

CHAPTER ONE

INTRODUCTION

1- 1: Problem Statement:

Nowadays, the construction market has become a global market which has different customers and many competitors. In these changeable conditions, the Egyptian construction industry has faced high challenges to have a place in that market and keep it in a high position. So, the construction firms should strive to find this place and keep and develop it.

Hence, the organizations always search for techniques and tools to develop and improve their performance. Measuring performance is one of these techniques, where it will be easy to manage their goals, processes, systems, and outcomes effectively. So, the performance measurement is considered as a competitive advantage.

Because of these challenges, there is a pressing need for this research as follows:

- To improve performance and upgrade construction practice.
- It is noticed that the companies develop themselves in a slowly and random way. So, it is necessary to ensure that the performance measurement is an essential process and should be done with correct and accurate method through a planned strategy.
- To identify the obstacles that may face the companies during the measurement performance, to be able to solve these obstacles.
- To indicate the impact of the application of management systems on measuring performance.
- To adopting and implementing a model for performance measurement which is proper for the Egyptian construction industry.

1- 2: Study Objectives:

The study seeks to achieve the following:

1. Identifying the most common key performance indicators which can be applied in the Egyptian construction industry.
2. Reviewing the approaches and models of performance measurement.
3. Pointing out the application level of the quality management systems in the Egyptian construction firms, and identifying the effect of applying such systems on developing performance.
4. Reviewing the basic principles of the Total Quality Management (TQM) to develop and implement performance measurement systems, where having an effective performance measurement system is a major requirement in the ISO9001: 2000 standard and also in several quality awards.
5. Developing a model of performance measurement for the Egyptian construction companies. This model considers the Egyptian construction culture and the national approaches for measuring performance such as Benchmarking, Quality awards and Six sigma .

1- 3: Study Methodology:

The research has been conducted through two stages as follows:

First stage: Theoretical study (Chapters 2 and 3).

The steps of this stage can be seen as follows:

1. Demonstrating in brief the most applicable Quality management systems.
2. Discussing the necessity of measuring performance and how to plan for performance measurement.
3. Discussing the basic concepts of performance measurement through illustrating its objectives and the elements to be measured with demonstrating their criteria and characteristics to help selecting the needed measures.
4. Reviewing the literature review of the approaches of performance measurement .these studies were discussed to come out with the

common key performance indicators which will be a part of the suggested model.

5. Demonstrating the common models and approaches of performance measurement :

1. *World Class Quality Awards*:
 - (Deming Prize (DP).
 - Malcolm Baldrige National Quality Awards(MBNQA)
 - European Quality Award (EQA).
2. *Benchmarking*
3. *Six sigma*.

With clarifying their importance, their main stages and the critical factors in their successful implementation

Second stage: Field work (Chapters 4,5 and 7).

This stage includes the practical part of the study that concern with collecting the data from a wide variety of the construction firms to diagnose the current practice. These steps will be carried out through the following:

1. Investigating the current situation:

This will be accomplished through a field survey based on a questionnaire oriented to a representative sample including different kinds of public and private construction firms to obtain a clear and comprehensive understanding of the current situation in Egyptian construction organizations by exploring the actual application of quality management systems and performance measures in Egyptian construction firms and searching for the deficiencies and weak points to identify the areas for improvement.

2. Filling the questionnaire by the representative sample, that will be carried out through interviewing the executive managers of these enterprises; which mostly need more than visit , in addition to sending these questionnaires by E-mails which followed by calls for assurance.

3. Analyzing the collected data by using statistical techniques.

4. Analyzing the responses from the previous questionnaire to come out with the following conclusions which will build the structure of the developing model for measuring performance in Egyptian construction organizations:

- The relation between the application of quality management systems and the plans for improvement through measuring performance.
- The common management systems that are applied in construction organizations, and the ways of performance measurement which are followed in these companies as well.
- The essential elements needed for developing measurement system for an organization.
- The reasons of application or non-application for measuring performance in the construction organizations in Egypt.
- The barriers and benefits of measuring performance.
- Reliability analysis for results concerned with the suggested elements and their related indicators.

5. Developing the proposed model of measuring performance.

6. Validating the model to examine the practicality and applicability of the developed model by a manual of questionnaire that designed to fit that purpose of validation through exploring the experts' opinions.

1- 4: Thesis outline:

This study is concerned with measuring performance in construction companies that apply quality management systems.

First chapter clarifies the need for the research and its objectives; it is also illustrate the methodology which will be followed to achieve these goals.

Second chapter defines the important terminologies concerned with quality management systems and performance measurement. The necessity and the plan of performance measurement are explained and clarified with emphasis on the basic concepts for performance measures. In addition it introduces some literature reviews that discuss performance measurement.

The common models and approaches are applied in performance measurement are stated and clarified in third chapter through exploring the common quality awards, benchmarking and six sigma. The criteria of these models and approaches are demonstrated besides the managing process, the main stages and the critical factors in their successful implementation.

The first three chapters illustrate why it is necessary to measure the performance and why the organizations have to measure their performance if they want to manage their goals, processes, systems, and outcomes effectively.

Fourth chapter explains the study methodology to investigate the main criteria, through the suggested questionnaire ,where it presents the stages of questionnaire design and its structure .

chapter five presents the data analysis for the collected data from chapter four. Where it defined the current practice for performance measurement in the Egyptian construction firms. And point out the barriers and benefits of measuring performance. Data analysis and results interpretation are presented.

Chapter six uses the results from chapter four with the conclusion from chapter two and three to develop the suggested model for measuring performance in Egyptian construction firms considering the main criteria and the essential measurement that should be included in these measures.

Chapter seven examines the applicability and practicality of the developed model in chapter five to see how the proposed model is applicable and effective for the Egyptian construction companies.

The last chapter presents the conclusion and recommendations.