

1Effect of Delays

Effects of Construction Delays on Construction Project Objectives

Mohammad Abedi, PhD Candidate, Department of Civil Engineering, RAZAK School of Engineering & Advanced Technology, Universiti Teknologi Malaysia(UTM), International Campus, Email: abedm1385@yahoo.com

Associate Professor Dr Mohammad Fadhil Mohamad, Head of Postgraduate Studies, Faculty of Architecture, Planning & Surveying, Universiti Teknologi Mara (UiTM),
Email: mfmohammad@salam.uitm.edu.my

Dr. Mohamad Syazli Fathi, Head of Civil Engineering Department, RAZAK School of Engineering & Advanced Technology, Universiti Teknologi Malaysia(UTM), International Campus, Email: syazli@ic.utm.my

Abedi, M., Fathi, M. S. & Mohammad, M. F. (2011). Effects of Construction Delays on Construction Project Objectives. The First Iranian Students Scientific Conference in Malaysia, 9 & 10 Apr 2011, UPM, Malaysia

Abstract

Delays can be defined as the late completion of works as compared to the planned schedule on the contract. Delays can be avoided or minimized only when their causes are identified. When delay occurred in to our project, it will have adverse consequences on project objectives in terms of time, cost and quality. The aim of the study reported in this paper was to identify the effects of delays that could threat project objectives in construction projects. A comprehensive literature review from various sources through books, conference proceedings, the internet, and civil engineering journals was made to carry out the study. According to delay categories that were contractor related, client related, consultant related, labor related and external related, the results of this study identified the six major effects of delay that were time overrun, cost overrun, dispute, arbitration, total abandonment, and litigation. The study also revealed that time and cost overruns were the frequent effects of delay. It is hoped that this study will become the foundation of further research in the area of project delays and mitigation measures.

Author Keywords: Project Objectives; Construction Project Delays; Adverse Consequences; Effects of Delay; Time Overrun; Cost Overrun.

Introduction

Projects success is basically to gain the project objectives that are classically defined by the need to complete a project on time, within the budget, and with appropriate quality. Hence any disruptions to the project objectives will certainly contribute to project delays with its specified adverse effects on project objectives. Delays can give rise to disruption of work and loss of productivity, late completion of project, increased time related costs and third party claims and abandonment or termination of contract. Delays are costly and often result in disputes and claims. Furthermore, delays effects the feasibility for project owner and retard the development in construction industry (Lim Chong Fong, 2004). According to S.A.Assaf et al., (2006) linked the contractor related and labor related causes of delays to the probable time overruns in construction projects in Saudi Arabia whereas Odeh & Battaineh (2002) linked the contractor related causes to the probable disputed occurring in construction projects in Jordan.

Effects of Delays

Aibinu and Jagboro (2002) studied the effects of construction delays on project delivery in Nigerian construction industry. The six effects of delay that were identified includes: time overrun, cost overrun, dispute, arbitration, total abandonment and litigation. Koushki and Kartam (2004) concluded that time and cost overrun were the impact of the material selection time, their availability in the local market and the presence of the supervising engineer. It is important to improve the estimated activity duration according to the actual skills levels, unexpected events, efficiency of work time, mistakes and misunderstanding (Lock, 1996). Delays influence negatively on the contractors performance and contribute to adverse impacts in construction

projects such as contract disputes, low productivity and increase in construction costs that will also influence on the pre determined of construction project objectives. From the comprehensive literature review, six major effects of delay in the construction projects were identified as follows:

1. Time Overrun

Murali et al., (2007) argued that contractor related factors and client related factors such as inadequate contractor experience and owner interference have impact on time overrun. On the other hand, Aibinu and Jagboro (2002) studied the effects of construction delays on project delivery in Nigerian construction industry. They identified time overrun as one of the major effects of delay.

2. Cost Overrun

Regarding cost overrun Koushki et al., (2005) identified three main causes that were contractor related problems, material-related problems, and owners' financial constraints, whereas Wiguna and Scott (2005) identified the most critical factors included: high inflation/increased material price; design change by client; defective design; weather conditions; delayed payment on contracts and defective construction work.

3. Disputes

Disputes are the effects of major causes of delays in construction projects such as causes of client related, contractor related, consultant related and external related that may be arisen during the construction projects among the project parties. Lack of communication may also leads to misunderstandings, conflicts and disputes. Hence it necessitates the project managers to have effective communication skills which are one of the significant soft skills (People skills)

with the project parties involving in construction projects. Based on Murali et al., (2007) the factors such as lack of communication between the various parties, problem with neighbors, unforeseen site conditions, delay in payments for completed work, improper construction method, delay caused by the subcontractor and discrepancies in contract documents will give rise to disputes between the various parties. Furthermore, if the disputes cannot be solved amicably or easily it can lead to arbitration or litigation.

4. Arbitration

According to Murali et al., (2007) the delays which is caused by the client relate factors and contractor related factors such as change in order, mistakes or discrepancies in contract document and lack of communication between various parties which may rise the disputes will be settled through arbitration process. For these circumstances, it is necessitate having a competent third party that can settle the disputes amicably or easily without going to court.

5. Litigation

Based on Murali et al., (2007) when the delays caused by client related, contract related, labor related, external related factors and contract relationship related factors such as delay in payment for completed works, problems with site conditions and less of labor supply where eventually rise the disputes to be settled by the litigation process. The parties involved in the construction projects use litigation as a last alternative to settle the disputes.

6. Total Abandonment

The most critical adverse effect of delays in construction projects is abandonment that could be temporary or in worse condition for permanent duration. The major causes of client related, consultant related, contractor related and external related may lead to project

abandonment that will lead to delays in construction projects. Aibinu and Jagboro (2002) studied the effects of construction delays on project delivery in Nigerian construction industry. They identified total abandonment as one of the major effects of delay.

Findings

All in all based on the literature review, six major effects of delay in construction projects included time overrun, cost overrun, dispute, arbitration, total abandonment, and litigation were identified. These major effects are shown in the below fish bone diagram.

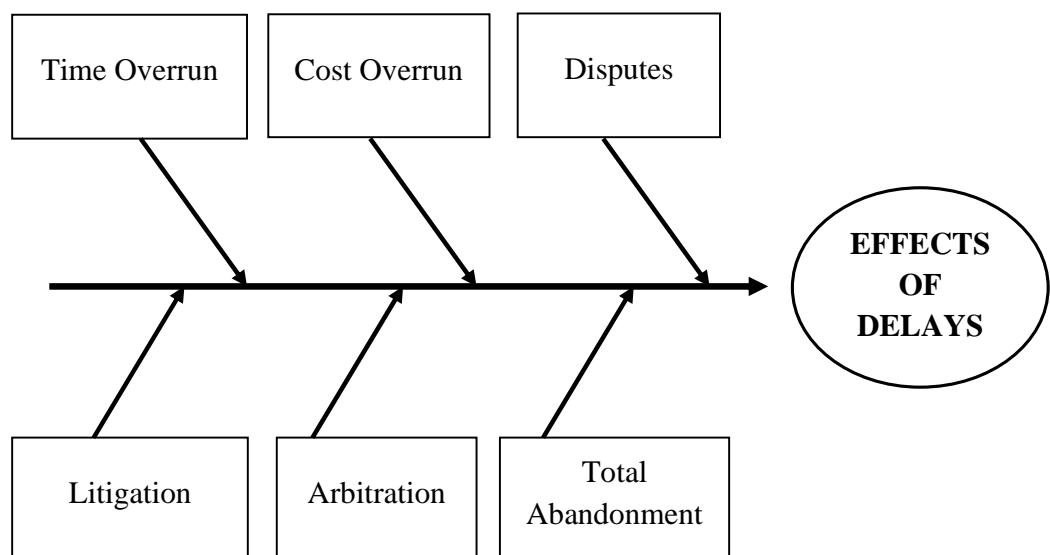


Figure 3.1 Fish-Bone Diagram of six effects of the construction delays

Conclusion

A construction project is commonly acknowledged as successful when the aim of the project is achieved in terms of predetermined objectives that are mainly completed the project on time, within budget and specified quality in accordance with the specifications and to

stakeholders' satisfaction. One of the most important problems that may arise in the construction project is delays and the magnitude of these delays varies considerably from project to project. According to delay categories that were contractor related, client related, consultant related, labor related and external related, the study revealed the six major effects of delay that were time overrun, cost overrun, dispute, arbitration, total abandonment, and litigation.

References

- Aibinu, A. A. and Jagboro, G. O. (2002). The effects of Construction Delays on Project Delivery in Negerian Construction Industry. *International Journal of Project Management*, Elsevier, **20**, 593-599.
- Koushki.P.A. and Kartam.N. (2004). Impact of Construction Materials on Project Time and Cost in Kuwait. *Engineering, Construction and Management. Economics Journal*, **11** (2), 126-132.
- Koushki.P.A, Al-Rashid.K and Kartam.N. (2005). Delays and Cost increase in the Construction of Private Residential Projects in Kuwait. *Journal of Construction Management and Economics*, **23** (3), 285-294.
- Lim Chong Fong. (2004). *The Malaysian PWD Form of Construction Contract*, Sweet & Maxwell Asia.
- Lock, D. (1996). *Project Management*, 6th Ed., Gower, Aldershot.
- Murali Sambasivan and Yau Wen Soon. (2007). Causes and effects of delays in Malaysian construction industry. *International Journal of Project Management*, **25** (5), 517-526.
- Odeh, A. M. and Battaineh, H.T. (2002). Causes of Construction Delay: Traditional Contracts. *International Journal of Project management*, Elsevier, **20**, 67-73.

S.A.Assaf, S.Al-Hejji. (2006). Causes of Delay in Large Construction Projects. *International Journal of Project Management*, **24**, 349-357.

Wiguna, I.P.A. and Scott, S. (2005). Analyzing the Risks Affecting Construction Delay and Cost Overruns in Indonesia Building Projects. *Innovation in Architecture, Engineering and Construction*, Rotterdam, 841-849.