

Risk Management Framework for Mega Bridge Project in Kuwait

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1 Abstract

The purpose of this article is to identify and assess the degree of impact and likelihood of occurrence of the risk factors on construction mega bridge with Kuwait construction industry. After a comprehensive review of the pertinent literature, a mixed method research approach is utilized involving in-depth interviews and subsequently a structured questionnaire survey. The questionnaires survey was conducted with local stakeholders within the Kuwait construction industry who were employed in both private and government sector and statistical analysis was carried out in order to identify the major project risks. The results suggested that the different groups of organizations responded to the technical risks more than other risks. A significant difference is observed in the perception of the criticality of these factors based on the stakeholder's level of experience and sector of organization. The correlation test between the risk category groups which indicated that there is a positive relationship between the risk categories' group variables. The results suggest that there are numerous relationship levels existing in the results of the correlation test. The output results from this study can guide construction stakeholders to distinguish the critical risks associated with mega bridge projects so that they can consequently establish a suitable and comprehensive framework for risk mitigation.

Keywords: Bridge, risk management, infrastructure, mega project, risk analysis

2 Introduction

Infrastructure is basic physical and organizational structures needed for the operation of the society or enterprise or reproductive system, or services and facilities necessary for an economy to function. It can be generally delimits as the set of consistent structural components that offer framework supportive an whole structure of development [1], [2]. Mega infrastructure project is infrastructure projects that comprise large-scale investment, a long term of construction, the complexity of uncertain elements, heterogeneous stakeholders,

and a tremendous impact on the ecological environment. Infrastructure is the crucial physical and organizational structures essential for the operation of a society such as buildings, industries, health services, roads, bridges, governance and so on [1], [3].

Mega Project can be defines as major infrastructure projects that cost more than U.S \$1 billion, or projects of a significant cost that attract a high level of public attention or political interest because of substantial direct and indirect impacts on the community, environmental, and budgets." [4]. Furthermore, the construction of megaprojects implicates resources that run into millions of