ABSTRACT

Title: Study of Worker Competency on Heavy Machinery
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Abstract:

This study was conducted to improve employee competency in heavy machinery in Malaysia. The aims is to prepare a platform for a basic knowledge competency module on safety and effective and safe practices of heavy machinery. The study covers redefining the terms of heavy machinery, accidents involving heavy machinery, issues related to registration and projection of current needs of competent workers, and proposing new competency programmes for more effective heavy machinery and the IR 4.0. There are no specific definitions and terms found for heavy machinery in act / standard. Therefore, heavy machinery is classified as Category 1: Lifting Machinery; Category 2: Transport Machinery; Category 3: Loading and Excavating Machineries; and Category 4: Construction and Plantation Machineries. A total of 63 respondents answered the survey conducted. 74.1% of them have experience used forklifts, mobile cranes, excavators, and backhoes during training. 30% of the respondents felt that practicing technical knowledge related to pre-operation, training, certification, and registration was moderate and low despite knowing that these aspects are important. Furthermore, nearly 80% of the respondents agreed on the possibility of an accident or near-miss at work. Respondents also agreed that technical knowledge and training of heavy machinery are important. It is found that more than 50% of fatal accidents involving heavy machinery are due to the negligence of the operator or lack of skills. Meanwhile, forklifts, tractors, and tower cranes accounted for more than 55% of all fatal accident cases. This study successfully developed a competency programme and heavy machinery training module based on the input from industry players, heavy machinery training centres, authorities, and findings from the survey conducted to improve employee competency in heavy machinery, thereby reducing accident rates at work. The training module is called 'Competency for Safe Operation of Heavy Machinery'. The use of heavy machinery simulators in training is strongly encouraged to increase the hours of handling machinery during training to improve the competency of the trainees in operating heavy machinery. Big data sharing among government agencies involved and responsible for occupational safety and health, such as SOCSO, DOSH, NIOSH, and CIDB. It is believed that the training module and suggestions given in this study could improve the competency and skill of operators in heavy machinery and consequently, help Malaysia to reduce the accidents involving heavy machinery.

Keywords: Competency, Heavy Machinery, Training Module