

The Systems Theoretic Accident Model and Process (Stamp) as the New Trend to Promote Safety Culture in Construction

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Abstract : Safety Culture (SCU) involves various perceptual, psychological, behavioral, and managerial factors. It has been shown that creating and maintaining an SCU is one way to reduce and prevent accidents and fatalities. In the construction sector, safety attitude, knowledge, and a supportive environment are predictors of safety behavior. The highest possible proportion of safety behavior among employees can be achieved by improving their safety attitude and knowledge. Accordingly, top management's commitment to safety is vital in shaping employees' safety attitude; therefore, the first step to improving employees' safety attitude is the genuine commitment of top management to safety. One of the factors affecting the successful implementation of health and safety promotion programs is the construction industry's subcontracting model. The contractual model's complexity, combined with the need for coordination among diverse stakeholders, makes it challenging to implement, manage, and follow up on health and well-being initiatives. The Systems theoretic accident model and process (STAMP) concept has expanded global consideration in recent years, increasing research attention. STAMP focuses attention on the role of constraints in safety management. The findings discover a growth of the research field from the definition in 2004 by Leveson and is being used across multiple domains. A systematic literature review of this novel model aims to meet the safety goals for human space exploration with a powerful and different approach to safety management, safety-driven design, and decision-making. Around two hundred studies have been published about applying the model. However, every single model for safety requires time to transform into research and practice, be tested and debated, and grow further and mature.

Keywords : stamp, risk management, accident prevention, safety culture, systems thinking, construction industry, safety

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