The hazards dealt by safety professionals in Science Industrial Parks

Tsung-Chih Wu\textsuperscript{1}, Sheng-Wen Fang\textsuperscript{2}, Chien-Peng Wang\textsuperscript{2}, Chien-Tsun Chen\textsuperscript{2}

\textsuperscript{1}\textsuperscript{}Department of Safety, Health and Environmental Engineering, HungKuang University
\textsuperscript{2}\textsuperscript{}Institute of Occupational Safety and Hazard Prevention, HungKuang University

34 Chung-Chie Road, Shalu District, Taichung City, 43302, Taiwan, R.O.C.

E-mail: tcwu@sunrise.hk.edu.tw

Abstract

When staff has occupational exposure, there are risks and hazards to their health. Thus, safety professionals play a vital role in hazard management. This study investigated the content, frequency, and ranking of hazard management by safety professionals in Science Industry Parks. The authors also endeavored to explore the differences in perception towards the frequency of hazard management between safety professionals and professors from Department of Safety, Health, and Environmental Engineering (safety educators). The researcher conducted survey research to achieve the goals of this study. Procedures included interviews surveys, expert reviews, questionnaire surveys, and statistical analyses. We collected 248 valid questionnaires with a response rate of 62\%\textsuperscript{.} The hazard management scale (HMS) extracted four factors including ergonomic hazards, physical hazards, biological hazards, and chemical hazards after using exploratory factor analysis. Results showed that the top ten hazards that safety professionals are most likely to encounter are: organic solvents, noise, machinery and installations, lifting or handling, lighting, human errors, particular chemicals, vehicles, working posture, and electricity. Results of one-way MANOVA indicated that the perception between safety professionals and educators towards the frequency of hazard management is significantly different. Therefore, the results can serve as a reference for safety competencies analysis or safety curricula development.

Keywords: Safety professionals, hazards management, exploratory factor analysis, one-way MANOVA