

Costs and Benefits of Efficiency Measurement for the AEC Industry

E. AlChaer,¹ and C. Issa, Ph.D., P.E, F. SEI, F. ASCE²

¹Lebanese American University; University of California, Berkeley, Department of Civil Engineering; e-mail: elie.alchaer@gmail.com

²Professor, Department of Civil Engineering, Lebanese American University, Byblos, Lebanon; e-mail: cissa@lau.edu.lb

ABSTRACT

Several studies have been conducted on various methodologies and techniques to improve construction labor production but where studies have been lacking is investigating how to measure and improve the efficiency of project managers. It is not uncommon to have major project delays due to unforeseen conditions; how would one objectively compute a productivity factor for that project management team? Too many uncertainties exist in construction to directly link the efficiency of a team with overall project performance. Such issues led to the development of this new methodology which offers a different perspective to productivity measurement in the Architecture, Engineering and Construction (AEC) industry.

Productivity is how well the project tasks are realized and prioritized while incorporating the factors as given with the data presented at the project planning stage. Whereas, in this study considered was the tangible outputs that construction delivers, applied weighted priority values, and factored back to measure a value of efficiency for the project managers, architects, quantity surveyors, and others involved in the construction process. Two numerical equations were derived through which a methodology that could theoretically be applied to any construction project regardless of location.

Previous trials of the productivity method were conducted in controlled environments. In this study, the methodology is being explored to adopt productivity measurement at the company level, not just for individual projects. Advancements in the application of project controls need to be realized to allow for this adjustment. Delineated would be the benefits of having efficiency data available to employees and employers alike rendering the cost of adjusting the methodology to project management. Thus, in summary, proposed is a methodology for adopting a different perspective in the AEC industry, examining the data of how well the execution of the work is conducted and exactly where there is need for improvements.