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Integrative framework for sustainable development of the cost estimating profession

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Perhaps the greatest challenge facing the cost-estimating community over the next decade is the loss of knowledge and experience of highly experienced estimators due to the high percentage of them retiring paired with the evident shortage of qualified cost estimators. This study aims to develop an integrative learning framework for the estimating profession that will help companies adapt healthier environment and management practices to retain experienced estimators' competencies. This multi-dimensional framework considers the effect of the learning environment and motivation (intrinsic and extrinsic) practices on retaining and developing the estimating competencies. First, 23 core estimating competencies are identified and classified into skills, knowledge, and personal attributes and also quantified the degree of which new estimators lack each competency. Using factor analysis and criticality matrix, the gaps between the ideal and actual level of competency are assessed and seven core estimating competency factors representing the core estimating competencies are developed. The second phase assess the effectiveness of ten traditional and advanced capture and transfer methods in retaining the core estimating competency factors. Also, the current level of development of the learning environment, and intrinsic and extrinsic motivations practices and their effects on the improvement of estimators' capabilities are assessed. The Structural Equation Modeling (SEM) method is employed. As a result, the integrative model for the cost estimating profession is developed showing the effective methods to retain the estimating competency factors. This study can help companies assess their estimators' capabilities and design appropriate training programs for their estimators based on their specific needs, and improve companies' practices in retaining estimators competencies.

Biography

Anwar Alroomi has completed her PhD degree in Civil and Environmental Engineering from Oklahoma State University in 2013. She is an Assistant Professor and the Construction Management Program Coordinator at California State University, Northridge (CSUN). Her research focuses on cost estimating; not just the profession of cost estimating but the behavior and skills that are required of a proficient cost estimator. In addition, her research focuses on developing cost models to estimate the construction costs for marine outfalls. She also serves in the Department of Civil Engineering and Construction Management and Aims Faculty Mentor at the College of Engineering and Sciences at CSUN.

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