTRUCTION SECTOR

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Abstract

Despite the implementation of several initiatives, the construction industries still remain as the most vulnerable and witnessed a scarcity in offering adequate safety to the working people. This study focused on the different indicators used for the safety management in construction industries. In addition, the detailed discussion about the stages used for the establishment of a safety culture is also carried out in the study. Apart from that, the discussion also houses the key challenges and best practices required for maintaining a well-developed safety culture in the construction industries. For a more accurate study, the insight of the prevailed condition of safety culture in the Indian context is also included in the present study.

Keywords: *Safety culture, Construction industries, Safety indicators*

INTRODUCTION

A country's building industry is a major job creator and economic engine diversified business environment and wide employment generation (Goncalves Filho & Waterson, 2018). Despite a significant contribution, the construction sector is facing large number of accidents like fall from the height, machinery failure, electrocutions, collapse of buildings etc. and posed a serious threat to the working people and in particular, construction sector is responsible for the enhancement of fatalities each year (Jin et al., (2019); Hossain, & Nadeem (2019); and Jaafar et al., 2018). Therefore, it is essential to prioritize the prevention of accident and maintain the well-being of the working people. The risk in the construction arises from several factors like height of working place, noise, dust, excavation and the usage of different power tools "(Abioye et al., 2021)". The adoption of contemporary construction equipment and innovative approaches can facilitate a risk free environment and thereby, creating the prevention of accident (Yiu et al., 2018). A combination of rising demand for staff members and a general lack of education and training has left the construction industry more susceptible to disruption. This is why government bodies must pass laws pertaining to construction industry safety and health at home in order to lessen the likelihood of accidents occurring on the job.

Indicators in Safety Environment

The commitment of safety from the leadership and workers in a company indicates the existence of a robust safety culture in the company. It is observed that the organizations in the upper end of culture spectrum have more safety practices compared to those present in the lower part of the spectrum. The indicators like hazardous condition, establishment of accountability are mostly used, while the indicators like joint worker/management safety committee, recognition and reward system for safety

and health system are having least utilization.

Optimistic impact of Safety culture

It is observed that the contractors, who have adopted In the past, those who prioritized safety instead of others reaped greater rewards. Thus, it is evident that, it has been a rise in the degree of safety attitude will always increase the return from the investment.

Characteristics of Safety culture

It is believed that the creation of a safety culture requires a targeted intervention activities and the establishment of tangible structures, systems and processes (Fang, 2013). Therefore, the entire research on safety culture focused on the creation of the features of a suitable safety culture along with the objective of motivating other to follow these features in order to enhance workplace health and safety performance. To achieve this objective, the safety culture should be the coalescence of views, processes/systems and behaviors that define the competence and approach of a primary contractor in the management of Safety at work environments in a particular project (Feng and Trinh, 2019).

Phases involving the Establishment of Safety culture

To cultivate a safety culture, it is highly recommended to use the 4-stage methodology shown below. The approach is considered scientific due to its universal applicability across several industries.

3.2.1 Stage 1: Job Safety Analysis (JSA) / Hazard Assessment

It is a methodical strategy used for the reduction of “occupational health and safety” hazards and served as the fundamental basis for the health and safety programs. There are several steps involved in the analysis and are described below:

1. Visiting the construction sites to gather the information regarding nature of work space, job procedures and making the assessment of vulnerability (Latief et.al, 2017)
2. Identifying the most valuable strategies for reducing the risk and if possible, creating necessary protocols for the tasks associated with high level of risks.

RESULTS OF THE ANALYSIS

The analysis results in a process flow of the activities by generating a training matrix for each division. Apart from that, the analysis enables the collection of all necessary protocols for high risk operation, lists inspections, preventive maintenances and all specific emergency procedures. Such a listing makes the assessment of the risk associated with workplace violence and the possible mitigating procedure.

Stage 2 Developing & implementing the health and safety program

This step involves the creation of guides outlining safety policies and procedures based on the findings of the hazard analysis conducted in the previous stage and the manual should be aligned with legal provisions of the country ... As a consequence, this stage will be in the optimum phase, if it follows directly to the risk evaluation phase (Li et.al, 2015).

Stage 3: Training implementation and planning

It is necessary to deliver training (offline and online) for creating awareness among the staffs and supervisors about the Occupational Health and Safety courses and maintain the records of training. For making improvement in the training, it is crucial to implement a real-tracking system of training information (Li and Tong, 2018).

Stage 4: Program Monitoring, Mentoring, and Continuous Improvement Plan

Following the operation, the regular monitoring the system with the use of online tool is important. The information is presented in dashboards and for an effective monitoring; the on-site meeting is

required in quarterly basis.

Safety Management in the Construction Industry

The construction sector accounted for 20% of worker fatalities in 2020, according to the Bureau of Labor Statistics. Consequently, a safety management system is essential for making job sites risk-free places to work. Below, we will go over a few of the most important difficulties that come with handling safety issues:

1. High Risk of Accidents.
2. Complex Work Environment.
3. High Turnover Rates
4. Limited Resources

Despite several challenges and difficulties, there are some other optimal conditions are prevailed and the construction companies can use these tricks in maintaining a safety environment. These conditions are discussed below:

1. Development of a comprehensive safety plan
2. Conduction of safety audits in a regular manner for identifying possible safety dangers.
3. Imparting safety training
4. Offering safety incentives to motivate the workers in prioritizing the safety
5. Utilization of personal protective equipment
6. Fostering a safety culture
7. Utilization of modern technology.

CONCLUSION

Improving the environment for safety in the builder industry was the primary goal of this research, which aimed to examine various safety management systems. During the course of work, a discussion regarding the safety indicators and their nature of utility is carried out. Apart from that, this study also thrown a light on the stages involved in the formation of a robust safety atmosphere. In the final section, the character of safety management along with its key challenges and best practices are also explained. In overall, it is concluded that the rising nature of the construction industries and its significant contribution requires the implementation of an effective strategy in reducing the workplace accidents and other hazardous activities.

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