



FACTORS THAT AFFECT THE PERFORMANCE OF PUBLIC PROJECT IN  
MALAYSIA

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## ABSTRACT

Public project is covers most of the infrastructure and facilities needs such as schools, hospitals, administration offices, religious buildings and many more. This paper based on study that has been conducted which involves types of public project and problems of handling public project. This study also focused on factors that affect the performance of public project in Malaysia. To achieve the objective of this study, 140 sets of questionnaire have been sending to twenty (20) companies and eight (8) Jabatan Kerja Raya (JKR) main branches around Malaysia. Average Index (AI) method have been use to analyze data that has been collected. It was found that, there are eleven (11) types of public project and the highest occurrence is public facilities project. Nevertheless, there are twelve (12) problems of handling public project in Malaysia and the highest frequency of occurrence is social issues. There are four factors that affect the performance of public project in Malaysia which are cost, time, quality and safety and health and the critical factor that affects the performance of public project is cost. Future study can be done about how to control the problems of handling public project in Malaysia which is can affect the performance of public project, how these four (4) factors which are cost, time, quality, and safety and health will affect the performance of public project, and how to control the factors that affect the performance of public project.

## ABSTRAK

Projek awam meliputi kebanyakan infrastruktur dan kemudahan penting seperti sekolah, hospital, pejabat pentadbiran, tempat beribadat dan banyak lagi. Tesis ini adalah berdasarkan kajian yang telah dijalankan yang melibatkan jenis projek awam dan masalah mengendalikan projek awam. Kajian ini juga memberi tumpuan kepada faktor-faktor yang mempengaruhi prestasi projek awam di Malaysia. Untuk mencapai objektif kajian ini, 140 set soal selidik telah dihantar ke dua puluh (20) buah syarikat dan lapan cawangan utama (8) Jabatan Kerja Raya (JKR) di seluruh Malaysia. Purata Indeks ialah kaedah yang telah digunakan untuk menganalisis data yang telah dikumpulkan. Telah didapati bahawa, terdapat sebelas (11) jenis projek awam dan kekerapan tertinggi adalah projek kemudahan awam. Selain dari itu, terdapat dua belas (12) masalah mengendalikan projek awam di Malaysia dan kekerapan tertinggi ialah isu-isu sosial. Terdapat empat faktor yang mempengaruhi prestasi projek awam di Malaysia iaitu kos, masa, kualiti dan keselamatan dan kesihatan dan faktor kritikal yang mempengaruhi prestasi projek awam adalah kos. Kajian masa depan boleh dilakukan tentang bagaimana untuk mengawal masalah mengendalikan projek awam di Malaysia yang boleh menjejaskan prestasi projek awam, bagaimana keempat-empat (4) faktor iaitu kos, masa, kualiti dan keselamatan dan kesihatan akan menjejaskan prestasi projek awam, dan bagaimana untuk mengawal faktor-faktor yang mempengaruhi prestasi projek awam.

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

Ever since seventies, the economy of Malaysia has experienced rapid evolution. Construction industry establishes an important constituent of Malaysian economy. The construction industry has various complications to distribute quality construction projects because it embraces of a multitude of professions, occupations and organizations. It displays how important to control and manage the projects in good quality and efficiently (A.S. Ali *et.al*, 2010).

The widely held of present project performance measurement tools emphasis on financial aspects such as the return on investment and profit per unit argued that financial parameters are beneficial, but there are insufficiencies, such as lagging metrics, a lack of strategic focus, and a failure to provide data on quality, relationships, and the environment. In Australia, the New South Wales Public Works

Department launched a Project Performance Evaluation (PPE) framework, which covers a wide range of performance parameters. The selected parameters include time, cost, quality, safety, contractual, communication, environment, and dispute resolution elements (Sai On Cheung *et.al*, 2004).

In modern public construction projects consist of numerous stakeholders, such as designers, contractors, subcontractors, construction managers, consultants, and specialists from different fields. In a multi-agency work environment, it is natural to have clash of objectives and interests among the different stakeholders (S. Z. S. Tabish *et.al*, 2011).

Success in cost performance is contingent on the management of construction resources, budget management, construction method, and communication. Success in time performance depends on choice of construction method, management of construction resources, schedule management, supervision and control, and communication. Quality management, budget management, human resource management, owner involvement, and team relationships hinder time performance (S Meeanpul *et.al*, 2006).

## **1.2 Problem Statement**

Delay is one of the most common problems faced in a construction project. Most of the building projects usually cannot be accomplished within the required contract period. The delays problem in project is a worldwide phenomenon. The construction industry in Malaysia, a developing country in South-East Asia, is not exclusion. In 2005, approximately 17.3 percent of the 417 government contract projects in Malaysia were considered sick with more than three months delay or abandoned (Hamzah Abdul-Rahman *et.al*, 2009).

Numerous construction projects have negative net cash flows until the end of construction when the final payment is received or advanced payment is received before starting the project. The delay of payment from owners will distress the cash flow of the contractor and retain age withdrawn by the owner will also create cash flow problem to the contractor (Kho Mei Ye *et.al*, 2010).

Construction industry in Malaysia encounters lots of difficulties such as the delay to complete the project in time, the expenses exceeding the budget, the building defects and over dependent of foreign workers. The ultimate effects of project delay also results in exceeding cost. This leads to serious need of addressing the critical issue of construction cost overrun (Aftab Hameed Memon *et.al*, 2011).

Construction failure is related to defects and shortcomings during the project implementation process of construction projects. However, normally parties managing construction projects are slightly neglectful of the defects and their causes, and thereon take the necessary action if and when they happen. Most defects are not properly recorded and resolved, and in end, this frequently results in significant cost overruns (Padzil@Fadzil Hassan *et.al*, 2011).

### **1.3 Objective**

There are three (3) objectives have been discussed and determined in order to realise the purpose of this study. The objectives are:

- i. To identify types of public project.
- ii. To identify the problems of public project in Malaysia.
- iii. To analyse the critical factors that effecting performance of public project in Malaysia.

#### **1.4 Scope of Study**

The scopes of study have been determined in order to facilitate the literature of study by focusing on specific field. The study is focusing on factors that effecting the performance of public project in Malaysia.

This study covered all construction public projects in Malaysia. A set of questionnaire will be prepared to people in construction company that involve in construction of public projects in Malaysia.

#### **1.5 Significance of Study**

The results that have been obtained from this study can contribute to the public project in Malaysia. This study can helps in identifying the critical factor that affect the performance of public project which the precaution step can be taken so that the problem would not happen throughout the construction process. Moreover, this study also helps to identify the factors that will affect the performance of public project and the people that involve can find solution earlier to overcome the problem.

For individual, this study can contribute the knowledge what is the critical factor and factors that affect the performance of public project. So, when I have graduated I will know which factor is the most importance factor that has to be considered when managing a public project. So, this study can help me to manage the project more effectively and productively.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Malaysia is developing efficiently toward the achievement of Vision 2020. In attaining this vision, the country has to experience tremendous development. Aside from given that houses for the people, the construction industry has to support the development of other industries with various types of wide-scale projects implemented by either public or private sectors. It is acknowledged that project briefing is the most important process conducted during the initial stage of project development. The research was undertaken to study the public sector's construction briefing process and to investigate the problems arising during the process (Mastura Jaafar *et.al*, 2011).

Malaysia is a fast developing country in Asian region and has undergone rapid economic growth since the seventies. The construction industry (CI) has played an important part in the Malaysia economic development. Construction industry has been consistently contributed approximately 3% to 5% of the national Gross Domestic Product (GDP). The development in construction has been increase from 6% to 15% since the seventies until middle nineties. There are two (2) main sectors for construction projects in Malaysia which is public and private sector. Most of the public sector projects are handled by Public Works Department (PWD). In Malaysia, the Construction Industry Development Board (CIDB) is an organization with the focal function of developing, improving and expanding the Malaysian construction industry and is involved with the public and private sectors project development (Intan Rohani *et.al*, 2009).

The construction industry often acts as a catalyst to stimulate the growth of a nation's economy. The industry is often referred to as an engine of growth. However, numerous government reports have criticized the industry's poor performance, especially in terms of productivity, quality and quality systems (Azlan S Ali *et.al*, 2010).

The success of a construction project depends on a numeral of aspects, such as project complexity, contractual arrangements, relationship between project participants, the competency of project managers, and the abilities of key project members. The key project members is including the architects, the quantity surveyors, and the engineers are the central figures throughout the period of a contract in terms of implementing and managing construction processes and correlated activities ( Sai On Cheung *et.al*, 2004).



## **2.2 Definition**

### **2.2.1 Public Project**

Public works and projects refer to construction activities of all kinds that are commenced by the government in the public interest. These activities lead to the creation of perceptible assets such as drainage, irrigation and dams, railroads, roads and bridges, ports and buildings. However, industrial projects such as fertiliser, steel, oil and petroleum undertakings are excluded (Mohd. Rusli Hussein *et.al*, 1995).

All these facilities may be either public work procured by a public authority such as government departments, public utilities, nationalised industries, universities, the Post Office, new town corporations, and housing associations, or private work procured by a private owner or organisation or by a private developer. Such private work includes work carried out by firms on their own initiative or where the private sector carries the majority of the risk (Nii Amponsah Ankrah, 2007).

### **2.2.2 Project Performance**

Performance can be considered as an evaluation of how well individuals, groups of individuals or organisations have done in pursuit of a specific objective (Nii Amponsah Ankrah, 2007). Performance measurement is defined as the process of evaluating performance relative to a defined goal. It provides a sense of where we are and, more importantly, where we are going. It is widely accepted view that, at a minimum, performance measures of a project are based on time, cost, and quality (Azlan S Ali *et.al*, 2010).

There has been identified distinction between performance indicators, performance measures and performance measurement. Performance indicators identify the measurable evidence necessary to prove that a planned effort has achieved the desired result. In other words, when indicators can be measured with some degree of precision and without uncertainty they are called measures. However, when it is not possible to obtain a precise measurement, it is usual to refer to performance indicators. Performance measures are the numerical or quantitative indicators. On the other hand, performance measurement is a systematic way of evaluating the inputs and outputs in manufacturing operations or construction activity and acts as a tool for continuous improvements (Roshana Takim *et.al*, 2002).

## **2.3 Types of Public Project**

### **2.3.1 Introduction**

The fact that building projects are significantly dominating the public projects in Malaysia in terms of numbers and overall monetary values as it covers most of the infrastructure and facilities needs such as schools, hospitals, administration offices, religious buildings and so on. Civil engineering projects are such as roads and bridges (Muhamad Rosdi Senam *et.al*, 2010).

### **2.3.2 Clinic/Hospital**

There are many types of government clinic and hospital. For the government clinic there are which are 'Klinik Desa' and Policlinic. Klinik Desa is located one not at every village and policlinic is located some at every district. There are three (3) types of hospital which are general hospital and district hospital. The general hospital

is located one at every state while the district hospital located one at every district. Other than that, there are also other hospital which is under university name such as HUKM and HUSM. Clinic and hospital are one of the public projects which are under JKR scope of work.

### **2.3.3 Mosque/ Religious Building**

Mosque is one of the public projects which under government control and under JKR scope of work. Mosque is the place for Muslim people to pray. Malaysia is one of the Islam countries so there are a lot of mosque in Malaysia. Most of the village in Malaysia have one mosque. It also located at every district and at every state. The mosque that builds for the state is called 'Masjid Negeri' and there is also one big mosque for this country which called 'Masjid Negara'.

### **2.3.4 School/ University/ College**

In Malaysia, there are a lot of schools it is under JKR scope of work. There are two (2) types of government schools which are secondary and primary schools. Secondary school can be divided into two (2) types which are boarding school and daily school. In Malaysia, there are a lot of universities under government which called IPTA. Example of IPTA is UMP, UMS, USM and UKM. There are also a lot of colleges under government. Example of government colleges is Politeknik.

### **2.3.5 Police Station/Fire Station/Army Camp**

Police station, fire station and army camp are under government are included as public project. At every district there are one police station and fire station. The

army camp is located at some of the district but it is not located at every district. The construction of police station, fire station and army camp is under the JKR scope of work.

### **2.3.6 Government Office Building/Administration Office**

The government office or administration office is one of the public projects which are under JKR scope of work. Examples of the administration office are Jabatan Pendaftaran Negara (JPN) and Pejabat Daerah.

### **2.3.7 Bridge**

One of the public projects is bridge and under JKR scope of work. There are many bridges in Malaysia. The most famous bridge in Malaysia is Penang Bridge. The work related to the bridge project not just the construction but also the maintenance.

### **2.3.8 Road/Highway**

Road and highway are one of the public projects which are under JKR scope of work. There are so many road and highway within Malaysia. Some of highway in Malaysia the users need to pay for toll. This is to payback the cost of highway construction by the company that construct the highway although it is a public project.

### **2.3.9 Water Treatment Plant**

The water treatment plant is one of the public projects and under every state Jabatan Bekalan Air (JBA) scope of work. The work related to the water treatment plant not just the construction of water treatment plant but also the operation and the maintenance of it.

### **2.3.10 Dam**

Dam is one of the public project which under Jabatan Bekalan Air (JBA) and Tenaga Nasiaonal Berhad (TNB). Dam is generally serves the primary purpose of retaining water. While other use of it is hydroelectric and pumped-storage hydroelectricity are often used in conjunction with dams to generate electricity. A dam can also be used to collect water or for storage of water which can be evenly distributed between locations.

### **2.3.11 Court Building**

Court building also one of the public projects in Malaysia and under JKR scope of work. There are Magistrates' Court, Sessions Court, High Court, Court of Appeal, Federal Court and Syariah Court.

### **2.3.12 Public Facilities**

Public facilities are one of the public projects. The example of public facilities is bus stop, food court, and hall. Most of these public facilities are under

state or district government such as Majlis Perbandaran Kuantan, Majlis Perbandaran Subang Jaya, and Dewan Bandaraya Kuala Lumpur.

#### **2.4 Project Performance**

There is a strong relationship between project management and project performance. Management in construction industry is considered as one of the most important factors affecting performance of works. The documenting and archiving performance data could be beneficial for future reference such as for settling disputes on claims, and in maintenance and repair works (Saleh Samir Abu Shaban, 2008).

Project management is one of the criteria upon which project performance is contingent; it is also questionably the most significant as people formulating the processes and systems who deliver the projects. An adequate understanding and knowledge of performance are required for archiving managerial goals such as improvement of institutional transformations, and efficient decision making in design, specification and construction, at various project-level interfaces, using appropriate decision-support tools (Saleh Samir Abu Shaban, 2008).

Project performance also related to project managers. It is remarked that development of a Web-based construction Project Performance Monitoring System (PPMS) can assist project managers in exercising construction project performance indicators and can help senior project management, project directors, and project managers in monitoring and assessing project performance (Saleh Samir Abu Shaban, 2008).

Construction industry constitutes an important constituent of Malaysian economy. There are four (4) fundamental constraints needed to be considered when managing the construction projects, which are scope, cost, time, and quality. In order to manage the projects successfully, it is necessary to consider whether the project is within those four constraints (Azlan S Ali *et.al*, 2010).

It is widely accepted observation that performance measures of a project are based on time, cost and quality. There are also variety criteria in measuring a project. This includes meeting budget, schedule, and the quality of workmanship, stakeholder's satisfaction, transfer of technology, and health and safety (Azlan S Ali *et.al*, 2010).

The performance of the construction industry has been criticized consistently over many years and a lot of effort through inventiveness like the constructing excellence programme and through broad research, has been devoted towards producing performance improvement on construction projects. Although there is a resilient perception that 'softer' factors like culture also influence performance outcomes (Nii Amponsah Ankrah, 2007).

The project success definition can be very subjective and can differ from one stakeholder to another. Basic keywords that are conventionally associated with project success are meeting project target with regards to time, cost and quality (Noor Ainy Burhanudin, 2011).

Traditional project performance measurement can be measured by three (3) factors which are cost, time and project quality. Previous researcher argued that the measure of project success can no longer be restricted to the traditional indicators. They advocate the expansion of success measurement towards project management success or product success or both (Norshima Humaidi *et.al*, 2011).

Project cost performance is used to show how well the project adheres to the agreed budget. It is important because resources are often limited and cost overruns are to be avoided. Time monitoring seeks to assess how well the project adheres to the planned schedule over a period of time. Three (3) areas of time management are given special attention are achievement of critical dates, achievement of milestones, and the turnaround time for submission in the period. The quality category helps to ensure that projects will achieve the quality standard set out in the contract. It should therefore cover the areas of quality control. The safety and health category covers four (4) key areas which are monitoring and compliance, education and training, inspection and audit, and complaints and air pollution, noise pollution, water pollution, and waste management (Sai On Cheung *et.al*, 2004).

Project success can be divided into four (4) scopes and these four (4) scopes are time-dependent. The first element is the period during project execution and right after project completion. The second element can be assessed shortly afterwards, when the project has been delivered to the customer. The third element can be assessed after a significant level of sales has been achieved in one to two years. Finally the fourth element can only be assessed three to five years after project completion (Albert P C Chan *et.al*, 2004).

According to previous studies, concepts and definitions of the performance measurement is a process include factors as Key Performance Indicators (KPIs) such as time, cost, quality, client satisfaction, productivity and safety in order to enable measurement of current organizational project performance and to accomplish significant performance improvements of future projects. Key performance indicators (KPIs) consist of factors such as time, cost, quality, client satisfaction, client changes, business performance and safety in order to enable measurement of project and organizational performance throughout the construction industry. The performance measurement is a current issue in construction industry (Saleh Samir Abu Shaban, 2008).