

IWP Conference 2012

**The effect of a safety climate training on safety performance.
A longitudinal study on the use of individual protective devices**

We wish our paper will be considered for a poster if it is not allocated for an oral session.

In this period of economic crisis and uncertainty on the future occupational health and safety at work become an important strategy which companies apply to be more competitive on the markets. The increase of OHSAS certifications demonstrates the growing attention to safety in the Italian context. In the last year 2035 companies applied OHSAS 18001 certification to their occupational health and safety management system, 84% more than the previous year (ACCREDIA – CENSIS, 2011). Safety training has a strategic role on the management system of occupational health and safety at work. However literature on this topic (e.g. Robson, Clarke, Cullen, Bielecky, Severin, Bigelow, Irvin, Culyer, Mahood, 2007; Cohen & Colligan, 1998) shows ambiguous findings on the effectiveness of safety training and interventions to improve safety performance of employees, and highlights some methodological criticality. Safety climate has been one of the most frequently studied antecedents of safety performance since nineties. Safety climate is usually defined as the shared perceptions of the employees on policies, procedures, and practices relating to safety. Safety performance can be studied analysing subjective (e.g. self-reported safety behaviours) and objective indicators (e.g. safety outcomes as injuries, micro-accidents but also observed behaviours as the use of individual protective devices). Literature on safety climate shows how safety climate is a robust predictor of safety subjective outcomes, such as safety behaviour, and of objective outcomes, such as accidents and injuries (Christian, Bradley, Wallace and Burke, 2009; Zohar, 2010).

The aim of this study was to explore the training effectiveness on safety performance. The idea was to test the effect of a training focused on the improvement of safety climate with a longitudinal design. Data collection involved 1495 blue-collars from 6 Italian manufacturing companies of Veneto region. Particularly the study regarded the metal and mechanical sector companies involving the main branches of metal and mechanical work (fabrication of machinery, electrical devices and work vehicles), choosing the ones most represented in the territories where the research study was performed. Two different types of safety climate trainings for supervisors were performed and in some cases no training was performed. A long training was scheduled in 6 weekly meetings of 4 hours each and a short one was scheduled in only one meeting of 3 hours. The main topic of the training concerns safety

climate and possible strategy to improve it in a work group. On the bases of the results of the first safety climate measurement, specific topics were defined. Safety climate was analysed by safety agents' point of views, collecting perceptions of workers concerning top management, their supervisor and their colleagues (Brondino, Pasini & Silva, in press). Specific topics of the trainings were focused on critical issues that emerged from the first data collection concerning supervisor's safety climate (e.g. safety communication, safety coaching). A second measurement of safety climate and safety performance was conducted in 3 companies of the previous sample about 10-12 months after the first survey. In all the companies monitoring activities on the use of individual protective devices were conducted after the first survey, and went on for a period of minimum 2 months and maximum 9 months. These monitoring activities were conducted by a staff composed by a researcher, the OSH officer of the company and the workers' health and safety representative.

The results show that the training does not always help to reduce the number of unsafe behaviours, but a moderation effect of safety climate seems to inflect the relation between training and performance.

Particularly, in work-groups with high safety climate a positive effect of the training was always found. Finally, a significant improvement of safety climate and safety performance indicators were registered in the sub-sample in which climate and performance data were collected a second time.

In conclusion, the present study could be considered one of the few contributions investigating the effectiveness of a safety training, which was focused on safety climate by a longitudinal study on subjective and objective indicators of safety performance. We hope that it can be a help to clarify the effectiveness of safety training at workplaces and the methodological criticality emerged in the literature.

Reference

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