The 5th International Conference of Euro Asia Civil Engineering Forum (EACEF-5)

Successful criteria for large infrastructure projects in Malaysia

Md. Asrul Nasid Masrom[a,*], Mohd Hilmi Izwan Abd Rahim[a],
Sulzakimin Mohamed[a], Goh Kai Chen[a], Riduan Yunus[b]

[a]*Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Batu Pahat Johor, Malaysia*
[b]*Faculty of Civil Engineering and Environmental, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Batu Pahat, Johor, Malaysia*

Abstract

Large infrastructure project is one of significant category in the development of Malaysian construction industry. This type of project has been recognized as a high complexity project with numerous construction risks, large cost involvement, highly technical requirements and divers of resources. Besides, the development of large infrastructure such as highway, railway, Mass Rapid Transit (MRT) and airport are also needed a large investment of public and private sector. To accomplish the development successfully, several challenges has to be determined prior the project commencement. To date, a comprehensive assessment of key success criteria particularly for large infrastructure in developing country such as Malaysia is still not systematically defined and therefore, it needs further investigation. This paper aims to explore the potential success criteria that would be useful in gauging overall performance of large infrastructure implementation particularly in developing country. Previous successful criteria studies were used to develop a conceptual framework that possibly suitable for measuring large infrastructure performance. The findings show that successful criteria of infrastructure projects implementation could be grouped according to several key elements as it seems significant to the participants in prioritizing project challenges more systematically.

Keywords: Succesful Criteria; Performance; Large Infrastructure; Malaysia.

* Corresponding author. Tel.: +607-4533925; fax: +607-4533666.
  *E-mail address:*asruln@uthm.edu.my

1. Introduction

The construction industry makes up an important part of the Malaysian economy. Although this industry is relatively small, but it has been extensively interrelated with many other parts of the economy, particularly those for basic metal products and electrical machinery. This means that, construction can be described as some kind of an economic engine for Malaysia. To deliver large infrastructure project successfully seems a big challenge as it has been highlighted in a substantial of previous literatures. Project success factors was first introduced by Rubin and Sealing in 1967 and have since then been used frequently within project management [1]. In Malaysia, several numbers of key infrastructure projects are being delivered under the Economic Transformation Programme (ETP), the real estate market is still remaining optimistic, and the construction sector in Malaysia is enjoying a relatively busy economic cycle [2]. There are number types of large infrastructure projects such as new trunk roads, airports, port, power stations, nuclear facilities and chemical work. In order to implement the project successful, several of criteria that contribute to project success need to be investigated further since study on this regards is still not fully discovered. Therefore this paper provides a review of the potential successful criteria particularly for large infrastructure projects in Malaysia. The definition of challenges in the implementation of large infrastructure from the previous studies might be helpful for participants to improve their performance and project delivery.

2. Overview on Malaysian Construction Industry

The construction industry and the private sector play important roles in generating wealth and improving the quality of life for Malaysians. It can be achieved through the translation of government's socio economic policies into social and economic infrastructures and buildings. The construction industry also provides job opportunities to approximate 800,000 people [3]. Additionally, the construction industry has endured monotonous financial performance over the past five years. While Gross Demand Profit (GDP) grew at an average rate of 3.3% from 2012 to 3.5% GDP in year 2013 [4]. In addition, a number of supportive government policies such as the tenth Malaysian Plan (2011-2015), Economic Transformation Programme (ETP) and the 2012 National Budget also played an important role in sustaining the strong growth in economic sector [7].In the first quarter of growth has been determined in most economic sector especially the construction, manufacturing and services. Backed by the ongoing implementation of various public large-scale project, the construction industry is expected to improve significantly. Adversely, the agriculture sector is showing moderate growth due to lower output of crude palm oil due to the natural production down cycle and the mining sector is expected to recover with improvement in crude oil output and supported by a moderate increase in output of natural gas [4]. As depicted in Table 1.1, there are several sectors are namely, agriculture, mining, manufacturing and construction.

Table 1: Gross Domestic Product (GDP) [4]

	CHANGE (%)			SHARE OF GDP (%)		
	2011	2012	2013	2011	2012	2013
Agriculture	5.9	0.6	2.4	7.7	7.3	7.2
Mining	-5.7	1.5	2.7	8.8	8.5	8.3
Manufacturing	4.7	4.2	4.9	25.1	25.0	25.0
Construction	4.6	15.5	11.2	3.0	3.3	3.5
+Services	7.0	5.5	5.6	54.2	54.5	54.8
GDP	5.1	4.5-5.0	4.5-5.5	100	100	100

3. Large Infrastructure Projects

This section discusses on definition of large infrastructure projects and large infrastructure development in Malaysia. Large Infrastructure is the basic physical systems of a business or nation. Transportation, communication, sewage, water and electric systems are all examples of large infrastructure. These systems tend to be high-cost investments, however, they are vital to a country's economic development and prosperity. Additionally