World Academy of Science, Engineering and Technology
International Journal of Structural and Construction Engineering
Vol:12, No:06, 2018

Sub-Optimum Safety Performance of a Construction Project: A Multilevel Exploration

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Abstract : In construction safety management, safety climate has long been linked to workers' safety behaviors and performance. For this reason, safety climate concept and tools have been used as heuristics to diagnose a range of safety-related issues by some progressive contractors in Hong Kong and elsewhere. However, as a diagnostic tool, safety climate tends to treat the different components of the climate construct in a linear fashion. Safety management in construction projects, in reality, is a multi-faceted and multilevel phenomenon that resembles a complex system. Hence, understanding safety management in construction projects requires not only the understanding of safety climate but also the organizational-systemic nature of the phenomenon. Our involvement, diagnoses, and interpretations of a range of safety climate-related issues which culminated in the project's sub-optimum safety performance in an infrastructure construction project have brought about such revelation. In this study, a range of data types had been collected from various hierarchies of the project site organization. These include the frontline workers and supervisors from the main and sub-contractors, and the client supervisory personnel. Data collection was performed through the administration of safety climate questionnaire, interviews, observation, and document study. The findings collectively indicate that what had emerged in parallel of the seemingly linear climate-based exploration is the exposition of the organization-systemic nature of the phenomenon. The results indicate the negative impacts of climate perceptions mismatch, insufficient work planning, and risk management, mixed safety leadership, workforce negative attributes, lapsed safety enforcement and resources shortages collectively give rise to the project sub-optimum safety performance. From the dynamic causation and multilevel perspective, the analyses show that the individual, group, and organizational levels issues are interrelated and these interrelationships are linked to negative safety climate. Hence the adoption of both perspectives has enabled a fuller understanding of the phenomenon of safety management that point to the need for an organizational-systemic intervention strategy. The core message points to the fact that intervention at an individual level will only meet with limited success if the risks embedded in the higher levels in group and project organization are not addressed. The findings can be used to guide the effective development of safety infrastructure by linking different levels of systems in a construction project organization.

Keywords : construction safety management, dynamic causation, multilevel analysis, safety climate
Conference Title : ICCMT 2018 : International Conference on Construction Management and Technology
Conference Location : Copenhagen, Denmark
Conference Dates : June 11-12, 2018