
Does Improving Workmen's Skill Help in Mitigating Occupation Hazards? – A Case Study at Construction Site

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ABSTRACT

Studies show that construction is among the most dangerous occupations and implementation of occupational safety and health at work there poses several challenges for various reasons. Some of the reasons are common globally, such as dynamic nature of the activity, casual nature of employment, migration, exposure to extreme weather etc. Some issues are specific, connected to demography, socio-economic background, organizational culture, including education, training, supervision, etc. In India, construction industry is growing at a fast pace with increasingly large number of people - an estimated 41 million, as per the 12th 5-year plan. During recent years there have been efforts to transform construction work to be more mechanized and skill based, though this process will take time to be effective, given various factors, including variety and volume associated.

Generally, large percentages of workmen originate from agrarian as well as other technically non-relevant backgrounds; do not have relevant skills or competencies before starting their career. Many of them start working and keep learning on the job. Traditionally these workers too, get equally exposed to several high level occupational risks, in-built with the nature of the construction work, leaving them prone to injuries and occupational illnesses, which gets aggravated due to their relevant knowledge and skill. Various initiatives taken by enterprises as well as by the Governments for developing skill level of workmen through structured skill based training has proven to be a good step not only for improvement of productivity and quality but also to enhance their understanding about the occupational hazards and steps needed for mitigation. It has been noted that though the construction workers are exposed to high risk in general, the pattern of their interaction with occupational hazards changes once they go through various levels of formal on-the-job or off-the-job skill improvement training. It is in contrast with the response of construction workers who have not received any such training at all.

A study of injury pattern also suggests that skilled people have been less prone to incidents as they are well equipped, in terms of knowledge, skill and attitude, to adapt the unique challenges of exposure to occupational hazards at construction work.

Key words : Construction, Skill, Ergonomics, Hazards

INTRODUCTION

Construction projects, especially large ones, are complex and dynamic. Several employers may work on one site simultaneously, with the mix of contractors changing with the phases of

the project. [1] In India, construction industry plays an important role in national economy as this is the second largest employment provider after agriculture.

Construction sites draw workmen from various parts of the country. India is geographically a vast country with diverse culture and multilingual habitants. Rapid growth in industrialization and urbanization created huge work opportunities and people are migrating from one place to the other to get employment. Due to the transient nature of the activity workers continue to move from one project to the other changing employers' one after the other, sometimes through middlemen.

Typically, construction accounts for 20-30 percent of all occupational deaths and injuries and most likely illnesses, a level that is 3-4 times greater than its share of all employment.[2] A study shows that workers who had life-time employment in construction without being killed on the job have suffered greatly from this occupation. Nearly 85% have experienced one or more serious injuries, while almost 100% have reported work-related musculo-skeletal disorders[3] hence for human resource with a relatively lower education profile, the skill levels would need to be continually upgraded even for those with minimal education. Substantial skill building efforts will be needed at the 'skilled workforce' level – for example, for carpenters, electricians, welders, operators, plumbers, masons, crane operators, supervisors, and others. The incremental human resource requirement in the 'skilled workforce' alone is expected to be above 9 million till 2022. The Real Estate, Electricity, and Roadways segments would drive employment in the Construction sector. Apart from this, the incremental requirement at the level of other construction workers is expected to be over 38 million till 2022[4] Lately, there have been initiatives to develop the skill level of workmen through structured skill based training, to improve quality, productivity and safety[5].

METHODS

As per report on Human Resource and Skill Requirements in Building, Construction Industry and Real Estate Services (NSDC) The building construction and real estate sector in India currently employs around 33 million persons.

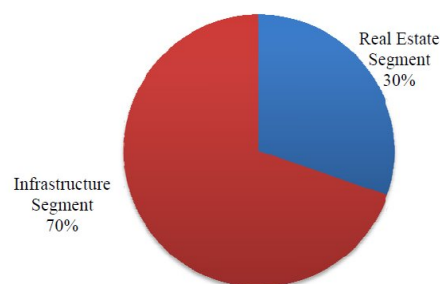


Fig 1: Breakup of employment in Building, construction and Real Estate sector

And studies carried out in 2006 revealed that 25600 unskilled and 3267 skilled workmen are employed in this sector. In general bulk of workforce at around 82.5% constitutes unskilled workers, 10% constitutes skilled and rest is constituted by engineers, foremen and clerical staffs.

Those constituting the skilled talent pool span across various trades and professions such as:

- Crane operators
- Electricians
- Welders
- Masons
- Plumbers
- Carpenters

To understand the impact of skill development we studied around 27 high potential incidents amongst the workmen.

Fig 2 clearly suggests that incidents do occur with both skilled and unskilled workmen, rejecting a perception that only unskilled workmen are prone to incidents due to lack of knowledge.

To get a better picture same cases were analysed year wise for unskilled, skilled and semi skilled categories (Fig 3)

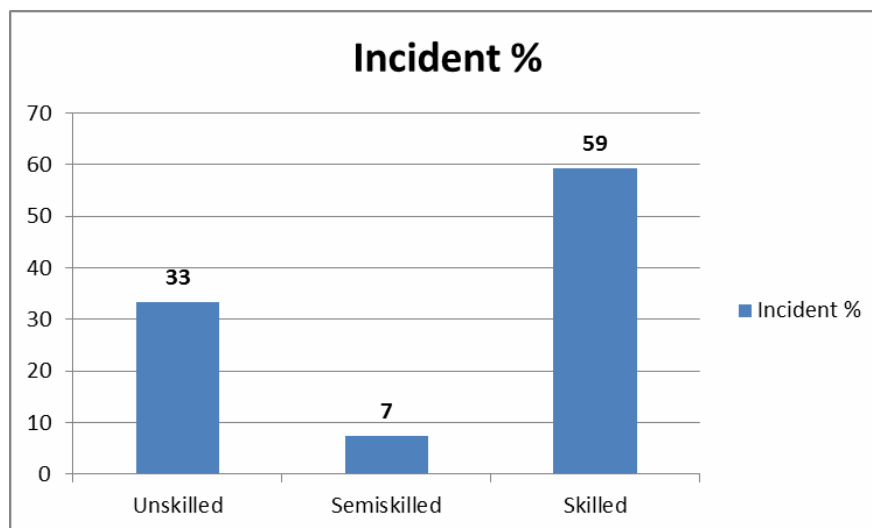


Fig 2: Incident among workmen in various skill categories

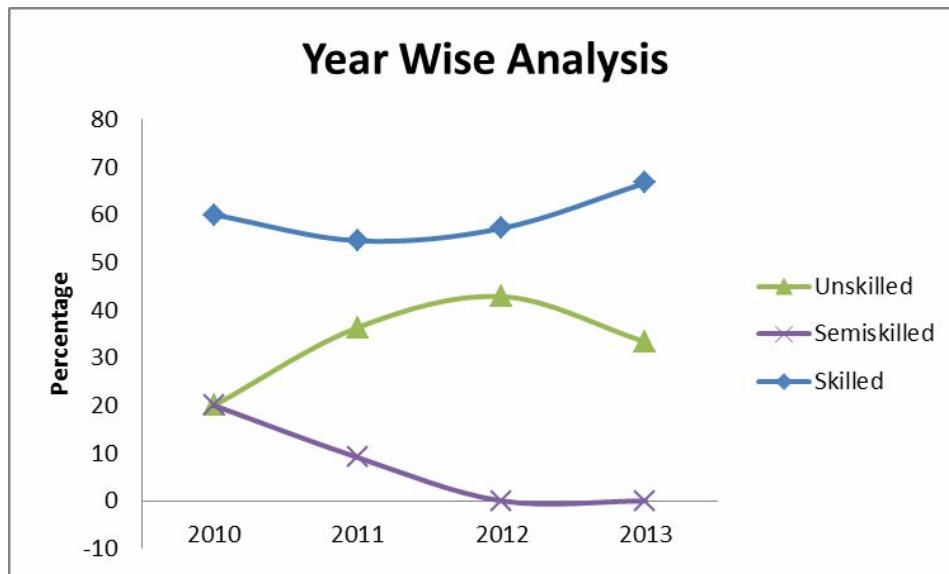


Fig 3: Year wise incident analysis among workmen in various skill categories

Year wise analysis too suggest high rate of incidents among skilled and unskilled categories. We analysed the incidents prevalence among various skill category as indicated in the figure below (Fig 4):

These statistics clearly indicates following gaps among skilled workmen:

- Inadequate knowledge of specific areas
- Inadequate ability to understand instructions of supervisors/engineers

When it comes to helpers following gaps are identified:

- Lack of safety knowledge
- Inadequate workplace skills

Inability to follow simple instructions

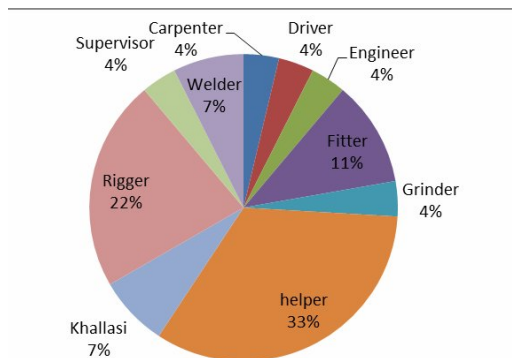


Fig 4: Skill Category wise incident comparison

DISCUSSION

Skill trainings play a very important role in providing the relevant inputs which is a prerequisite before starting any activity at site. Trained workforce is able to identify the hazards and work related disorders associated in the operation to ensure the work place is safe for work. Conducting these training programs at regular intervals to the employees improves morale and leads to higher productivity as well.

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