ICCEPM 2022
The 9th International Conference on Construction Engineering and Project Management
Jun. 20-23, 2022, Las Vegas, NV, USA

Assessing Critical Quality Metrics for Successful Baseline Construction Scheduling

John Bivans[1], Jin Ouk Choi[2]*

[1] *University of Nevada, Las Vegas, 4505 S. Maryland Pkwy. Las Vegas, NV 89154, USA,* E-mail address: bivansj@unlv.nevada.edu
[2] *University of Nevada, Las Vegas, 4505 S. Maryland Pkwy. Las Vegas, NV 89154, USA,* E-mail address: jinouk.choi@unlv.edu

2. Abstract

In the current construction industry, difficulty arises in creating an adequate baseline schedule to establish a fundamental plan for construction. This presentation will present the research findings which investigated industry-recognized schedule metrics that aid in the successful implementation of said schedule. Industry organizations (Association for the Advancement of Cost Engineering, the Government Accountability Office, the Project Management Institute, and local city, state, and county government offices) provide standardized guidelines with specific metrics requirements to ensure successful implementation. However, most of those metrics are substantiated or validated in their effectiveness. The study examined the impact between these industry-recognized critical metrics and three distinct scheduling characteristics: Project Type, Project Duration, and Project Density (number of activities within a schedule). The research results showed that, among the 12 various schedules evaluated in parallel with 20 industry-recognized critical metrics, seven metrics substantially demonstrate a significant impact on a project schedule's success. Furthermore, six of the seven metrics directly correlate to at least one of the three scheduling characteristics outlined. As a result, this research has established more predictable outcomes based on impacts between three distinct project characteristics and 20 of the most discussed/researched critical scheduling metrics in the field. This allows management teams to have more confidence in establishing critical milestones and accurate turnover dates from the start of the project through its final completion.