



Integrated Project Delivery Implementation Challenges in the Construction Industry

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Abstract

Huge financial resources are spent in the construction industry all over the world, which are frequently wasted largely due to a lack of proper planning. In recent decades, in an attempt to overcome challenges, various contractual and administrative systems have been used by construction owners/clients. One such system has been Integrated Project Delivery (IPD). Its implementation has, however, experienced drawbacks. Identifying such drawbacks is an initial step in attempting to resolve them, and this paper aims to identify and prioritize the IPD implementation drawbacks in the context of the Iranian construction industry. A comprehensive list of IPD implementation drawbacks is prepared using a questionnaire survey. An in-depth literature review of the IPD concept has been combined with a review of various case studies applying the IPD system. The results were analyzed using the Robust Exploratory Factor Analysis (EFA) method. 22 drawbacks in the Construction Industry were categorized under four themes; contractual, environmental, managerial, and technical. Results show that contractual drawbacks are the most significant. The implication of this research is that identifying and classifying IPD implementation drawbacks provides a useful reference to managers and owners of the construction industry, for identifying and codifying solutions to overcome them.

Keywords: Integrated Project Delivery (IPD); Challenges; Project Key Stakeholders; Construction; Robust Exploratory Factor Analysis (EFA).

1. Introduction

Demand for construction has been high, however, due to unsophisticated communications among its practitioners, it has been found to have very low efficiency [1]. The industry's owners should have a common language, to resolve management and communication problems, and to reduce inefficiency and confusion [2]. The construction industry has a great impact on the global economy and other industries; however, in the product delivery sector, information technology, and design, it suffers some challenges [3]. Given the huge volume of this industry, its changes have been so limited; so it has a low productivity. In this industry, billions of dollars are spent for project delays, duplication of work, changes, loss of materials, etc. [4]. In the United States, almost \$1 billion is spent on construction per year, and about 30% of this amount is wasted [5]. What is so significant in this regard, is financial success of the construction projects; however, the self-centered behavior of stakeholders under the traditional systems results in not achieving the desired outcomes [6, 7]. On the other hand, funds of large projects are limited; therefore, the industry's owners attempt to attract

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