

## TIME MANAGEMENT IN CONSTRUCTION

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### ABSTRACT

*This study aims to identify the problems of inefficient time management of responsibility among the parties, including the contractors who are directly involved in a project. Humans have four dimensions: the physical, mental, social or emotional and spiritual. All of that should be understood, practiced in order to get the suit together. Effort consolidation study and research should be conducted to find out and solve the problem of time management arises whether the upper and lower levels of management in specific project. Qualitative rules involved in this study are a literature review, observation and questionnaires. Selection method of study is important to ensure that all information relating to the objectives of this study. Studied the issue of time management can be separated into the cause of inefficient time management, effective ways to overcome the problem of inefficient time management, efficient time management effects, and the effects of poor time management. Based on the search results of this study, an efficient time management can be achieved and practiced in all cases in addition to matters related to the project. It is hoped that the results from this study will assist in some of the project management to manage time more efficiently and thus can prevent the onset of other problems that are more complicated.*

### Keyword:

*Time Management, Construction industry*

### 1.0 INTRODUCTION

The purpose of this brief report is to summarize about the issues associated with the construction project. The issue that is associated with the construction is the time management and how the time delay can affect all the construction

activities. Project time can span all the construction activities. In this report, we will discuss about how the construction for example in highway construction encompass the entire range of planning, design, management, and construction activities and how the time management can affect all these activities.

Time has always be the most important criteria of a successful project management. According to Lee (2008), who has studied 161 construction projects, found that one of the key causes of cost overrun was delays. Construction projects often cost more and usually take longer time than its original plan. The time delay can usually cause by the contractor itself who was working inefficiently or because the employer had instructed for additional work. When the projects are facing a critical delay, the contractor has no choice but to generally entitle to an extension of time (EOT).

Time delay can extend the completion of the construction activities. In this situation, such remedial action can be taken such as project acceleration and increase the input resources. The time delay of the construction activities can also increase the cost in completing the project. This is because the time delay of the project can lead to overrun of planned project completion with significant negative financial consequences. For instance, direct costs from crashing activities to achieve said acceleration.

This report examines about how the time management can affect the construction activities as a whole. It is also to examine effect of the time delays by referring to the highway construction.

### 2.0 LITERATURE REVIEW

The time consuming management in construction especially on highway project construction is seeking very highly to take some commitment and accountability by main contractor

and other sub-contractor in a project. Sumit Mitra *et al.*, (2012) studied project management is a process that involves planning and control methods that give a comprehensive view of handling projects in any industrial or commercial sector and the planning and control method must include time as significant aspect. Based on Gurvitch's perspective, time is as vague a notion as "convergent and divergent movements which persist in a discontinuous succession and change in a continuity of heterogeneous moments". According to Ng *et al.* (2001), there have after testing and refitting the BTC model with a new set of data, compared the findings with previous studies in Australia found that the length of unit construction time changed over time periods.

Time management is important to be control during construction because construction delay will happen if not follow the right time. According to Wa'el Alaghbariet *et al.*, (2007) defined delay as generally acknowledged as the most common, costly, complex and risky problem encountered in construction projects. For

### 3.0 METHODOLOGY

Methodology is the method used in collecting the data and the procedure in gaining the data. The research sets out the law relating to granting extensions of time and liquidated damages and examines the effect of one upon another. There are some methods that have been used in collecting the data about how the time management can affect the construction activities.

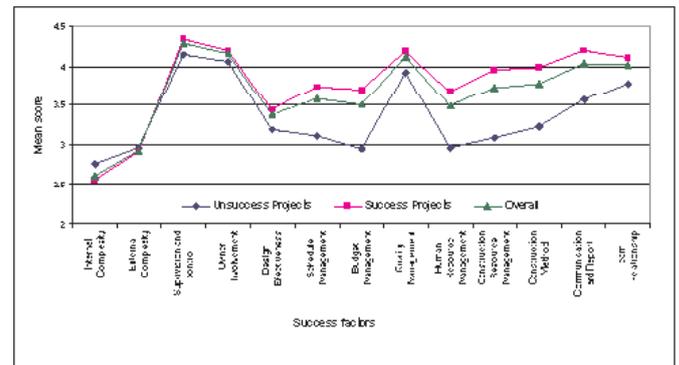
#### Analysis from journal

The methods used in the research are based on the gathered journal. We gather the data from the other journal and associate it with the current research. Based on the journal, the data is collected by using several methods. The methods includes questionnaire survey sample, telephone interview sample, sampling frame of the study, population and sampling size, data processing and analysis, ranking delay factors and any other methods that are relevant to the research that is conducted.

Based on the journal, the questionnaire could be divided into sections which include the respondent's background, company information, project information, speed factors, external factors and contractor factors. Such information can lead to a time management issues and what the factors are that can affect the delay of the construction project.

compensable delays, the contractor may be entitled to an extension of time along with costs (Gerard Hampton, 2012). Numerous studies on construction delays have narrowed on issues like variation in specifications, owner's financial problems besides lack of scientific and sophisticated project management as some of the reasons for delay ( Sambasivan and Soon, 2007; Faridi and El-Sayegh, 2006; Koushki et al., 2005). Highway construction is the one project that gives a big benefit to all consumers that use highway. Constructability is seen as one of the best solutions to these problems (Rosli Mohamad Zin *et al.*, 2006). Rosli Mohamad Zin *et al.* 2006 said that the government and private agencies that carried out highway project construction are facing the reality that the public will no longer tolerate construction projects that are insensitive to road users and adjacent communities. According to Russell *et al.* (1992), highway construction projects are characterized by traffic problems, a substantial number of changes, poor planning, disputes, cost overruns, poor safety practices and time delays.

By referring to a highway construction project, there were some example of the factors that affect cost and time performance on highway construction project.



In addition, a study from the journal has found out that a phenomenological philosophy is adopted which warrants a qualitative case study research method for the following characteristics of such a methodology suit the setting of the research and characteristics of data available:

- Ready availability of qualitative data amenable to case study approach.
- Data is rich and subjective.
- The location is natural.
- Validity is high due to personal one-to-one data collection.

#### 4.0 DATA ANALYSIS

Manpower/ HR and project organizing issues become the major part in solving the construction process and projects as well as the manpower included of the engineers, contractors, consultants, accountants, administrators and co-workers to solve the constructions projects. Moreover, any projects not only constructions projects need to have a good and strong teamwork in order to solve the project or in completing the process of construction as well as a good communications skills among the co-workers. A good teamwork as well as a good co-operations among the team are important on successfully deliver a successful projects. Many major methods tools used by the respondents in order to manage the project such as contractor report, monthly report, inspection procedure, technical memos, project schedule, Primavera software and Microsoft Project. In this journal article, we are subsidizing of the significant of time management in construction and the case study based on the highway construction. The time becomes an important source in delivering the successful projects as well a good management in time flow to perfect projects that being done.

Time management meaning there is a chronological of time from the day it appears and the allocation of the mechanism for the construction projects that included of the work time, non-discretionary time and leisure time. Time factor plays important roles in solving the projects and it is not a linear factor but cyclical factors that give a total of cause and feedback to each and every projects. Furthermore, the projects delay time due to the financial problem, scope that are not clear, not following up the procedures that had been planned, the scheduling of the projects are not consistent, poor coordination as well as the design that was chosen had been damaged. Moreover, there is improper selection of contractors and lead to the extension of time. According to our surveys and interviews, we know that there are some types of delays dealing in these constructions projects that are the client delays, contractor delays, designer delays and financial delays. These delays cause the cost to the stakeholders of the construction as well as the owners of the constructions.

There are two causes of delays in projects especially construction projects that are internal and external causes. Internal causes involves of three main that are consultant, owner and contractor. External causes of the delays inclusive of the materials, projects site, suppliers, sub-contractor, weather, and so on that related to the fault of the construction projects. Each and every

delay there are the responsible of the response such like each and every actions there is an equal level of reactions. In order to succeed a project each of these mistakes need to be taken as consideration so that the smoothness of the projects would be smooth.

There are also excusable delays, non-excusable delays, excusable compensable delays and concurrent delays. These delays all related to the cost that need to be taken under consideration in solving these delays as well the extension time that need to be taken as consideration in order to process the progress of a construction projects.

Based on the case study of "Factors affecting cost and time performance on highway construction projects: evidence from Thailand"(2006) the authors S ME EAMPOL & S.O.OGUNLANA claims that the cost and time performance of highway projects from the viewpoint of the public owner. They also states that the study differs from previous studies which focused on the contractor's perspective on project performance. A total of 13 success factors were identified from literature and the opinions of experienced engineers. The data was collected from 99 projects handled by the Department of Highways (DOH) in Thailand

- Discriminated analysis was used in this study to build the cost and time predictive models, which were generated from samples of cases, which had already been grouped and known as successful and unsuccessful projects. The models were then applied to new cases with measurements for the predictor variables, to predict that the projects were either successful or unsuccessful.

- The results show that success in cost performance depends on the management of construction resources, budget management, construction method, and communication. By contrast, schedule management and human resource management inhibit cost performance. 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 impede time performance.

## 5.0 DISCUSSION & RECOMMENDATIONS

Construction is one of the key drivers of Malaysia's economic development, recording a gross domestic product growth of 3.5 per cent to RM18.9 billion in 2011. Literature research, observation and survey methods had been done in this project to show the result either to prove the time management is significant to highway construction or vice versa. Thus, the results showed that time controlling in highway construction are the most significant aspect to think about during planning and also in implementation project. For an example of good management time, conducting the highway construction works on each section concurrently using separate project teams can complete the works in shorter time frame.

In order to overcome problem due to time inefficient management in construction, first make sure all the main activities could be done before start any activities after that. It is because if the main activities are delaying, so there have some in completing works and can cause to delay in construction for certain time. In addition, the impact from the delay construction could contribute to negative effect such as increasing in cost, maybe would give more burden and stress to contractor. Such as an example, the weaknesses identified included weaknesses in the construction of the Sultan Yahya Petra Second Bridge in Kota Baru give failure to complete the works on schedule with a time extension totaling 891 days being approved until Aug 30 in 2012 sources by Auditor's General Report 2011.

Last but not least, other proper ways to prevent any problem related to time management in construction is to ensure that the problems arising at the work site are immediately resolved so that work could be implemented according to schedule and improve coordination between local authorities, utility providers and other agencies involved so that problems at the work site could be resolved immediately and effectively. Besides that, ensure that problems related to design of the system are resolved immediately to avoid any delay in construction works and appoint a lead consultant to ensure better implementation of the project. Finally, the contractor builds the temporary highway on schedule. Perhaps with the problem solving given will help most contractors to redo and recheck schedule and take corrective action to clear up any difficulty things in project especially when related to time planning.

## 6.0 CONCLUSION

Time may well be the fundamental asset that humans seek to allocate, rather than money.

Since delays are considered to be a serious problem in the construction industry for both owners and contractors, this situation can examines the factors that cause delay in construction projects in Malaysia. In addition, the major factors causing delay in construction projects are factors due to the contractor, followed by factors due to the consultant, factors due to the owner, and finally external factors. However, time management and coordination problems are considered the important factor causing delay in construction projects, followed by materials problems. Other than that, current theory on time allocation is underdeveloped and more work is needed.

Besides that, delays may occur in construction sectors because the contractor was working inefficiently, which is its own fault, or because the employer instructed additional work, for which the contractor will be entitled to additional payment. If the management time in construction are not good and have many weakness will caused the contract generally entitle the contractor to an extension of time to the completion date for delaying events which are under the contract that is the responsibility of the employer. In much recent consumer marketing theory, time is treated as an asset, a resource, and a utility that are very important to our life. An example, just-in-time (JIT) is normally associated with the production function but it is also relevant to marketing and construction sectors in building closer relationships between clients or customers and companies.

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