Safety Culture in Electrical and Electronic Engineering Departments at Taiwanese Universities: The Moderating Roles of Safety Manager and Safety Committee

Tsung-Chih Wu¹, Shu-Hsuan Chang², Chin-Chung Li¹

¹Department of Safety, Health and Environmental Engineering, HungKuang University
²Department of Industrial Education and Technology, National Changhua University of Education

34 Chung-Chie Rd., Shalu District, Taichung City, 43302, Taiwan, ROC
E-mail: tcwu@sunrise.hk.edu.tw

ABSTRACT

This study aims at developing the model of group-level safety culture. It investigates the interactions between organizational and individual factors that affect group safety culture. The empirical data come from a simple random sample survey of 373 teachers in electrical and electronic engineering departments at 70 universities in Taiwan. An exploratory factor analysis finds four factors in the safety culture scale: basic assumptions, artifacts, perceived risks and emergency response, and commitment to safety. A confirmatory factor analysis is used to check the model. The model is acceptable after slight modification, producing a reliable and valid scale for measuring safety culture. A two-way MANOVA indicates interaction effects on safety culture between (a) the presence of a full-time safety manager and the type of laboratory; and (b) the presence of a safety committee and the age, gender and academic rank of faculty members. Therefore, differences in perceptions of safety culture among university faculty vary according to institutional factors at their university. As a contribution to the development of a positive safety culture, the authors make some recommendations for improvement at universities without safety managers or safety committees.

Keywords: Laboratory safety, safety culture, organizational factors, individual factors, interaction effects.