

# **RATIONAL COMMITMENT MODEL: IMPROVING PLANNING RELIABILITY AND PROJECT PERFORMANCE**

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## **ABSTRACT**

Reliability of planning commitments at operational level is one of the key factors to improve project performance. The Last Planner System (LPS<sup>TM</sup>) is a tool designed to improve planning reliability in construction industry, however, the improvements in planning reliability are often limited due to the fact that the decision-making processes in construction, including those related to planning commitments, are mainly based on experience and intuition. The Rational Commitment Model (RCM) presented in this paper is a tool that helps to overcome this situation by introducing decision-making aids based on analysis of field data, which allows developing more reliable planning commitments using statistical models. RCM allows forecasting planning commitments for short term-periods using field production data such as labor available, buffer size, and planned progress. Several case studies have demonstrated the RCM forecasting capabilities and its practical use to improve reliability of planning commitments and project performance. The RCM also contributes to solve the well-known workload-capacity problem and provides useful insight into lean production performance issues.

## **KEY WORDS**

Lean Production, Rational Commitment Model, Planning Reliability, Statistical Models.

## **INTRODUCTION**

How planning decisions are made to manage variability in construction projects is one of the most relevant issues in construction (Laufer et al, 1994). Variability is a well-known problem in construction on which there is much ongoing research (Ballard, 1993; Alarcón and Ashley, 1999; Tommelein et al, 1999; among others). Several authors have recognized that traditional project management does not consider the non-linear and dynamic nature of projects (Bertelsen, 2003; McGray et al, 2002). In construction, this

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