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A Training Platform to Enhance Offshore Safety Based on Fuzzy Cognitive Map

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TREO
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Modeling Interdependent Principles to Enhance Organizational Reliability

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Large-scale accidents in socio-technical systems can have devastating consequences, including loss of lives, poor health outcomes, damaged ecosystems, reduced economic opportunities, disruption of local communities, and negative impacts on government budgets. However, the rate of accidents in offshore oil and gas remains consistently and stubbornly high (BSEE, 2017). There are at least two problems in current safety research that require future attention: First, safety guidelines are so generalized and, in climate studies, communicated, tracked, and evaluated at such a generic level (or not at all) that workers and leaders struggle to translate them into internalized action principles (National Academies , 2016). Second, the safety principles are interdependent and have mutually reinforcing but also conflicting relationships, so that improving one principle can cause the performance of another principle to decline, yet there is little guidance as to how to navigate tradeoffs (Leveson, Dulac, Marais, & Carroll, 2009). These two issues hamper the potential of safety guidelines to inform management practices. We therefore conducted a proof-of-concept study that includes two parts:

First, we utilized an exploratory study using an applied science or engineering (AS/E) paradigm to investigate characteristics that are important to organizational reliability. We achieve this purpose by developing a reliability model that reflect the state-of-art industrial standards and academic research regarding organizational reliability.

Second, we also conduct a focus group workshop that are participated by middle level managers in the oil-industry, which represents a setting that the reliability and safety of operations are of critical importance.

We have an advisory board from the industry to provide feedback regarding the training platform. We now wish to receive feedback from the academic community of IS discipline.

Reference

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