

# EVALUATION OF THE IMPACT OF THE LAST PLANNER SYSTEM ON THE PERFORMANCE OF CONSTRUCTION PROJECTS

Carlos T. Formoso<sup>1</sup> and Camile B. Moura<sup>2</sup>

## ABSTRACT

The Last Planner System of Production Control has been used in many different countries since the mid Nineties. However, most research studies developed so far have emphasized the analysis of qualitative data, based on a small number of case studies. Very few quantitative analyses have been undertaken on the impact of its implementation and on the factors that affect its effectiveness. Based on the construction of a large project database, this article presents the main results of an investigation that aimed to assess the impact of LPS based production planning and control systems on the performance of construction projects in terms of cost and time. This investigation has also analyzed the impact of a set of production management practices on the effectiveness of those planning systems. The database contains the following indicators: PPC, cost deviation, time deviation, and site management best practices index. Several analyses were carried out using regression analysis techniques. As main conclusions, the study provided some evidences on the way production planning and control influences project performance, and the importance of site management best practices on the effectiveness of planning and control. Despite the fact that some of the analyses indicated a fairly low correlation index, due to some limitations on the data available, the regression models produced were very consistent.

## KEY WORDS

Last planner, planning and control, production management, project performance.

## INTRODUCTION

In IGLC annual conferences, many papers have reported the use of Last Planner system (Ballard, 2000), indicating that this system have been successfully implemented in a large number of projects from different countries, such as USA, Brazil, Chile, Ecuador, England, Finland, Denmark, among others. This system is able to increase the reliability of short term planning by shielding planned work from upstream variation, and by seeking conscious and reliable commitment of labour resources by the leaders of the work teams involved (Ballard and Howell 1998). At

---

<sup>1</sup> Ph.D., Associate Professor at NORIE/UFRGS (Building Innovation Research Unit, Federal University of Rio Grande do Sul). Av. Osvaldo Aranha, 99, 3º andar. Porto Alegre, RS, Brasil. CEP 90040-020. Fax: 55-51-3316-4054. E-mail: [formoso@ufrgs.br](mailto:formoso@ufrgs.br)

<sup>2</sup> Civil Engineer, M.Sc., Researcher at NORIE/UFRGS. Av. Osvaldo Aranha, 99, 3º andar, Porto Alegre, RS, Brasil. CEP 90040-020. E-mail: [camile.moura@gmail.com](mailto:camile.moura@gmail.com)