論　文　要　旨
Thesis Abstract

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主論文題名　（Title）

A comparison of construction safety and health management between Japan and Malaysia: Assessment on the safety training methods focus on workforce

内容の要旨　（Abstract）

The construction industry has a strangely high rate of recorded accidents in developed and developing countries with 5%-10% of workforce employment but involves about 30% of all occupational fatal accidents worldwide. Several studies have revealed that most accidents associated with construction undertakings were attributed to a lack of proactive and preventive measures such as workforce training, risk source identification and control, safety awareness and education, inspection and so on. The study explores the similarities and differences focused on the construction safety and health management between developed and developing countries. This is a broad study; therefore, this study is divided into two parts to better present the extent of similarities and differences between Japan and Malaysian in terms of construction safety and health management over the past decades. Firstly, the study discovers the thematic settings of a comparison of safety and health management in the construction industry between Japan and Malaysia. Japan’s safety and health involvement of government and builders is far more comprehensive than in Malaysia, in terms of ordinance, guidelines, education, major and minor safety and health related activities, government resources such as subsidies, and historical updates to monitor the construction safety related issues and provide solutions. The Japanese government has revised the guidelines several times to adapt them to the development of the construction industry and intend to make the guidelines better available for use by the contractors. On the contrary, the guidelines are minimally in line with the international standards, rather than being “tailored” to the culture and development of the Malaysian construction industry. The current use of the Occupational Safety and Health Act does not raise the level of awareness and practicability in Malaysia construction industry where the penalty is way too low whereby the current maximum is not a deterrent which causes the importance of safety to be trivialized or disregarded. Therefore, a strong enforcement by the government is necessary. The findings show that there is significant difference in micro perspective towards safety in construction between both nations. The contractors in Malaysia's construction industry are not too responsive to the programme initiated by the government as the current Malaysian construction industry is restricted by the low-wage and low efficiency due to the extensive dependence on low-

skilled or unskilled foreign workers, the critical barriers to implementing OSH practices on construction sites in Malaysian context were identified as lack of budget allocation for OSH programme, prioritization of production over safety and lack of effective communication. In contrast, the Japanese main contractors are committed to enforcing the regulations relating to site safety and are involved in almost all safety precautions and willing to take voluntary initiatives to improve the safety issues including the safety education for construction foreign workers. The foreign construction workers are less satisfied in terms of their ability in communication skills, low level of safety knowledge and safety awareness regardless of their nationalities due to different cultural and language barriers. Therefore, from the perspectives of government agencies and construction site personnel, the safety training must not be neglected among the foreign construction workers.

Secondly, the study explores a preliminary study on the effectiveness of safety training methods towards construction workers and novices in the building construction industry. An early phase of viewpoint on the effectiveness of verbal and non-verbal safety training materials through the assessment between different levels of education background, nationalities and field experiences of students and foreign workers in Japan and Malaysia were studied. The teaching contents were selected based on the high frequency of high-risk activities on construction sites. The findings discovered the different attitudes between the foreign workers who work in Malaysia and technical trainees who work in Japan. Japanese construction novices showed similar attitudes among themselves toward unsafe actions within the safety training contents. In contrast, the Malaysian construction novices tend to be ambivalent where they might not have sufficient knowledge to recognize the unsafe actions on sites. The technical trainees who work in Japan showed more accurate responses in scenario questions than the Malaysian foreign workers who showed poor safety attitudes to several scenario questions due to different safety cultures, working environment and lack of proper construction safety education. In terms of the effectiveness of the training method, the non-verbalized method provides a stronger impression of the level of danger to the respondents than verbal methods that make interested in what is being explained and transfers the related safety knowledge to the construction foreign workers and construction novices. Verbal materials are useful for native workforces while non-verbal materials will be useful for foreign workforces if there are language problems as there is no difference in understanding between verbal and non-verbal materials for foreign workers. This study could be used as references for the related educators and policy makers of safety education programs to design the teaching methods for high-risk activities so that workers from different backgrounds, with or without field experience, can learn effectively. For recommendation, further customised training content for high-risk activities is necessary to suit the site safety culture in the Malaysian construction industry.

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