

Chapter 50

Knowledge Management Influence on Safety Management Practices: Evidence from Construction Industry

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ABSTRACT

Many studies have been conducted in relation with knowledge management (KM), indicating the benefit associated with KM; among which safety management (SM) improvement is one of them. So, the aim of this article is to assess the influence of KM on SM practices in construction industry. In this regard, various factors that affect KM and SM are identified through literature review. Then, a questionnaire survey was facilitated to collect data based on the identified factors. These factors are ranked using a relative importance index (RII) to ascertain the level of importance among its group. Further, correlation analysis and multiple linear regression analysis are carried out to test and measure the strength of the relationship between KM and SM factors. Results indicate that there exists a definite and significant relationship between the factors of KM and SM in construction industry. Overall, the results obtained from the study will assist practitioners and professionals to develop and upgrade KM and SM practices in construction industry.

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1. INTRODUCTION

Construction industry is a project-based industry where team members of a project work together and this team often disintegrates at project termination (Esmi & Ennals, 2009). Due to this dynamic nature of the industry, learning new concepts happens every day by way of addressing certain issues that lead to project success (Karagoz, 2017). However, these new learnings are not captured and result in “re-inventing the wheel” on occurrence of similar issues in the near future. Recommended good practice is to capture these new learnings at the project termination stage (Grover & Froese, 2016). This can reduce significant amount of time spent on solving problems and thereby increases work efficiency by reusing the existing knowledge which is attained through past experience. Recently, there is an increase in number of construction organizations that perceive knowledge management as an integral aspect of business improvement (Robinson et al., 2005). This process is associated with establishing strategies, identifying the necessary resources and evaluating its benefits. One of the associated benefits is improving health and safety aspects. Increase in knowledge level results in better performance and fewer errors and subsequently enhances organizational health and safety (Shirouyehzad et al., 2017). Indeed, capturing knowledge leads to decrease in the rate of accidents and injuries (Floyde et al., 2013). As a result, organizations can apply this captured knowledge to improve their safety management practice. In fact, knowledge management practice has effect on safety management in organizations (Fargnoli et al., 2011; Shirouyehzad et al., 2017).

Proficient knowledge management is vital from a safety perspective for learning purposes to keep mistakes from happening frequently (Gressgård, 2014). Knowledge management implementation strategies can decrease the rate of accidents and injuries, and thereby improve organization safety (Movahedi et al., 2015). This accident repetition phenomenon can be mitigated by effective implementation of knowledge management strategies in construction organizations (Hallowell, 2011). Clearly, there is an association between managing and sharing knowledge among construction professionals as this is of great significance towards benefiting safety performance in organizations. Therefore, this study aims to understand the relationship between factors of knowledge management and its influence on safety management practices in Indian construction industry. By doing so, the study attempts to underline the importance of these factors in order to promote the level of knowledge management as an effort to improve the level of safety in construction organizations.

A theoretical framework is proposed to understand and evaluate factors affecting knowledge management and safety management practices in construction industry. The framework considers the influence of knowledge management factors (knowledge culture, organizational knowledge, effective and systematic approach towards knowledge management, and knowledge management measures) on safety management factors (organizational context, social environment, and individual characteristics) relevant to construction industry. These factors comprise of measurable elements that influence the proposed relationship. In this regard, research hypothesis has been formulated to test these proposed relationships.

1.1. Research Hypothesis

Research hypothesis is defined as a rationally speculated association between two or more variables which needs to be tested and expressed in the form of simple statements (Sekaran & Bougie, 2016). Influence of knowledge management implementation factors on safety management factors is formulated as hypothesis statements as shown in Figure 1.

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