



A Systematic Review of Prerequisites for Constructability Implementation in Infrastructure Projects

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Abstract

Success in infrastructure projects requires success in all phases of the project, including design, construction, and operation. One of the necessary actions for developing countries to construct their economic infrastructures, is implementing infrastructure plans. This industry should focus more on the construction process and utilizing creative tools and new concepts for construction development. The reason of it is because of delivering the project with certain quality, in time and with the given budget. Contractors should have new strategies for construction to optimize project completion, and constructability. Accordingly, constructability improvements have become the concern of construction industry practitioners. Considering constructability issues in the early stages of the project enhances identifying design limitations that prevent capabilities of contractors to take part in planning and improving project performance. The purpose of this study is identifying the prerequisites of constructability to resolve the current problems of projects, including inappropriate plans without implementability, poor decision making in design, and lack of sufficient implementation experience in the design engineering team. This study provides a list of prerequisites for constructability implementation in infrastructure projects. Accordingly, it identifies the prerequisites, using Systematic Literature Review (SLR) technique. The NVivo software is used to facilitate the qualitative analyses.

Keywords: Constructability Prerequisites; Systematic Literature Review (SLR); Infrastructure Projects.

1. Introduction

The construction industry is faced with serious crises, including ineffectiveness, lack of appropriate productivity, and excessive use of energy and raw material all over the world. Nowadays, developing countries, for their economic growth, should pay more attention than ever to infrastructure projects [1]. Such that infrastructure projects are at the centre of their economic activities and the demand for implementing such projects is increasing. So all over the world, governments are providing comprehensive development of their countries, and seeking for more investments for such projects [2].

Constructability is one of the techniques that connect the implementation and construction phases to the design and planning phases. By reducing additional processes and preventing duplications, constructability has reduced final costs of projects and their delivery time. The results obtained from the previous studies indicate that improved constructability leads to simultaneous saving of cost and time and also significant improvement of quality and safety, which are key factors for successful delivery of construction projects. Therefore, the significance of constructability is evident in these projects [3].

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