

Safety Climate Assessment and Its Impact on the Productivity of Construction Enterprises

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Abstract : Research background: Problems related to the occupational health and decreasing level of safety occur commonly in the construction industry. Important factor in the occupational safety in construction industry is scaffold use. All scaffolds used in construction, renovation, and demolition shall be erected, dismantled and maintained in accordance with safety procedure. Increasing demand for new construction projects unfortunately still is linked to high level of occupational accidents. Therefore, it is crucial to implement concrete actions while dealing with scaffolds and risk assessment in construction industry, the way on doing assessment and liability of assessment is critical for both construction workers and regulatory framework. Unfortunately, professionals, who tend to rely heavily on their own experience and knowledge when taking decisions regarding risk assessment, may show lack of reliability in checking the results of decisions taken. Purpose of the article: The aim was to indicate crucial parameters that could be modeling with Risk Assessment Model (RAM) use for improving both building enterprise productivity and/or developing potential and safety climate. The developed RAM could be a benefit for predicting high-risk construction activities and thus preventing accidents occurred based on a set of historical accident data. Methodology/Methods: A RAM has been developed for assessing risk levels as various construction process stages with various work trades impacting different spheres of enterprise activity. This project includes research carried out by teams of researchers on over 60 construction sites in Poland and Portugal, under which over 450 individual research cycles were carried out. The conducted research trials included variable conditions of employee exposure to harmful physical and chemical factors, variable levels of stress of employees and differences in behaviors and habits of staff. Genetic modeling tool has been used for developing the RAM. Findings and value added: Common types of trades, accidents, and accident causes have been explored, in addition to suitable risk assessment methods and criteria. We have found that the initial worker stress level is more direct predictor for developing the unsafe chain leading to the accident rather than the workload, or concentration of harmful factors at the workplace or even training frequency and management involvement.

Keywords : safety climate, occupational health, civil engineering, productivity

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