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Identifying the latest risk probabilities affecting construction projects in Egypt according to political and economic variables. From January 2011 to January 2013

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Abstract The aim of this paper is to identify the latest top major risk probabilities in construction projects in Egypt according to political and economic variables between the time period Jan 2011 and Jan 2013. Risks were prioritized according to their significance of influences and their sources, whether internal or external. The paper describes, on the basis of a questionnaire survey of project management practices, the construction risks, which are generally perceived as events that influence project objectives of cost, time and quality. A statistical analysis was carried out in order to identify the top major construction project risks. It is concluded that however risk factors vary considerably across industry and countries, the study of risk management for construction projects will provide a reference for other projects that might be executed in similar circumstances. The paper ends up with suggesting the risk response strategies appropriate for each type of identified risk. The research findings will contribute to both practice and research in risk management for the Egyptian construction industry and will also provide valuable information for international companies which intend to provide construction projects in Egypt.

Introduction

Great efforts are needed to identify and manage the top major risks resulting from the emerging political and economic variables from January 2011 to January 2013 in the Egyptian construction industry. In this critical period, the construction activities in Egypt were exposed to many risks which were partly neglected and needed proper management.

This paper firstly presents a literature review on risks, risk management and the types of risks that normally accompany

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construction projects. The paper then discusses the current practice of risk management in Egypt. The nature of Risks in this period drastically changed due to the emergence of some political and economic variables. The findings of this paper will contribute to both the practice and research aspects of risk management for the Egyptian construction industry and will provide valuable information for international companies which intend to provide construction projects in Egypt.

Defining risk

Risk management is essential to construction activities in minimizing losses and enhancing profitability. In general, the construction industry is widely associated with a high degree of risk due to the nature of construction business activities, processes, environment and organization. Construction projects entail long period, complicated processes, financial intensity and dynamic organization structures [1]. This type of risk has gained vast attention from construction project managers because of both time and cost overruns that are almost part of any construction project [2].

There were many different attempts to define risk, among which was that risk is ''the potential for unwanted or negative consequences of an event or activity'' [3].

Risk can also be generally recognized among those within the construction industry as the phenomenon of continually facing a variety of situations involving many unknown, unexpected, frequently undesirable and often unpredictable factors [4]. But the latter definition of risk tends to ignore its double-edged nature, which was recognized in defining risk as ''the chance of something happening that will have an impact on objectives; may have a positive or negative impact'' [5].

This paper aims at identifying the top major risks regardless of their nature of impact, whether positive or negative, through considering the probability of their occurrence and their impact or magnitude of consequence.

Sources of risk in construction projects

Sources of risk influence projects' performance in terms of time, cost and quality in negative or positive ways. These sources are classified according to their nature into physical, environmental, design, logistics, financial, legal, political, construction and operation risks [2]. They are also classified into internal and external risks. Internal risks include financial, design, contractual, construction, personal and operational risks, whereas external risks include economic, social, political, legal, public, logistical and environmental risks [6].

Management of risk

Risk management in the context of construction projects is a systematic way of identifying, analyzing and dealing with risks associated with a project with the aim of achieving the project objectives [7]. Although risks cannot be excluded, they can be effectively managed. The PMBOK described management of risk as 'the processes concerned with conducting risk management planning, identification, analysis, responses and monitoring and control on a project' [12].

Risk management starts with an early and effective identification and assessment of risks [1]. The process focuses on defining the objective of the project (what is to be achieved) and making sure about the procedures needed to achieve success [7]. The process of management of risks also includes risk response strategies that are defined as risk retention, risk transfer, risk reduction and risk avoidance [8].

Classification of risk

Risk classification is an integrative part of risk identification; its main objective is to structure the diverse risks affecting a construction project [7]. Risk passed through many serious tries to classify its sources as a step to help project managers to predict risks. Although many ways can be used to classify the risks associated with construction projects, the reasoning for choosing a method must serve the purpose of the research. In this paper, risks are grouped with reference to the project management institute (PMI), which classified risks into external and internal, in order to study risks according to the political and economic variables.

Though internal risks may be under control of the project manager, they cause uncertainty that may affect the project. They includes technical risks (government regulations, natural hazards, labor stoppage, cash flow problems, safety issues and natural catastrophes), nontechnical risks (changes in technology, changes in state of the art, design issues and operations/maintenance issues) and legal risks (licenses, patent rights, lawsuit, subcontractors' performance and contractual failure). External risks are out of the project manager's control, but may affect the direction of the project; these risks include costs, borrowing rates and raw material availability [12].

Current practice of risk management techniques in Egypt

The construction industry in Egypt is one of the main supports of Egyptian economy. The rapid growth of the Egyptian Construction Projects together with the unrest of the Egyptian society due to political and economic variables in the period that followed the 25th January Revolution calls for massive development in risk management techniques. These variables bring opportunities to researchers in the field of project management to develop effective risk management techniques to cope with risks associated with construction activities and to implement the projects in accordance with project objectives including time, cost, quality and safety.

Another factor that adds additional risks to construction projects in Egypt is the participation of foreign partners with the local stakeholders. This imposes risks such as differences in practices between domestic and foreign partners, policy and financial risks and legal and political risks. In addition to those risks, the inflation rate in Egypt is quite high: 10.2% (2011 EST.) [9], while the national currency is relatively weak, as in Feb. 2013 the USD reached 6.73 Egyptian pounds [10]. The above mentioned factors emphasize the vitality of monitoring and controlling the efficiency of risk management practices in construction projects in Egypt.

The political and economic variables in the discussed period in Egypt have been accompanied by a group of key risks, like the workers' strikes, lack of fuel, unsecured roads between cities, changes that took place on the level of governmental officials, in addition to fire risks and major changes in currency prices. These risks that have lately become obvious and