AIN SHAMS UNIVERSITY

FACULTY OF ENGINEERING

Structural Engineering

A Model for Evaluation of Delays in Construction Projects

A Thesis submitted in partial fulfillment of the requirements of the degree of

Master of Science in Civil Engineering

(Structural Engineering)

Submitted by

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B.Sc. in Civil Engineering

Faculty of Engineering, Ain-Shams University, 2011

(Public Works)

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Statement

This thesis is submitted in partial fulfilment of degree of Master of Science in Civil Engineering (Structural), Faculty of Engineering, Ain shams University.

The author carried out the work included in this thesis, and no part of it has been submitted for a degree or a qualification at any other scientific entity.

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Abstract

The Construction industry in Egypt is an indicator of the development. It creates funding opportunities across various related sectors. Delays have negative effects on construction industry. Thus, the delay in construction industry may lead to delay of the desired economic development. This study aims to identify the major causes of delays. Delays mainly caused by owner, consultant, or contractor. It may be excusable or non-excusable delays. The study depends on a questionnaire survey list for determining the probability and the severity for the main causes of delay in construction projects. The questionnaire consists of total 63 factors distributed in ten groups. The groups selected based on literature review and the modification of experts. These ten groups have been consisted of 63 factors.

From survey there is a strong relationship between the point of view of consultant and contractor. The correlation coefficient between consultant and contractor was (0.61).

Also it's found a strong relationship between the point of view of owner and consultant. The correlation coefficient between owner and consultant was (0.57).

In other hand, it's found a good relationship between the point of view of owner and contractor. The correlation coefficient between owner and contractor was (0.45).

In this study, the researcher found that top five important factors that effect on delays are (1) Delay in progress payments by owner. (2) Poor site management and supervision by contractor. (3) Lack in qualified labors. (4) Difficulties in financing project by contractor. (5) Ineffective planning and scheduling of project by contractor.

A model was designed to allow users getting the most important factors easily according to its importance index (IMP.I). As the importance index (IMP.I) formula depends on probability index and severity index the user can choose an appropriate probability

according to his survey or his own opinion, while the severity index is a stored value in the program and then ranking all causes according to their importance index. The model was designed by using a programming language for building applications and software components called C#.net.

Key words: Construction industry, causes of delay, questionnaire survey.

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