

Essay on human factor in industrial accident prevention - a case study on constru...

[Business](#), [Company](#)



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Introduction

The construction industry is termed as high hazard industry and comprises a lot of activities which involves alteration, repairs, construction. Examples of activities in this important industry include residential construction, bridge erection, roadway paving, demolitions, excavations and so forth ("Construction Industry"). The construction industry is one of the fatal four industries; others include transportation & warehousing, agriculture, fishing, forestry & hunting and mining/quarrying/oil & gas exploration. However, studies show that the construction industry has the highest incidence of work fatalities. (" McGraw-Hill Construction." 2013).

However, safety is an investment that provides real benefits especially to a high-risk industry like construction industry. Implementing safety not only

benefits the employees but also it benefits the workers. It helps keep skilled employees on the job and also keep the project in track. On the company's part, it reduces the risk of litigation and regulatory action (Cesarini et al. April 2013). Obviously, human factors play a crucial role in preventing industrial accidents and therefore the purpose of this paper is to study these factors in relation to the construction industry.

Causes of Industrial Accidents – The Fatal Four

The main elements of accidents in the construction industry, also referred as the fatal four include falls, caught between objects, electrocution and struck by objects. It will imperative to consider that these injuries contribute to 57% of the fatalities in the construction industry (Smith April 17, 2014). Among all these four causes of industrial accidents, " falls" are considered as the frequent cause of fatalities contributing up to 36% out of the 57% fatalities. This is followed by " struck by objects" that contributes 10%. Electrocution and caught between objects contribute to 9% and 2% respectively of fatalities in the construction industry.

As per report issued by The US Bureau of Labor Statistics in September 2012 that fatal injuries in the private construction sector has declined during the period between 2006 -11 by 46%.(Cesarini et al. April 2013). However, the decline in fatalities in the construction industry may be attributed partly to the decrease in the overall activity in the industry between 2006 and 2011. Irrespective of the reduction in fatalities in the industry, the BLS also stated that the construction industry still has the second highest rate of work fatalities of all the industries. (" McGraw-Hill Construction." 2013). The most

dangerous type of construction includes specialty trade that contribute about 48% of the fatalities and engineering construction which contributes 17%. The building construction contributes 16%, equipment construction 12% and building finishing constructions 7% (Smith April 17, 2014).

Construction Accident Prevention

The study above makes it clear that construction industry is a high-risk industry. However, in the recent years, most construction firms are applying different safety measures to help mitigate these risks to achieve a safer workplace. Obviously, the implementation of safety policies has a lot of benefits to accord a construction company. A strong safety reputation improves a company's reputation, makes it more competitive, and reduces costs (Cesarini et al. April 2013). However, it is significant for safety culture to be appropriately implemented that everybody in a construction industry must be involved ranging from the top managers to the workers. In addition, safety should be a part of the project even before its execution and appropriate strategies must be employed to make sure that the safety standard is upheld. Construction firms can ensure the safety through these human factor approaches.

The managers should be trained in safety

The implementation of safety lies with the top executives. Therefore, construction firms should make it compulsory that the top executives go through the OSHA 30 hour certification training and other trainings that would equip them with the necessary tips required for safety. In addition, the workers can only take safety very seriously if the senior managers work by

example. Thus, it is important that safety becomes a core value of the top managers and every worker in a construction firm.

Proactive measures in Construction Safety Planning

Before the execution of any construction project, it must have been planned on paper. Pre-planning is a key step in construction projects. It is important that safety management and planning be made an important part of the pre-planning step. This should involve addressing all possible hazards in the construction site and exposing them in the light of the day. It involves analyzing the possible ways to mitigate the construction hazards in all the stages of a construction project. A construction company must dedicate time towards planning and also ensuring that the subcontractors assigned to handle a given project are trained in safety management. Time spent in safety preplanning is not wasted but invested. Hazards in a construction work go a long way to slow down the process and also cost the construction firm money and resources. “ Before work start, a project specific safety plan should be developed to provide an overview of the scope of the work and the names, roles and responsibilities of the key personnel. It should include a list of local emergency responders and medical facilities; emergency procedures and evacuation plan; fall management and retrieval procedures; substance abuse testing and new employee orientation.” (Cesarini et al. April 2013, P: 02).

Developing safety culture in a construction firm

Unlike other industries, the construction industry carries out most of its activities outdoors in an environment that are not conducive for safety. This

explains why the construction industry is labeled a high-risk industry.

Accident theory on human factors delineates that there is a correlation between accidents in the construction industry and human faults. Misnan et al., (2007) stated that there are three factors that cause human faults. These include overload, irrelevant response, and irrelevant activities. (Misnan et al. 2007). Studies show that the low level of safety culture in the construction industry is the major cause to be labeled it a high-risk industry. Misnan et al. (2007) further stated that the efforts of improving safety at work in the construction industry would not be useful unless the safety culture is improved. Safety culture does not only concern the employees, but it is a primary responsibility of each and everybody in the construction industry. The safety culture implies that safety should become an integral of the construction industry regarding operation (Misnan et al. 2007). According to Gledon & McKenna (1995), certain factors indicate the operation of safety culture in a construction firm. These include effective communication, good organizational learning, and organizational focus. Moreover, it includes external factors such as the financial health of the organization and the management of the prevailing economic climate and impact of regulation. (Misnan et al. 2007).

The workers should be trained for safety

Common sense is good, but it should not be confused for safety. Safety should not be limited to new hires, before any project commences; employees should be trained in safety and properly briefed on what they need to know on safety with respect to the work at hand. In addition, the

training should cover the appropriate use of a number of safety equipment when the need arises.

According to Cesarini et al. (April 2013), “ the company should provide an orientation specific to each project. The orientation should include an overview of the project, an in-depth review of the safety requirements and expectations, evacuation plans and procedure, disciplinary action, substance abuse testing policy and fall management procedures and requirements". Substance abuse is one of the particular causes of accidents in construction industries. This is why substance abuse testing should be made compulsory for all employees involved in a project before it execution so as to ensure safety. In addition, the communication barrier should not be allowed to stand against safety training in construction firms. Effectiveness in communication is termed as one of the most significant aspects in any industry. It is also a barrier in communication regarding the issue in the construction industry. In order to ensure workplace safety, this barrier ought to be overcome (Cesarini et al. April 2013).

Conclusion

The study presented in this paper discussed safety in the construction industry. Numerous factors contribute to the high-risk state of the construction industry. Although the number of fatalities in this industry greatly reduced between 2006 and 2011but, it is still ranked 2nd among fatalities according to the U. S. Bureau of Labor Statistics.

Obviously, the human factor is one of the significant causes of accidents in the construction industry and the study presented here outlined some

human factor approaches towards preventing accidents and fatalities in the industry. These approaches include among many others developing safety culture in a construction firm, training workers for safety, and being proactive in construction safety planning, training managers on safety and others. In short, everyone associated with construction firm, starting from the managers to the workers, has a role to play in ensuring workplace safety.

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