

Literature Review:

Identifying behaviour patterns of construction safety using system archetypes

Brian H.W. Guo, Tak Wing Yiu, Vicente A. González

- Government incentive programs work short term, but fall off long term
- Potential future procurement is an effective safety measure
- Small contractors are more likely to see safety as a burden opposed to a priority
- "If older workers do something wrong, young workers are not confident enough to point it out. They tend to observe them and copy them."
- "Blame culture is absolutely common in the industry. After accidents occur, managers tend to point the finger at workers, without addressing root causes of accidents. Workers just do the best they can. People fail to ask why unsafe acts are acceptable on site."
- Proactivity leads to a more steady safety record. Reactive safety policies are less effective

Critical factors and paths influencing construction workers' safety risk tolerances

Jiayuan Wang, Patrick X.W. Zou, Penny P. Li

- External risk factors have a greater bearing on construction worker's safety than internal factors.
- Risk tolerance must be carefully handled at a management level.
- Pay incentives can increase risk behavior when working overtime hours or when fatigued.

Application of geographic information systems in construction safety planning

V.K. Bansal

- 3d modeling of the jobsite can improve our ability to identify risks.
- Study proves that decisions of designer and project planner have direct impact on workers safety.

Leading indicators of construction safety performance

Jimmie Hinze, Samuel Thurman, Andrew Wehle

- Using indicators we can predict the safety performance of a project.
- Management that is active in safety tend to have better safety records.
- companies that track leading indicators will be able to maintain a more accurate assessment of the effectiveness of the safety program or the safety process.

Jobsite Safety

Moucka, Liz

- Workers respect a contractor that provides them a safe jobsite.
- Better working conditions lead to workers having more energy, in turn, becoming more productive.
- Providing a clean place for the workers to rest leads to better housekeeping on the site.

Perceptions of Efficiency in Construction Jobsite Safety

Methodology

- Literature review of case studies in which contractors were able to increase efficiency with safe practices
- Survey of 30 students and industry professionals with jobsite experience
- Data analysis of survey
- Proposal of possible methods to increase worker safety on site

Survey Questions

1. There is appropriate safety equipment on my job site
2. Safety Equipment is easily accessible on my job site
3. Safety equipment on my job site is inspected before each use
4. **On my job site, field workers are able to bring all of the equipment they need to their workspace at once**
5. On my job site, safety equipment is kept in a knaack box (or similar) in the field near the workspace
6. **Following proper safety procedures slows down production in the field**
7. **On my site we have lost time due to lack of proper safety equipment**
8. **How many hours per week do you estimate are lost due to safety concerns (i.e. searching for proper equipment, waiting for proper equipment to arrive on site)**
9. **It is cost prohibitive to individually provide safety equipment for every worker on our job site**
10. When scheduling, I account for safe work practices in the field
11. **In the construction industry, safety is prioritized over timeliness**
12. What is your position within your company?
13. How many total years experience do you have in the construction industry?

Abstract

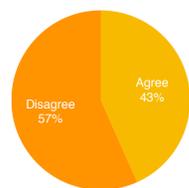
This project is to examine the perception of jobsite safety practices of California contractors. A survey of students and industry professionals was the methodology used to gather this information. This survey consisted of various questions about the perception of safety practices on jobsites the respondent has worked on themselves, as well as their perception about safety in the construction industry as a whole. Safety is a priority in the construction industry. In my research I found different methods to go above and beyond Cal/OSHA standards. In these cases, with decreased safety risk comes and increased likelihood that the project will be finished in a timely manner.

Data Analysis

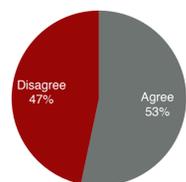
- 53% of surveyed individuals have been on a jobsite that has lost time due to safety equipment
- 57% of surveyed individuals feel that following safety procedures slows down production in the field
- 73% of surveyed individuals feel that safety is prioritized over timeliness in the construction industry
- 57% of surveyed individuals do not believe their workers are able to bring all of the safety equipment to their workspace at once
- 63% of surveyed individuals feel that it is feasible to individually provide safety equipment to each worker on the jobsite

The data suggests that cost is not a barrier to providing safety equipment to field workers, however a majority of surveyed individuals have been on a jobsite that has faced setbacks due to lack of safety equipment. If safety is the biggest concern in the construction industry, but contractors are still facing delays, what can we do to increase efficiency of safety practices?

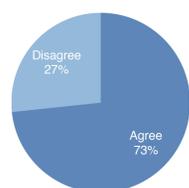
On my job site, field workers are able to bring all of the equipment they need to their workspace at once



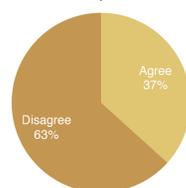
On my site we have lost time due to lack of proper safety equipment



In the construction industry, safety is prioritized over timeliness



It is cost prohibitive to individually provide safety equipment for every worker on our job site



How many hours per week do you estimate are lost due to safety concerns



Following proper safety procedures slows down production in the field

