Construction safety in Thailand: Statistical records analysis

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Abstract:

Some safety programmers are more effective than others in improving safety performance at the project level. The effectiveness of safety programmers was evaluated by studying 70 construction projects in the Thai construction sector, examining the relationship between their actual status and associated site safety performance. The actual status was assessed by using an evaluation tool developed in compliance with Thai safety legislation and validated by safety experts. Safety performance was assessed by using reactive and proactive measures. Particularly, the accident rate was used as a reactive indicator, while the unsafe act index and the unsafe condition index were used as proactive indicators. The results demonstrated that safety performance was influenced by the nature of implemented safety programmed. First, safety programmed which positively affect accident rates include accident investigations, jobsite inspections, control of subcontractors and safety incentives. Secondly, five programmed, namely jobsite inspections, accident investigations, job hazard analysis, safety committees and safety record keeping, were found to have the most contributions to fewer unsafe acts. And thirdly, accident investigations, jobsite inspections, job hazard analysis, safety inductions and safety auditing were the most effective programmed in reducing unsafe conditions. Manufacturing and service companies increasingly engage in networks to provide their customers with integrated solutions. In order to leverage complementary resources and capabilities fully, the network actors must span traditional boundaries between communities of practice in manufacturing and service. Fields like supply chain management and business process management, as well as the literature on boundary spanning, offer little guidance for the systematic identification of boundary objects that could be used to bridge this gap. Drawing on existing works on boundary objects and service blueprinting, we design a new method for diagnosing boundary-spanning processes and identifying candidates for IT-based boundary objects that integrate manufacturing and service companies' sub processes. The method was iteratively developed over a period of three years in a cyclic action research project with two business-to-business service networks in the mechanical and electrical engineering industries. This research aims to explore the accident causation in Thailand's construction industry. Macro ergonomics and Human Factors Analysis and Classification System (HFACS) were employed to investigate accidents in the construction industry. A total of 1,252 construction accident cases from 31 companies from 2006 to 2014 were analyzed and reported. Findings indicate that accidents occurred more frequently with young and middle ages (25–54 years old) in a large-scale construction company. Based on the reported cases, several major factors were found to predict root causes of accidents, including cuts, falls from height, and awkward working postures. Most construction accidents were associated with unsafe acts (88.97%) and preconditions for unsafe acts (72.92%). It is implied that improvements for changes in human behaviors, together with environmental and personnel factors are critical to increase the safety at the construction site.

The health and safety (H&S) of construction workers has been a subject of much deliberation and justifiably so, since construction workers are invaluable in construction processes. The paper presents findings on an assessment of safety performance of construction workers in the Gauteng province of South Africa.