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Faculty of Engineering
Department of Structural Engineering

Agile Project Management in Enhancing the Construction Industry in Egypt

**A Thesis submitted in partial fulfillment of the requirements
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ABSTRACT

While agile techniques are so important and also widely used to managing various types of modern projects, the current way of managing projects itself is not a perfect process. Agile engineering methods have recently emerged as a new and different way of developing projects as compared to the traditional methodologies. However, their success has mostly been anecdotal, and research in this subject is still scant in the academic circles. This research was a survey study on analytical comparison between agile and traditional projects then trying to identify the critical success factors of Agile construction projects, that contributes enhancing construction industry in Egypt, using quantitative approach. Based on existing literature, a preliminary list of potential critical success factors of Agile projects was identified and compiled. Subsequently, reliability and correlation analysis were conducted to consolidate this preliminary list into a final set of 26 possible success factors for each of the four project success categories Quality, Scope, Time, and Cost. A survey was conducted among Agile professionals, gathering survey data from 115 projects from different regions throughout Egypt. For analytical comparison between the two methods IBM SPSS22 software was used to determinate the mean, standard deviation, relative importance and T-test for factor's significance. And for ranking critical factors analytic hagiarchy process (AHP) techniques was used, along with the vital few model. The results revealed that only 11 out of 26 hypotheses were supported, identifying five critical success factors for Agile projects success: (a)Iterative style project management process, (b)Suitable delivery strategy, (c)Customer involvement, (d)High competence and expertise's teams, (e)Flexible organizational environment. Limitations of the study are discussed together with interpretations for practitioners. To ensure success of construction agile projects, managers are urged to focus on choosing high-caliber team, flexible organizational environment, practicing Agile iterative techniques with periodic customer involvement and following Agile-style delivery strategy.

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