FLOW VARIABILITY AND LABOR PRODUCTIVITY LOSS FOR
CONSTRUCTION PROJECTS

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March 8, 2007
Kap, 203
2:30-4:00pm

Abstract

Lost labor productivity loss is one of the primary contributors to the cost and schedule overruns that affect many construction projects. Quantifying lost labor productivity on construction projects is difficult and sometimes subjective. A widely accepted way to quantify losses is the measured mile approach. In this research the measured mile and a variant, the baseline method, are analyzed and compared to a new, proposed statistical clustering method. The research explored applying a statistical clustering method in the measured mile and baseline calculation to inject objectivity in the analysis. The test on real data showed that the clustering method is more objective and therefore more convincing to both owners and contractors. The research also explored the relationship between flow variation and labor productivity. Identifying and quantifying the benefit of improving flow reliability can provide guidance for project managers to focus on the root causes of productivity loss in the planning stage. The research findings can also help consultants locate the causes and quantify responsibility of productivity loss in claims. Computer simulation and case study approaches were used to explore the correlation between flow variation and labor productivity.