

OPTIMIZING OCCUPATIONAL SAFETY IN THE MANUFACTURING CONTEXT THROUGH SIMULATION OF HAZARD AND RISK PERCEPTIONS

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Occupational risk assessment and hazard identification policies play a vital role in industrial health and safety regulations and compliances. However, traditional risk assessment and hazard identification procedures in the manufacturing industry employ only a 2-dimensional approach in this regard. The purpose of this paper is to investigate the applicability of 3-dimensional visual simulation to foresee and preempt situations and conditions of high probabilistic occurrence. Simulated factors have been through related work practices, environment, conditions and people. Meanwhile, applications of 3-dimensional simulation in occupational safety and health have achieved tremendous success in mining, driving, construction, aviation etc. However, studies of its application in the management of industrial risks and identifications of hazards in manufacturing context are silent. This paper therefore reviews the current risk and hazard identification methods in the industry. Results of the review attest to this gap in preemptive visual risk assessments. Recommendation of the research exhibits simulations of potential risks and hazards with the Visual Components software. The proposal has been analyzed through stereoscopic virtual reality glasses showing clear occupational risks and hazardous issues in a manufacturing industry model that demands attention.

Biography

Ebo Kwegyir-Afful is a PhD student in the Department of Industrial Management in the School of Technology and Innovation of the University of Vaasa. He has numerous industrial experience/exposure and passionate with issues of occupational health and safety. He has published a conference paper on "Effects of occupational health and safety assessment series (OHSAS) standard: A study on core competencies building and organizational learning".

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