

CLIENT'S PERCEPTION OF FACTORS CONTRIBUTING TO PROJECT DELAY: CASE STUDY OF PROJECTS COMPLETION IN MULTIMEDIA UNIVERSITY

Maliza Mohd Nor^a, Nurshamimah Samsuddin^a, Masri Sulaiman^b, Aini Qamariah Mohd Yusof^c,
Shahariah Osman^c

^aMultimedia University, Malaysia

^bHonda Malaysia Sdn. Bhd., Malaysia

^cMARA University of Technology

Email of corresponding author: maliza.nor@mmu.edu.my

Abstract

For a company to grow, the construction industry is one of the industry that plays a major role in the economy by giving contribution of employment opportunity and financial support. As globalization is concern, delays in the construction industry is a global phenomenon. Delay is defined as the extended time beyond completion date stated in a contract. Delays can be eliminated and minimized only when their causes or factors affecting delay are identified. This study presents findings of a survey aimed at identifying the most important causes of delays in construction projects from the viewpoint of clients in Multimedia University. This research focused on clients's perception towards the factors contributing to project delay. There are six causes of delay were identified during the research. Based on the literature review, questionnaire is distributed to the respondents who are clients for Multimedia University and a total of 150 responses was set as the target based on the sample size. Top three common causes of delay been identified and with the used of SPSS, the results show significant relationship between the project delay and clients perceptions.

Keywords: Project delay, construction industry, client's perception

1. Introduction

According to (Owolabi, et al., 2014) delay is one of the common serious dilemma construction of project. Delay in project completion is defined as where the project could not be done in a promised time period given (Ali, Smith and Pitt, 2012). Aibinu and Jagboro (2002) found that delay is a situation where both of the contractor or the client together has responsibility toward to the delay in project completion within the original agreed contract period. In (Alaghbari et al., 2005) explained that construction delay is one of the most typical, costly, complicated and uncertain problems occurs in construction projects.

The construction industry is one of business that contributes to the Malaysian economic. The construction sector contributed 5 per cent to the nation's gross domestic product (GDP) (Lindsay, 2012). In the Malaysian construction industry, 17.3% of construction projects experience more than 3 months delay and some of them are abandoned. Hence, the study of factors contributing to delay is incredibly vital in order to cut down the number of projects that experience delay in project delivery (Ali, Smith and Pitt, 2012). Thus, the purpose of this study is to assess the factors influencing delay in project completion. The various factor influencing delay in project completion is break into 4 category which namely contractor's factors, resources factors, external factors and client factors.

1.1 Problem Statement

Delay in the construction project is caused by several factors. Some of which are within the owner's responsibility and the contractor's responsibility. The overlapping nature of the events makes it difficult to discern what proportion of the overall delay is which party's responsibility (Arditi and Gurdamar, 1985). According to (Alkass and Mazerolle, 1996), the contract time, which can be defined as the maximum time allowed for the contractor to complete all work specified in the contract documents, is one of the most important aspects of the entire construction process. Associated delay problems can also result in dispute, arbitration, litigation, total abandonment and protracted litigation by the parties. To some extent contract parties, through claims, usually agree upon the extra cost and time elongation associated with delay. The effect of delay is different for different parties involved in the project although the common problem is the loss of time, money and facility. To the owner, delay means the loss of revenue through production facilities and rentable space not being yet available or continuing dependence on present facilities. To the contractor, delay means the loss of money to be able to continuous pay for the equipment and the persons hired on daily wages. Additionally, the contractor's running capital is tied up and other projects cannot be pursued. To the public it means that buildings and facilities are not available for use as planned. The service revenues lost through delay cannot be recovered (Odeyinka and Yusif, 1997). Most projects incur increased costs when completed later than planned. Additionally, sometimes the structure of become worn out and many of their parts need to be re-done before the end of the construction. Overall the delay occurs due to several factors but any way it affects over the entire project. Due to delay the conflict may start and the contractor claims for the additional payments which is not easy to resolve it. Hence, a detailed investigation will be conducted to figure out the factors affecting delay in project completion.

1.2 RESEARCH OBJECTIVES

- a) To identify factors that contribute to delay in project completion
- b) To analyse and rank the causes of delay rated by clients
- c) To study the effects of delay in project completion

1.3 SIGNIFICANT OF THE STUDY

Through this research, it will contributes and add in the vital knowledge in construction industry. First, there are numbers of research had been conducted in Malaysia on this issue, however it still did not solve yet. There are numbers of abandoned building and the delay effected many parties that involved. Therefore, this research is conduct in order to identify the factors that contributes to the delay in project completion in Malaysia. By publishing this research in future, the information gathered can be utilized by the many parties involved to reduce the issues.

This research may give impact to ensuring the contractors and workers completing project on time. In another hand, this may save time and cost of construction project if the causes of delay been identified. It will help the contractors or the client to have their project done in time by knowing which the factors are causing delay and look into the problem. The findings of the study will able to help the construction industry grow rapidly and become one of the most GDP contributed to Malaysia economy. Besides that, identify the most important factors affecting delay in project and figure out some alternatives toward this problem. After the factors affecting delay been identification, proper conclusions and suggestion to help eliminate such delays are explained for in details. Even we can't eliminate the total delay but still could minimize the delay activities affecting the project (Shaikh, Muree and Soomro, 2010).

2.0 LITERATURE REVIEW

Delay in project normally because of different types of factors and it usually give a bad impact on the cost and also time. In Indonesia construction industry, despite the influenced by labor only ,factors such as equipment, materials, construction methods, site management and professional management were also contributed to the delay in project (Alwi, 2002). A deep study was conducted to investigate into the causes of delays on 130 public projects in Jordan was conducted by (Al-Momani, 2000). This study included investigation on residential, office and administration buildings, school buildings, medical centers and communication facilities. Finding of this study pointed the main factors of delay are poor design, user changes, weather, site conditions, late deliveries, economic conditions and increases in quantity. Besides that, (Hampson, et al., 2001) stated that destructive conflict resolution direct to more higher costs and delays in completing project on time. Likewise, (Chan and Kumaraswamy, 1997) study found out that the five principal and common reasons of delays are poor risk management and supervision, unpredictable site conditions, slow in decision making, client-initiated variations, and necessary alternative of works. There were numbers of variables found that could cause delay and been categorized under that broad factors namely contractors factors, external factors ,client factors and material factors were selected from the literature review. In this study, on contractor's factors would be discussed. The contractor's factors are divided into 6 element which are financial difficulty, poor site management, and materials shortage, late delivery of material, labor shortage and equipment shortage.

Zagorsky (2007) stated that the definition of financial difficulty is in a situation where an individual credit is adversely affected, such as not paying bills. Contractor's financial difficulties are also explain as when the contractor did not have sufficient money to perform work in construction process. This includes paying the cost for the materials, labor's salary and equipment to be used in the project. According to the study found by (Thornton, 2007), it is identified that slow collection, low profit margins and insufficient capital or excessive debt are the 3 vital causes of financial difficulties among contractors. Slow collections ranked top in the list in both of the years in 2007 and also 2005, in which the contractor received late payment from the client. This is supported by (Arditi, et al., 1985; Mansfield, et al., 1994; Majid and McCaffer, 1998; Al-Khalil and Al-Ghafly, 1999; Frimpong, et al., 2003; Arshi and Sameh, 2006; Assaf and Al-Hejji, 2006; Sambasivan and Yau, 2007) who found that delay in payment from the client would eventually cause financial difficulties to the contractor. Result in most of the construction works cannot be carried out due to these financial difficulties.

Effective and efficient site management by contractors is very important to ensure projects are completed on time. Poor coordination contributes to delay from estimated completion time. Poor site management may occur when contractors do not have enough experience and suffer from a lack of knowledge in managing the project team (Kadir, et al., 2005). Hence, poor site management from the project manager will affect the whole team and also the progress of works, resulting in the eventual outcome of project delay. This view is supported by studies conducted by (Arditi, et al., 1985; Augustine and Mangvwat, 2001; Arshi and Sameh, 2006) who concluded that poor site management is one of the factors that contribute to delay in construction projects.

According to (Majid and McCaffer, 1998), material shortages are due to poor materials planning, inefficient communication, unreliable suppliers and late delivery. Mochal (2003) stated that poor planning is mistake number one in project management. This is reflected in the scenario in which poor materials planning from the contractor could lead to material shortage because the materials needed for construction may not be available within a certain time frame.

There are several causes of labour shortages. As stated by (Trendle, 2008), a shortage of skilled labour

can result from an increase in the demand for labour. This is due to the increase in demand for the goods or services provided. In the construction industry context, the buying power of the consumer increases and this will lead to higher quality buildings being produced to meet increasing demands. Thus, more labours are required to produce high quality work.

3.0 RESEARCH METHODOLOGY

In this chapter, it will emphasize on the research questions, framework, data collection methods and data analysis methods.

3.1 RESEARCH QUESTIONS

- a) What are the factors that contribute to delay in project completion?
- b) What are the effects of delay in project completion?

3.2 RESEARCH FRAMEWORK AND HYPOTHESIS

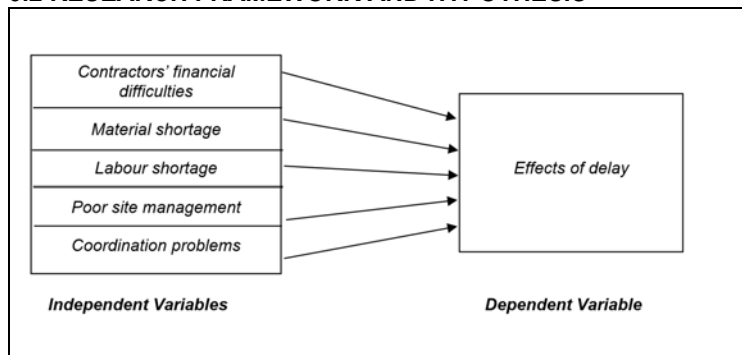


Figure 1: Research framework

- H1: The contractors may have financial difficulties that leads to delay in project.
H2: Material shortage may leads to delay in project completion.
H3: Labour shortage may leads to delay in project completion.
H4: Poor site management may leads to delay in project completion.
H5: Coordination problems may leads to delay in project completion.

3.3 DATA COLLECTIONS METHOD

In this research paper, primary data will be collected by way of the questionnaire from the respondents. To observe the factors that affect the delay in project completion, survey method is used. It is the most simplest and low-cost way to use to gather primary data. It is more convenience and ensure better understanding the on the factors affecting delay in project.

3.4 DATA ANALYSIS METHOD

Statistical Package for the Social Science (SPSS) is used to ran the analysis of survey that been completed by 150 respondents. Thus, Statistical Package for the Social Science (SPSS) will do the statistical data analysis like calculated the descriptive measures. Correlation analysis and regression analysis will be examined for those data was collected.

4.0 FINDINGS

In the previous chapter, the information of the research method used in this research study is performed and the results of the data analysis are presented in this chapter. A total 150 sets of surveys questionnaire had been distributed to all contractors, suppliers, sub- contractors and vendors of Multimedia University.

This study has 150 sets of data to be analyzed.

4.1 MODEL SUMMARY

4.1.1 Reliability Analysis

Table 1: Summary of Reliability Test

Variables	No of items	Cronbach's Alpha
Contractor's financial difficulty	4	0.864
Material shortage	4	0.825
Labour shortage	4	0.946
Poor site management	4	0.851
Coordination problems	4	0.795

Table 1 summaries the value of Cronbach's Alpha for each variables. The value of Cronbach's Alpha for labor shortage is the highest which is 0.946 and above 0.7 thus shows that the variable has very good reliability. In this study, the independent variables have good reliability because the Cronbach's Alpha of these variables is more than 0.7. The least value of Cronbach's Alpha is the coordination problems which is 0.795 but it is also higher than 0.7. Therefore, both of the dependent variable and independents variables are reliable to be used for this study.

4.1.2 Pearson's Correlation Analysis

Table 2: Pearson's Correlation Analysis

	CFD	MS	LS	PSM	CP	ED
CFD	1					
MS	.848**	1				
LS	.590**	.833**	1			
PSM	.796**	.730**	.513**	1		
CP	.530**	.791**	.844*	.619**	1	
ED	.556**	.791**	.844**	.619**	.888**	1

Table 2 showed the results of means, standard deviations and correlation analysis of study variables. An analysis of the correlation for the relationship between dependent variable and the independent variables i.e. financial difficulty ($r = 0.556$, $p < 0.01$), poor site management ($r = 0.619$, $p < 0.01$), material shortage ($r = 0.791$, $p < 0.01$), labour shortage ($r = 0.844$, $p < 0.01$), coordination problems ($r = 0.888$, $p < 0.01$) and effect of delay in project are revealed statistically significant and positive correlation.

5.0 CONCLUSION

The independent variables are tested in this research are significant due to the all r- value all within range. Thus, all variables have a great effect towards delay in project completion.

5.1 LIMITATION OF STUDY

There were some limitation in this study because the questionnaire used a convenience sampling method therefore the sample could not be treated as representative of all contractors from different campuses. Next limitation faced in conducting this research is the sample size of respondents are only consisted of 150 contractors. Data was collected from only one campus which is Melaka Campus. Thus, it cannot represent the all the view of contractors in other campuses.

5.2 RECOMMENDATION

Perhaps for future research, researcher could expand the sample size and cover respondent from another campuses to obtained more accurate data. Besides that, questionnaire should be prepared in multiple language to help the better understanding for the respondent.

6. ACKNOWLEDGEMENT

This research is fully funded by the internal grant of Multimedia University which is Mini fund in the cycle of 2016/2017.

7. REFERENCES

- Aibinu A.A. and Jagboro G.O., 2002. The effects of construction delays on project delivery in Nigerian construction industry. *International Journal of Project Management*, 20, pp. 593-599.
- Alaghbari W.A.M., Razali M.A.K., Salim, A. and Ernawati, 2005. *Factors affecting construction speed of industrialized building systems in Malaysia*. Master thesis. Universiti Putra Malaysia.
- Ali, A. S., Smith, A. and Pitt, M., 2012. Contractors' perception of factors contributing to project delay: case studies of commercial projects in Klang Valley, Malaysia. *Journal of Design and Built Environment*, 7(1).
- Alkass S., M. Mazerolle and F. Harris, 1996. Construction delay analysis techniques. *Journal of Production Performance*.
- Al-Khalil, M.I. and Al-Ghafly, M.A., 1999. Important causes of delays in public utility projects in Saudi Arabia. *Construction Management and Economics*, 17, pp. 647-655.
- Al-Momani, A.H., 2000. Construction Delay: A quantitative analysis. *International Journal of Project Management*, 18, pp. 51-59.
- Alwi, S., 2002. *Non value-adding activities in the Indonesian construction industry: variables and causes*. Unpublished Doctoral Thesis. Queensland University of Technology, Brisbane, Australia.
- Arditi, D., Akan, G. T. and Gurdamar, S., 1985. Reasons for delays in public projects in Turkey. *Construction Management and Economics*, 3, pp.171– 181.
- Chan, D. W. M. and Kumaraswamy, M. M., 1997. A comparative study of causes of time overruns in Hong Kong construction projects. *International Journal of Project Management*, 15(1), pp. 55-63.
- Emy Lindsay, 2012. *Construction industry a significant contributor to the nation's GDP* [online] The Borneo Post. Available at: <<http://www.theborneopost.com/2012/05/30/construction-industry-a-significantcontributor-to-the-nations-gdp/>>
- Hampson, K.D., Peters, R.J. and Walker, D.H.T., 2001. *Negotiation and conflict in innovative procurement environments: The national museum of Australia*. CIB World Building Congress, April, Wellington.
- Majid, M.Z. and McCaffer, R., 1998. Factors of non-excusable delays that influence contractors' perception. *Journal of Management in Engineering*, 14(3), pp. 42-48.
- Odeyinka, H. A., and Yusif, A., 1997. The causes and effects of construction delays on completion cost of housing projects in Nigeria. *Journal of Financial Management of Property and Construction*, 2 (3), pp.31-44.
- Owolabi, J. D., Amusan, L. M., Oloke, C. O., Olusanya, O., Tunji-Olayeni, P. F., Dele, O., and Omuh,

I. O., 2014. Causes and effect of delay on project construction delivery time. *International Journal of Education and Research*, 2(4), pp. 197-208.

Sambasivan, M. and Yau, W.S., 2007. Causes and effects of delays in Malaysian construction industry. *International Journal of Project Management*, 25, pp. 517 - 526.

Shaikh, A. W., Muree, M. R. and Soomro, A. S., 2010. Identification of critical delay factors in construction. *Sindh University Research Journal-SURJ (Science Series)*, 42(2).

Trendle, B., 2008. *Skill and labour shortages-definition, cause and implications*. Department of Education, Training, and the Arts.

Zagorsky, J.L., 2007. Do you have to be smart to be rich? The impact of IQ on wealth, income and financial distress. *Intelligence* 35(5), pp. 489-501.