Measuring the Outcomes of Safety Training

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Background

- Safety training has been identified as one of the most important safety management practices that predicts safety knowledge, safety motivation, safety compliance and safety participation which are key factors of safety performance

- Previous research has suggested models for evaluating safety training effectiveness which typically address
  - safety knowledge
  - safety attitudes and beliefs
  - safety behavior and
  - Health

- Evaluation is crucial to implement evidence-based training interventions and improving the content and focus of training

- More research is needed about the effectiveness of training, and presenting and testing instruments for evaluating the outcomes of safety training

Objectives

- This study is part of a larger study focusing on to create models and develop practices for materializing the potential of safety performance measurement.

- The aim of this sub-study was to investigate
    1) how the outcomes of safety training can be measured and
    2) whether safety training has positive effects on safety performance

- This paper presents a framework and method for measuring safety training outcomes and discusses the employees' perception on the effectiveness of training on safety performance in a case company

Material and methods

- This study utilizes a design science approach in which the intention is to both develop scientific knowledge and solve practical problems
- This study follows the first four steps of the design science model:

Scope ⟩ Design ⟩ Content ⟩ Test ⟩ Deploy ⟩ Maintain ⟩

- Company-specific safety training was carried out
- Employees' perceptions were measured by a survey (n=25)
  - 4 themes
  - 43 Likert-scale questions
  - 5 open questions
- The utilization of the model was evaluated

Results

Table 1. The contents of the model and the main results (n=25)

Perspective	Sections	No of questions	Mean
Safety knowledge	Working environment	4	3.73
	Ability to work safely	4	3.74
Safety attitude, beliefs and motivation	Understanding the significance of safety	5	3.82
	Risk perception	4	3.81
	Safety Motivation	3	4.01
Safety behavior	Adhesion to the instructions	4	3.76
	Feedback	3	3.53
	Active safety participation	5	3.64
Safety performance	Effects on occupational injuries	1	3.84
	Effects on workplace climate	1	3.80
	Supervisory performance	4	3.66
	Employee performance	5	3.86

1 = disagree, 2 = partly disagree, 3 = neither agree nor disagree, 4 = partly agree, 5 = agree

Discussion

- Some perceived improvements in safety knowledge, attitudes, behavior and safety performance can be found

- Raising safe behaviors is typically linked to in-depth and organization-wide interventions and not only to knowledge extension

- The initial phase of the model testing shows positive results and implications

- The results can be utilized in identifying and measuring the outcomes of training and planning adequate interventions to improve safety

- The developed framework may be utilized as a leading indicator of safety performance