

Development of Safety Culture Scale for Firefighting Organizations

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Abstract

Topic Allocation:	Safety and health management
Contribution type:	I would like to submit my contribution in poster format
Abstract Title:	Development of Safety Culture Scale for Firefighting Organizations
1. Description	The purpose of this study is to develop a scale to survey the safety culture of fire stations, taking into account the particular characteristics of firefighting. Based on previous studies of safety culture in other industries, we decided that the safety culture of firefighting organizations should be evaluated for three levels of hierarchy: individuals (firefighters, rescue workers, ambulance crews); teams (brigades, groups, units); and organizations (headquarters, fire stations). We developed a prototype Safety Culture Scale for Firefighting Organizations (SCSFO) composed of three subscales: individuals' safety attitude/behavior; the safety culture of teams, and organizational culture. All the items were seven-level Likert scales.
2. Goal of Research	The goal of this study was to complete a valid and reliable metric scale to evaluate safety culture of firefighting organizations.
3. Applied methodology	To validate the SCSFO, we carried out a questionnaire survey. In addition to the prototype SCSFO, we used four established psychological scales to check concurrent validity: the subscale of "vigor" from the Utrecht Work Engagement Scale (Schaufeli and Bakker, 2004), the Safety Climate Scale (Neal and Griffin, 2006), and psychological safety scales (Edmondson, 1999; Garvin, Edmondson & Gino, 2008). From a sample of 571 individuals (3% of the personnel working for the Tokyo Fire Department), 520

4. Result and main conclusion

completed the questionnaire.

Based on exploratory factor analyses, we extracted five factors of individuals' safety attitude/behavior, three factors of the safety culture of teams, and three factors of organizational culture. All the factors were found to be available for subscales of SCSFO because Cronbach's α ranged between .64 and .89. In order to examine the structural validity of each scale we conducted confirmatory factor analyses, assuming models with higher-order constructs influenced each factor. All models were adopted because of their goodness of fit. Correlation analyses showed a wide range of correlation coefficients between SCSFO scales and other reference scales, but most were moderately correlated, suggesting that the SCSFO has criterion-related validity. Finally, we completed the SCSFO with three major subscales, each with 3–5 subordinate subscales, giving 43 items in total.

Session

Interactive sessions:

After a brief presentation of our research, I'd like to hear comments by the audience then discuss about evaluating safety culture, especially for such organizations as fire stations where missions cannot be completed without taking risk.

Moderation of sessions:

Yes

Topic:

Sustainable development and occupational safety