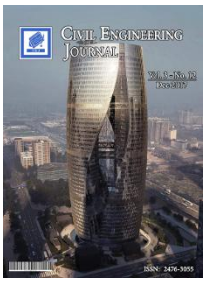
Available online at www.CivileJournal.org

Civil Engineering Journal

Vol. 3, No. 12, December, 2017



Testing a Measurement Model of BIM Potential Benefits in Iraqi Construction Projects

Wadhah Amer Hatem [a], Abbas Mahde Abd [b], Nagham Nawwar Abbas [c*]

[a] *Assist. Prof. in Middle Technical University, Baquba Technical Institute, Baquba, Iraq.*

[b] *Assist. Prof. in University of Diyala, College of Engineering, Department of Architecture, Baquba, Iraq.*

[c] *MSc Candidate in University of Diyala, College of Engineering, Department of Civil Engineering, Baquba, Iraq.*

Received 01 November 2017; Accepted 23 December 2017

Abstract

Building Information Modeling (BIM) is an integrated and comprehensive system for all that related to the construction project, which includes a set of effective policies, procedures, and computer applications that increase the performance of the project during its life cycle. The objective of this research develops a clear concept about the BIM adoption in Iraq through investigating potential benefits that can be obtained through its application in construction projects also build a measurement model for these benefits. The research methodology was based on quantitative approach which adopted by conducting a questionnaire directed to professionals in the field of construction projects in the public and private sectors supported by personal interviews with respondents either individually or in groups. Three hundred copies of the forms were distributed to the companies, firms and engineering departments of the various ministries of the state. After the data was obtained, two software (SPSS and SmartPLS) was used for analyzing the data and constructing the measurement model. The results showed of all the benefits constructed within three key components. The first is knowledge support for management in term of (costs, data, processes), the second is effective design performance and the third is effective construction performance and all these components were modeled as a measurement model.

Keywords: BIM; Benefits; SmartPLS; CFA Analysis; EFA Analysis.

1. Introduction

The construction industry has witnessed a paradigm shift that will achieve the highest productivity, efficiency, quality, sustainability, and the value of infrastructure and reduce the costs of the life cycle as well reduce time [1]. This is consistent with what Azhar [2] said says about construction industry tends to adopt techniques that reduce the cost of the project, increase the productivity and quality of the project and reduce the project time.

One of these techniques is building information modeling (BIM) which is a technological and procedural shift in the construction industry [3]. Actually, the evolution of computer science as well as information technology has caused a positive change in the processes of most industries [4].

BIM is an advanced process and tool consisting of a combination of virtual aspects, systems and concepts facilitated within a unified environment [5]. It includes the application and keeps of integrated digital representation of different information across different project stages [6] .There are many BIM applications[7] which can be used to support

* Corresponding author: nagham.nawwar@gmail.com

http://dx.doi.org/10.28991/cej-030963