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For the degree of: Doctor of Philosophy  
Department: Civil and Construction Engineering  
Ph.D. in Engineering and Applied Sciences  

Title: Managing Workforce Diversity in Construction to Improve Communication and Reduce Fatalities: Hispanic Workforce Focus  

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The Hispanic workforce continues to be a fast-growing segment of the U.S. workforce. In the last eleven years (2003-2014), the U.S. Bureau of Labor Statistics (BLS) data showed that this growth amounted to 34.5% in the construction industry alone. In 2015, the Hispanic workforce represented 28.5% of the total workforce in the construction industry and was the only ethnic group that had increased during this period.  

The Hispanic workforce is facing a higher rate of fatalities than any other ethnic group in the construction industry. Occupational Safety and Health Administration (OSHA) and construction safety practitioners have long focused on language barrier as a root cause for these fatalities and have
been recommending the translation of the training materials into Spanish and promoting the hiring of bilingual supervisors. However, these recommendations seem to have not fully addressed the higher rates of injuries and fatalities associated with the Hispanic workforce. This study presents the findings of an investigation of cultural differences that goes beyond the focus on the language barrier. While the language barrier is an important factor, the other characteristics are even more significant in responding to the safety challenges discussed in this dissertation.

The work in this dissertation addresses the management of cultural diversity at U.S. construction sites to improve safety with special attention to Hispanic workers. The study solicited safety and behavioral perspectives of construction supervisors as well as Hispanic and non-Hispanic workers to develop an understanding of the cultural differences that might have contributed to the high fatality among Hispanic workers. A framework for improving the safety conditions on U.S. construction sites has been developed to create a novel approach to training that goes beyond the 10-hour and 30-hour OSHA modules as well as current recommendations regarding Hispanic workforce. Three national surveys as well as several focus group studies have been conducted to understand the influence and nature of active cultural differences, as these are the differences that directly affect construction site safety, quality, and time of completion.

Based on the results of this novel, empirical study, a deep understanding of the nature of active cultural differences has been achieved. The results suggest the existence of three active cultural differences on construction sites: high power distance, collectivism, and uncertainty avoidance. This new understanding of the nature and influence of active cultural differences will improve the overall site safety and can contribute to the reduction of the higher rates of injuries and fatalities among Hispanic workers by developing enhanced training programs that address diversity in the workforce and by creating better work conditions for all parties involved. Finally, the framework developed in this dissertation will guide future studies as more research efforts become focused on the diversity in the construction workforce.