

Developing Measures for Assessing the Causality of Safety Culture in a  
Petrochemical Industry

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Abstract

This paper discusses safety culture in the petrochemical sector and the causes and consequences of safety culture. A sample of 520 responses selected by simple random sampling completed questionnaires for this survey, the return rate was 86.75%. The research instrument comprises four sections: basic information, the safety leadership scale (SLS), the safety climate scale (SCS), and the safety performance scale (SPS). SPSS 12.0, a statistical software package, was used for item analysis, validity analysis, and reliability analysis. Exploratory factor analysis indicated that (1) SLS abstracted three factors such as safety caring, safety controlling, and safety coaching; (2) SCS comprised three factors such as emergency response, safety commitment, and risk perception; and (3) SPS was composed of accident investigation, safety training, safety inspections, and safety motivation. We conclude that the SLS, SCS, and SPS developed in this paper have good construct validity and internal consistency and can serve as the basis for future research.

Key words : Safety culture; Safety climate; Safety leadership; Safety performance; Petrochemical industry