Safety is an essential issue for organizations to survive, especially for hazardous industries such as the construction industry. The construction industry is considered to be one of the major industries that help in the growth of the economy and the civilization of all countries. Recently, scholars have paid increasing attention to the concept of safety culture due to its role in decreasing the occurrences of accidents and injuries. Safety culture has become the focus of all industries and has received a lot of attention in recent years, especially in the construction industry. Absence of safety culture is a major cause of injuries and accidents in the construction field.

In the construction industry, personnel's perception of safety culture is vital to prevent accidents or behavior misconduct. Also, focusing on personnel's safety culture on construction sites provides an opportunity to decrease risks and unsafe behaviors to improve the overall safety level. Workers' performance and behaviors are shaped by their awareness and view of safety culture inside their work environment. Generally, safety performance in the construction field is still unsatisfactory based on reporting records.

The present study observed the influence of safety culture on construction's personnel's safety performance on large governmental construction projects in Saudi Arabia. Construction personnel's safety performance was measured by their attitude toward violations and error behaviors. This research also examined the role of personnel's motivation toward construction safety as a mediating variable between construction safety culture and safety performance constructs including error and violation behaviors.

The research adopted a quantitative method by using a questionnaire for the purpose of data collection and analysis. A total of 434 questionnaires were collected from construction personnel including project managers, engineers, and supervisors through their voluntary participation in this study. Statistical analysis was used to analyze the data collected including descriptive statistics, confirmatory factor analysis (CFA) and structural equation modeling (SEM) techniques. Confirmatory factor analysis is used for validating each factor with its measurable items. Finally, this study applied the concept of structural equation modeling (SEM) to evaluate the correlation between all latent variables in the study's conceptualized model.

The study's outcomes show that safety culture has a direct influence on construction personnel's attitudes toward violations and an indirect effect on construction personnel's errors behavior. Furthermore, safety culture has a significant effect on improving safety motivation for construction safety. Safety motivation for construction safety has a direct effect on errors behaviors. Conversely, safety motivation does not have a mediating effect on construction personnel's attitudes toward violations. Therefore, safety motivation's mediating role was significant only between safety culture and errors behaviors.

This research added to the existing research knowledge about the important part of safety culture as a key interpreter of safety performance in construction field. The current study contributes to psychological safety through examining the influence of safety culture as the interpreter for enhancing safety motivation for construction safety. Also, this research evaluated safety culture's influence on construction personnel's attitudes toward violations and construction personnel's error behavior. The outcomes of the study are useful and recommended to be used by construction management to better pinpoint the reasons for unsafe behaviors in the construction field. The results of this research highlights management's role in determining and affecting workers' attitudes and behaviors.

Major: Industrial Engineering
Educational Career:
Bachelor's of Industrial Engineering, BS, 2010, King Abdulaziz University
Master's of Industrial Engineering, MS, 2014, University of South Florida

Committee in Charge:
Waldemar Karwowski, Chair, Industrial Engineering and Management Systems Department
Peter Hancock , Industrial Engineering and Management Systems Department
Ahmad Elshennawy, Industrial Engineering and Management Systems Department
Piotr Mikusinski, Department of Mathematics

Approved for distribution by Waldemar Karwowski, Committee Chair, on September 20, 2016.

The public is welcome to attend.