

THE COMPARISON ON THE MILESTONE AND MONTHLY PAYMENT OF  
PROJECT PERFORMANCE IN PUBLIC WORKS DEPARTMENT

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To my parents, dearest wife, Dr. Nor Asma Musa, my children Shafiq, Arif, Amalina  
and Aina

Thank you for your support and never ending love

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## ABSTRACT

Payment is very crucial factor to make sure projects are performing better and to be delivered according to quality, time and within the original cost allocated. In order to minimize complaints from clients and also to increase project performance, Public Work Department (PWD) has introduced one alternative payment concept known as the Earned Value Milestone Payment (EVMP). This research's main objective is to compare the project performance between EVMP and MPP method in PWD projects. The specific objectives of this study are firstly to identify the performance issues related to MPP and EVMP projects, secondly to evaluate the critical performance factors in term of quality, cost and time and to propose the best payment method to be implemented in PWD projects. This study was conducted by using a qualitative and quantitative approach. Data were collected through survey questionnaire, case study, documents pertaining the project performance and also by conducting interviews with the relevant project stakeholders. The study found that 77% of the respondents agreed that EVMP is good method to make sure the projects can be completed in time, quality and cost allocated if been implemented properly with competence project team members. Positively the case studies revealed that EVMP projects scored the excellent remark for quality of site management, administration, planning, facilities given and also excellent quality of infrastructure works. This research is very important as it will change the future way of payment method in PWD projects. With regard to the benefits and advantages of EVMP method, it is timely and the right move for PWD to make it mandatory in all projects throughout the country in order to enhance the project performance in the future.

## ABSTRAK

Bayaran adalah salah satu faktor penting bagi memastikan projek dapat disiapkan mengikut kualiti, masa dan kos yang telah ditetapkan. Di dalam usaha untuk mengurangkan aduan pelanggan dan juga untuk meningkatkan prestasi projek, Jabatan Kerja Raya (JKR) telah memperkenalkan satu kaedah bayaran alternatif yang dikenali Bayaran Berperingkat Mengikut Nilai Dapatan (Earned Value Milestone Payment) atau EVMP. Sehubungan itu, kajian ini telah dijalankan untuk membandingkan prestasi projek-projek JKR yang menggunakan kaedah bayaran EVMP dan MPP. Objektif khusus kajian ini adalah untuk mengenalpasti isu-isu yang berkaitan dengan prestasi projek yang menggunakan kaedah MPP dan EVMP, objektif kedua adalah untuk menilai faktor prestasi yang kritikal seperti kualiti, kos dan masa dan objektif ketiga adalah untuk mencadangkan kaedah pembayaran kemajuan terbaik untuk dilaksanakan di dalam projek-projek JKR. Kajian ini menggunakan pendekatan kualitatif dan kuantitatif dimana data telah diperolehi melalui soal selidik terhadap pihak-pihak berkepentingan di dalam pelaksanaan projek dan juga melalui kajian kes. Berdasarkan keputusan kajian, didapati 77% responden bersetuju bahawa EVMP adalah amat sesuai dilaksanakan bagi memastikan projek-projek JKR dapat disiapkan menepati masa, kualiti dan kos yang telah ditetapkan dengan syarat ianya dilaksanakan oleh pasukan projek yang mempunyai kompetensi dan pengetahuan yang secukupnya. Kajian kes juga menunjukkan projek perintis EVMP memperolehi markah yang cemerlang bagi kualiti perancangan, pengurusan, pentadbiran dan kualiti binaan di tapak. Kajian ini amat penting sebab ianya akan menukar kaedah bayaran JKR di masa hadapan. Berdasarkan kebaikan dan kelebihan kaedah EVMP ini, maka ini adalah masa dan langkah yang tepat untuk JKR mewajibkan penggunaannya untuk setiap projek di seluruh negara di dalam usaha untuk mempertingkatkan prestasi projek di masa hadapan.

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**LIST OF ABBREVIATIONS**

PWD	Public Work Department
SKALA	Sistem Kawal dan lapor
JKR	Jabatan Kerja Raya
EV	Earned Value
MPP	Monthly Progress payment
EVMP	Earned Value Milestone Payment
BKB	Bayaran Kemajuan Bulanan
GTP	Government Transformation Program
PROKOM	PWD Project Complex Management Branch
SO	Superintendent Officer
HOPT	Head of Project Team
HODT	Head of Design Team
WBS	Work Breakdown Structure
PD	Project Director
SPSS	Statistical Package for Social Science

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

In the new era of global economy, the construction industry had contributed significantly to the economic growth of the country. Public Works Department (PWD) as a main technical consultant for Malaysian Government has an objective to deliver quality projects within the stipulated time and within the original cost approved (PWD Annual Report, 2010).

Recently PWD project performance has become a main issue for national development. From the data provided by PWD Project Monitoring Unit, it showed that more than 50% of the projects in the Ninth Malaysia Plan managed by PWD were completed behind time. The reasons of these are because of the payment issues, land acquisition, additional works and relocation of public services and change of original designs by client (Khair, 2010). Auditors General Report (2012) stated that a substantial amount of government projects failed in achieving specified quality like the incident of roofs collapsed (Stadium of Sultan Mizan in Kuala Terengganu, Terengganu).

Hence, the level of performance in carrying out PWD project will depend on the quality of the managerial, financial, technical and organizational commitment of the respective parties, while taking into consideration the associated risk management, the business environment, and economic and political stability (Roshana Takim and Akintola Akintoye, 2002). According to Wang (1994), as construction is becoming more complex, a more sophisticated approach is necessary to deal with initiating, planning, financing, designing, approving, implementing and completing a project. Payment to contractors also very important criteria to increase the project performance. Wang (1994) asserted that one of the main success factors in project performance is promptly payment given by the client to the contractor. Singh (2003) also stated that payments are major concerns to contractors and employers.

There are many types of progress payment practices by PWD such as Monthly Progress Payment (MPP) and Earned Value Milestone Payment (EVMP). In the present PWD projects, almost all construction contracts have claims or payment application and certification provisions, which are usually applied and implemented on a monthly or by milestone payment basis. Interim payment or milestone payments are usually prepared by the contractor and submitted to the PWD Engineer for payment approval. PWD, then we're required to pay within a specified period after having received the said interim payment certificate (COC JKR, 1999).

Currently, most of the PWD projects are using the MPP meaning that the client had to pay monthly accordingly to what is actual finished work done up to the valuation date by the contractor. However PWD has come out with alternative payment called EVMP where payment is subject to the satisfactory performance. The value of works completed and payment be made upon certain events being achieved. For this reason, the EVMP will represent the true value of the works completed.

To elaborate further on the project performance by using these two methods, this study will be conducted to compare the performance issues related to each payment

method and also to study the performance critical factors between the two payment methods. The findings and proposed solution can be tabled to PWD in order to increase the project performance in Malaysia.

## **1.2 Problem Statement**

Based on the data of past projects, PWD Director General concerned about the unsatisfactory project delivery by PWD. According to Khair (2010) who conducted studies on the performance of PWD's building projects year 2004 to 2010, there were 75% of building projects were completed with Extension of Time (EOT) and 83% of projects completed behind schedule in 2009. Data from PWD Annual Report (2012) showed that there were 25% projects (96 nos) from total 390 projects under construction were categorized as sick projects. Sick project is terms used for projects which the physical progress was delayed 25% from the original scheduled progress. All these statistical data showed that many of PWD projects delivered to client failed to meet client's expectation to receive the project within the approved time. Beside that among the client's major complaints to PWD are poor qualities of the project delivered, the project completed not in time and project with cost over run (PWD Annual Report, 2011). Studies showed that all of these projects use monthly progress payment method (SKALA, 2012).

In order to prevent all unnecessarily complaints from clients and also to increase project performance, PWD have implemented one new concept known as the Earned Value Milestone Payment (EVMP) in two piloting PWD projects. In summary, EVMP concepts are very simple. The value of work gained based on completing Milestone Events planned to achieve completion which represents the work items or sub components within the Work Breakdown Structure (WBS) with indication of activities planned to be achieved against the work program.

This study will be conducted to investigate the current issues regarding the conventional payment method that used by monthly valuation and projects that adapting EVMP methods in project performance.

### **1.3 Objectives of the Study**

The aim of this study is to compare the project performance between EVMP method and Monthly Progress Payment Method in PWD projects. The specific objectives of this study are as follows:

- i) To identify the performance issues related to the current payment method MPP and EVMP method.
- ii) To evaluate the critical performance factors in both methods.
- iii) To propose the best payment method as the effective payment method for PWD to implement in order to increase project performance.

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

This study will compare two current PWD pilot projects that use EVMP payment methods and two projects that using MPP method. The study will focus on bridge upgrading works project valued less than RM 10 Million with the same scope of work and time duration.

The two projects which were used EVMP are Sg. Penggorak Bridge Project, Kuantan, Pahang and Sg. Serdang Bridge Project, Kulim, Kedah. Another two MPP project is Sg. Rasau Bridge Projek, Sepang, Selangor and Sg. Choh Bridge Project, Perak.

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

The payment method is very crucial factor in determining success in project performance. EVMP is an approach to establish the best specific payment method that are based upon the completion of identified deliverables and reflect the value of the completion of that work and the acceptance of those deliverables. In doing this, PWD would need to specify the deliverables that must be completed or provided to meet the milestone, and the requirement that those deliverables must be accepted as pre-condition of payment. The acceptance requirement prevents PWD from paying for deliverables that need to be corrected. EVMP payments also are based on the deliverables within each milestone event which is certified as completed and fully satisfy the quality in the contract. This can improvise and absolutely increase the PWD project performance.

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